4. Verb movement: a description

4.1. Introduction

Perhaps the most outstanding characteristic of the syntax of the Germanic languages except English is the so called "verb second constraint": the finite verb is obligatorily either the second or the first constituent in main clauses, second in declaratives and wh-questions, first in yes/no questions and certain other sentence types. In embedded clauses the position of the finite verb varies from language to language: sentence final in German and Dutch, "verb third", that is preceded by the subject and sentence adverbials or other sentence medial predicate adjuncts, if there are any, in the mainland Scandinavian languages, and generally verb second, preceded only by the subject, in Icelandic. Cf. the German examples in (1), Swedish in (2), and Icelandic in (3) (the finite verb underlined):

(1)a. Kennt er Ingrid nicht?
    knows he Ingrid not
b. Er kennt Ingrid nicht.
c. Ingrid kennt er nicht.
d. ....wenn er Ingrid nicht kennt.
    if

(2)a. Känner han inte Ingrid?
    knows he not Ingrid
b. Han känner inte Ingrid.
c. Ingrid känner han inte.
d. ....om han inte känner Ingrid.
    if

(3)a. bakkir hann ekki Ingiríði?
    knows he not Ingrid
b. Hann bakkir ekki Ingiríði.
c. Ingiríði bakkir hann ekki.
d. ....hvort hann bakkir ekki Ingiríði.
    if

As the (b) and (c)-examples show the finite verb is second in the main clause whether or not the initial constituent is the subject. This is also true if the initial constituent is a wh-phrase. Compare the word order in main and embedded questions in the three languages:

(4)a. Welches Buch kaufte er?
    which book bought he
4. V–movement: a description

b. Ich weiss nicht (welches Buch er kaufte).
   I know not
(5)a. Vilken bok köpte han?
   which book bought he
b. Jag vet inte (vilken bok han köpte).
   I know not
(6)a. Hvaða bók keypti hann?
   which book bought he
b. Eg veit ekki (hvaða bók hann keypti).
   I know not

The description of the V2 phenomenon which has become standard in recent
years is that it is the result of verb movement to the front of the sentence plus
optional movement of a maximal category to a position in front of the moved
verb. For instance (2b) would have roughly the derivation in (7), where v is
the trace of the moved verb.

(7)a. han inte känner Ingrid ---→
   b. känner han inte v Ingrid ---→
   c. han inte känner ej inte v Ingrid

(I shall henceforth omit coindexing of the verb trace and its antecedent verb,
except where necessary: normally the identity of the antecedent is obvious.)
This type of description was first proposed, in the framework of EST, by
Koster(1975) for Dutch, and developed by den Besten(1977/1983) (circulated
since 1977, properly published only 1983).1 Since then the description has been
discussed and refined and extended to other languages, including several
non–Germanic languages, in a large number of works. Studies of the Germanic
languages include Safir(1982), Platzack(1986a), Holmberg(1983b, 1985b), and all
the contributions in Haider and Prinzhorn(1986), studies of other languages
include Koopman(1984), Kayne(1983b), Sproat(1985), and Creider(1984). There is
a certain amount of controversy regarding the details of the description: the
exact landing site of the fronted verb (although on this point clearly the most
widely accepted hypothesis today is the one originally proposed by den
Besten(1977/1983), according to which the landing site is C), the landing site of
the fronted subject/object/adverbal, and whether the verb moves to the front
directly from VP or via Infl (cf. Platzack(1985a) and Haider and Prinzhorn(1986)
for an overview of various hypotheses). The description which will be adopted
and defended here is the following: The verb moves to the C–position in two
steps: from VP to Infl, and from Infl to C. The declarative or wh–interrogative
V2 word order results from movement of a category to the "XP–position", the
specifier position of C. Movement of the verb from VP to Infl will be called
V–to–I, movement of the verb from Infl to C will be called V–to–C.

In the following subsections each step in this derivation will be motivated,
and various consequences will be discussed, with special reference to the Scandinavian languages. One of the most controversial aspects of this type of description is the claim that subject-first main clauses, too, are derived by V-to-C and movement to the XP-position. In section 4.4.3 we shall discuss an alternative theory where subject-first main clauses do not involve these two operations.

4.2. Verb movement to Infl

In this subsection I shall argue that all finite clauses are derived by verb movement to Infl (V-to-I), in the Scandinavian languages. The description is essentially that of Platzack (1986a) as modified in Holmberg (1985b). The existence of V-to-I is by no means obvious in the case of the mainland Scandinavian languages or in German and Dutch. In these languages there is no direct evidence of such a movement, which, I assume, is because in these languages Infl and VP are adjacent, and hence V-to-I will be string-vacuous. In Icelandic, however, Infl and VP are not adjacent, and hence V-to-I visibly affects the word order. Let us therefore first consider Icelandic.

The Icelandic sentence is constructed according to the following phrase structure rules (where the rules are only used for ease of exposition; they have no theoretical status).

(8)
1. \( S'' \rightarrow XP \ S' \)
2. \( S' \rightarrow C \ S \)
3. \( S \rightarrow NP \ I' \)
4. \( I' \rightarrow I \ VP \)
5. \( VP \rightarrow S-adv \ VP \)
6. \( VP \rightarrow V \ XP \)

I shall continue using the traditional notation \( S'', S', \) and \( S, \) although it is misleading in that \( S' \) and \( S'' \) are projections of \( C, \) that is \( C' \) and \( C'', \) respectively, while \( S \) is a projection of Infl, that is \( I''. \) VP, NP, PP, etc. stand for maximal projections of V, N, P, etc. "S-adv" marks the position where sentence adverbs, floated quantifiers, and other sentence-medial predicate adjuncts are found.²

These rules build the following structure, given appropriate lexical insertion:
The verb gets inflected by moving to I, where the two merge into a verbal inflected category, the finite verb. This is the movement we have called V-to-I. It leaves a trace, that is a phonetically empty verb, behind in VP (as required by the Projection Principle).

Kaupa+PAST/3. person singular is phonetically realized as keypti. From now on we shall represent finite verbs by their phonological form.

Thus the word order of an ordinary finite embedded clause such as (11a) tells us that a verb movement rule has applied. A couple of additional examples are given in (11b,c):

(11)a. hvort Jón keypti ekki bókina.
   \textit{whether J. bought not the book}

b. að ég hitti aldrei Mariu.
   \textit{that I met never M.}

c. að þeir settu allir smjörið í ískrápin
   \textit{that they put all the butter in the fridge}
   "that they all put the butter in the fridge"
How do we know that the word order V - S-adv - NP in (11) is not base-generated? To begin with, given that a lexical category can only be subcategorized for/assign a 0-role to a sister, there is no way the string V - X - NP can satisfy the subcategorization/0-grid of verbs such as kaupa, hitta, etc. Given binary branching V and the object NP cannot be sisters, and hence NP will not be assigned a 0-role by V. (In standard GB theory, where multiple branching is permitted, the string V - X - NP is ruled out at s-structure as violating the adjacency condition on Case-marking; as discussed in Holmberg (1985b) Icelandic conforms to the adjacency condition on Case-marking just as much as e.g. English.) Second, in the infinitival clauses exemplified in (12), the word order is S-adv - V, not V - S-adv:

(12)a. Eg tel (Jon sennilega vera sterkastan allra).
I consider J. probably be strongest of-all
b. *Eg tel (Jón vera sennilega sterkastan allra).
c. Jón virðist (e1 ekki hafa lesið bókina).
J. seems not have read the book
d. *Jón virðist (e1 hafa ekki lesið bókina).

((12c) is derived by raising of the embedded subject to the matrix subject position.) Now if the word order V - S-adv, as in (11), is the result of V-to-I, applied in order to merge V and Infl, we do not expect this word order in infinitival clauses, since these clauses have neither tense nor agreement. In other words, the word order found in (12a,c) is the base word order. (The situation is, in fact, slightly more complicated in that some infinitival clauses, the PRO-infinitivals, do exhibit the "finite clause word order" of (11). This will be an important datum in section 5, where we shall discuss the raison d'etre of V-to-I.

We thus have both theoretical and empirical motivation for not base-generating structures where adverbials intervene between verbs and their complements.

V-to-I conforms to the "Head Movement Constraint" (HMC) formulated by Travis (1984:131):

(13) The Head Movement Constraint: An X0 may only move into the Y0 which properly governs it.

In (10) Infl governs VP, hence governs its head V. Whether it governs VP properly depends on how we define proper government. Given our definitions, Infl governs VP but does not necessarily govern it properly. However, when Infl is filled by a verb it conceivably does govern VP properly, since verbs are generally proper governors. In any case the requirement that the government relation required by the HMC should be proper government seems unnecessarily strong, at least given the definition of government we have
assumed, according to which government is a relation which holds only between a lexical head and its sister, or, in some cases, a specifier inside the sister. We may therefore reformulate Travis’s HMC as follows:

(14) The revised HMC: An $X^0$ may only move into a $Y^0$ position where it will govern its trace.

V-to-I, as exemplified in (10), conforms to (14). Baker (1985:66ff.) subsumes the HMC under the ECP. However, his notion of proper government and hence of the ECP differs somewhat from the one adopted here. Baker assumes, basically, that a category $\alpha$ is properly governed if $\alpha$ is $\theta$-governed, that is governed by a category assigning $\alpha$ a $\theta$-role, or governed by its antecedent. Given that heads are never assigned $\theta$-roles (only maximal categories are), an empty head can only be properly governed, hence satisfying the ECP, if it is governed by its antecedent. Hence an $X^0$ can only move to a $Y^0$ position where it will govern its trace, which is just what the revised HMC says.

What we want to exclude is, for instance the following structure:

(15)

Following Thráinsson (1986a) we may assume the auxiliary munu "will" is base-generated in Infl. In this structure the infinitival verb has moved to C, and the structure is ill formed: *Lesa Jón mun ekki bókina* is an ill formed sentence. (15) will be ruled out by the HMC and by Baker’s ECP, since C does not govern v. There is, in fact, another independently motivated principle which will also rule out (15). If verb traces, and generally traces of lexical heads pattern with anaphoric traces rather than with variables with respect to the binding theory, as Koopman (1984) has argued, then (15) is ruled out in that v is not bound in its governing category, namely S. The only way v can be bound in S is if its antecedent is in the head position of S, that is in Infl.

Whatever mechanism we employ to rule out structures like (15) while permitting structures like (10), the generalization which emerges from cases like these and the cases of head movement discussed by Baker (1985), is that head movement is a very local phenomenon: the antecedent of a head BC must
be the "closest" c-commanding head. While it seems probable that this
c condition can be subsumed under an appropriate version of the ECP, we shall
here, for convenience, assume the HMC as an independent principle.

Platzack (1986a) and Thráinsson (1986a) both assume V-to-I in Icelandic. The
description in (10) differs from these two works in assuming the movement
leaves a trace in VP. Both Platzack and Thráinsson assume the movement leaves
no trace, and that this results in a pruning of the VP node, on account of the
VP having no lexical head, after V-to-I. Consider the tree structure (10): if the
verb trace is deleted, and if consequently the whole VP disintegrates, the
result will be (16); S-adv as well as the verb complements will be directly
dominated by I'.

\[ (16) \]

This is the analysis proposed in Platzack (1986a); in Thráinsson (1986a) Infl is
directly dominated by S, and consequently S-adv and verb complements will
also be directly dominated by S. The assumption that VP is pruned is motivated
by certain word order facts: S-adv and NP can invert, in this type of
construction, giving the order Jón keypti bókina ekki. In the theories of
Platzack and Thráinsson this inversion requires that the two categories are
sisters. In the present framework (16) is, of course, an unacceptable analysis
since it does not conform to binary branching. There are other reasons, too,
not to accept this analysis. This is discussed in detail in Holmberg (1985b), and
will be discussed also in section 6.8. We do accept the hypothesis that deletion
of a lexical head (deletion of the whole content of a lexical head, not just its
phonetic content) has the result that the projection of the lexical head
disintegrates. What we reject is the hypothesis that this is what happens in the
case of V-to-I in Icelandic.

Now consider the mainland Scandinavian languages, represented by
Swedish: The Swedish sentence conforms to the following phrase structure
rules:

\[ (17) \]

1. \( S'' \longrightarrow XP \ S' \)
2. \( S' \longrightarrow C \ S \)
3. \( S \longrightarrow NP \ I' \)
4. \( I' \longrightarrow S\text{-adv} \ I' \)
5. \( I' \longrightarrow I \ VP \)
6. \( VP \longrightarrow V \ XP \)
The only difference between (9) and (17), the Icelandic and the Swedish rules, is that S-adv is to the right of Infl in Icelandic, adjoined to VP, but to the left of Infl in Swedish, adjoined to I'. The rules (17) generate the following tree:

(18)

(There is no overt subject-verb agreement at all in the mainland Scandinavian languages. I take this to mean that Agr is a purely abstract element.) The main reason for postulating this analysis, S-adv to the left of Infl, rather than to the right of Infl, as in Icelandic, is that the "Icelandic word order" of (11) is ill formed in Swedish:

(19)a. *om Johan köpte inte boken
   if J. bought not the book
b. om Johan inte köpte boken
   that I met never her
c. *att jag träffade aldrig henne
   that I met never her
d. att jag aldrig träffade henne
   that the boys have probably already been here
f. att pojkarna troligen redan har varit här
   that the boys have probably already been here

In s-structure S-adv always precedes the finite verb (in embedded clauses). There is a class of exceptions to this general pattern: so called "embedded main clauses", typically found as complements of (assertive) verbs of saying and thinking; we return to these below. Hence there is no reason to postulate V-to-I across S-adv in Swedish. The word order facts in (19) are compatible with an analysis where Infl is adjacent to VP, as in (18), and V-to-I hence string-vacuous. The result of V-to-I applied to (18) will be (20) (representing only the relevant portion of the tree):
What is the reason for postulating any Infl at all, as a separate lexical head, in Swedish? The alternative would be to base-generate inflected verbs in VP. While recognizing that there is no direct theory-independent empirical evidence against such an alternative hypothesis I shall here pursue the hypothesis that Infl is a universal component of finite sentences, and finite S universally a projection of Infl. Languages cannot vary with regard to whether they have a lexical head Infl or not, but only with regard to the position of Infl. What is the reason for postulating V-to-I rather than movement in the opposite direction, of Infl down into VP; the traditional Affix Hopping? Again we have no direct evidence bearing on this question. In fact, given certain interesting assumptions regarding movement and ECs, and the theory of feature percolation assumed here there may be no difference between V-to-I and Affix Hopping, or, indeed, between V-to-I and base-generation of Infl on the verb, in a case like Swedish:

Lasnik and Saito(1984) have proposed that traces, and generally empty categories, appear only where they are required by some principle of grammar. That is to say movement leaves traces only optionally (in line with the program of making all syntactic rules optional), and/or traces not required for a principled reason can be freely deleted. The principles relevant to (20) are the Projection Principle and the Case Filter. Both are satisfied by virtue of the verb trace; by virtue of the verb trace the sisterhood relation of the verb and the subcategorized object is represented in s-structure (and LF), and provided verb traces can assign Case, the object NP is assigned Case at s-structure. Consider now the structure resulting if we delete the verb trace v. Since v is the head of VP, its deletion means that VP disintegrates, according to the "pruning convention" mentioned above.

Let us briefly consider the status of this "pruning convention". It is highly natural, given the sort of conception of phrase structure sketched in sections 2.2. and 3: The grammar generates binary branching trees of arbitrary complexity. At the terminal nodes lexical categories (bundles of features) are inserted. These will immediately project their features up the tree according to the feature percolation conventions. Subcategorization, the Case Filter, and other mechanisms will filter out ill formed trees. The phrasal categories NP, VP, etc. are not primitives in the theory; they are defined by the features they receive from lexical categories they dominate. They exist only by
virtue of feature projection from lexical heads. The pruning convention will follow if we assume a "projection principle" such that the feature projection relations must hold at every level of syntactic representation. We may formulate this principle as follows:

(21) Structures must conform to the schema \[ X^n \rightarrow ...X^n/X^{n-1} ... \] at all levels of syntactic representation.

Thus, if at some level, there is a change in the composition of the lexical categories in a tree, e.g. one lexical category is deleted, the tree will automatically be adjusted accordingly, in that the features of the deleted category will no longer be present anywhere in the tree.

Deleting \( v \) in (20) then yields (22):

\[
\begin{array}{c}
I' \\
S-adv \\
I' \\
V/I \\
NP \\
inte \\
köpte \\
boken
\end{array}
\]

In this structure the verb, now inflected, will be a sister of its object NP, satisfying the Projection Principle as well as the Case Filter. The joint features of \( V \) and Infl percolate to the node we continue to label "I'", for convenience.

Consider the structure resulting if instead of V-to-I we apply "I-to-V", the traditional Affix Hopping:

\[
\begin{array}{c}
I' \\
S-adv \\
I' \\
VP \\
I \\
V/I \\
NP \\
inte \\
e \\
köpte \\
boken
\end{array}
\]

Deletion of the trace of Infl will yield exactly the same structure as V-to-I with deletion of the verb trace, the structure (22). The features of \( V \) and Infl percolate up the tree, determining the properties of the predicate in either case. The terms "restructuring" or "reanalysis" are sometimes used for processes of this kind, the merging of two adjacent categories where the resulting category combines the properties of the two merged categories (for instance in connection with Romance causatives; cf. Manzini(1983)). Possibly
restructuring/reanalysis is in fact head movement plus trace deletion. I shall, for no very strong reason, continue to regard the structure (22) as the result of V-to-I plus verb trace deletion, rather than base-generation of a finite verb, or I-to-V followed by trace deletion.  

Languages like German and Dutch I assume, following Platzack(1986a), Bennis et Hoekstra(1985), among others, are like the mainland Scandinavian languages in that V and Infl are adjacent, but in these languages Infl is generated to the right of VP, in other words, these languages are "Infl-final". That they are, can be seen from the position of the inflected verb in e.g. (24):

(24) dass Hans das Buch gekauft hat

that H. the book bought has

The d-structure of the German sentence dass Hans das Buch kaufte "that Hans bought the book" is (25):

(25) S' S
    \- C
      \- NP
        \- I'
        \- VP
          \- NP
            \- V
              \- Tns
                \- Agr
      \- dass
      \- Hans
      \- das Buch kaufen [PAST] [3 ps sg.]

In s-structure V and Infl are merged, let us say by V-to-I plus deletion of the verb trace, giving (26):

(26) I'
    \- NP
      \- V/I
        \- das Buch kaufen

In general I assume the position of the finite verb in embedded clauses is a diagnostic of the position of Infl in a language.
4.3. Verb movement to C

The grammars of Icelandic and Swedish outlined so far generate well formed embedded clause structures, headed by a complementizer. Main clauses are not headed by an overt complementizer. This could mean that main clauses have no C. It has occasionally been proposed that C would be a property of embedded clauses only. However there is very good empirical evidence that some main clauses have C. In the Scandinavian languages, as no doubt in many other languages, there are "main clause complementizers" which appear in certain sentence types. One such item is the Swedish question morpheme mânne:

(27) Mânne Tomas kan tala finska?
    WH Tomas can speak Finnish
    "Can Tomas speak Finnish?"

We shall give evidence below that mânne is indeed in C, and not in "topic position". Another example of a "main clause complementizer", known from the literature, is the Arabic declarative clause introducer 'inna:

(28) 'inna Kariiman qara'a alkitsaba.
    DECL Karim has read the-book

From recognizing that some main clauses have C it is a short step to assuming that all main clauses have C, only C need not be (and usually is not) realized as a traditional "complementizer". I will assume just this. In fact I will assume that clauses universally have the structure (29) (this does not hold for small clauses), where the order of the constituents is parametrized:

(29) ( C ( NP (Infl VP))

In the Scandinavian languages, as in all the Germanic V2 languages, the C-position of main clauses is never empty, but is either filled by a "main clause complementizer" or by the finite verb, fronted from Infl to C, the latter being by far the most common situation. This movement of the verb from Infl to C, henceforth V-to-C, is responsible for the asymmetry with regard to word order in main and embedded clauses, typical of most of the Germanic V2 languages. Consider the Swedish examples in (30): (30a) is a well formed embedded clause, (30b) is a main clause with embedded clause word order, and (30c) a well formed main clause:

(30)a. att Eva aldrig skriver brev.
    that E. never writes letters

b. *Eva aldrig skriver brev.

c. Eva skriver aldrig brev.
In main clauses (without a "main clause complementizer") the finite verb must precede S-adv, while in embedded clauses (and main clauses with a complementizer) the finite verb follows S-adv. A couple of additional examples are given in (31):

(31)a. *Boken verkligen var tråkig./OKBoken var verkligen tråkig.
   the book really was boring
b. *Peter säkert vill komma./OKPeter vill säkert komma.
   Peter surely wants to come

The main clause word order is derived as follows: The finite verb is moved from Infl to C:

The result is a well formed s-structure, interpretable as an interrogative. The structure conforms to the HMC: C governs S, which is a projection of Infl, hence C governs Infl. The declarative s-structure is formed by movement of a category to the sentence-initial XP-position, the specifier position of C. Let us call this movement "XP-fronting". The fronted category may be the subject, the object or some other complement, or an adverbial. XP-fronting applied to the subject in (32) gives (33a), the structure of (30b), and XP-fronting applied to the object gives (33b). In (33c) the time adverbial numera "nowadays" has been moved to the XP-position.

(33)a. (S, Eva) (S, skriver) (S, e1) (I, aldrig (I, v, brev)))
b. (S, brev) (S, skriver) (S, Eva) (I, aldrig (I, v, e1)))
c. (S, numera) (S, skriver) (S, Eva) (I, aldrig (I, v, brev, e1)))

This is how the V2 word order typical of the Germanic languages is generated. In the rest of this subsection I shall review some of the evidence that has been put forth in the literature in favour of the hypothesis that V2 crucially involves finite verb movement to C, henceforth V-to-C:
4.3.1. Complementary distribution of complementizer and verb

Fronting of the finite verb is blocked if there is a complementizer in C:

(34) *att/ om/ eftersom skriver Eva aldrig brev
       that if because writes E. never letters

The fronted finite verb and the complementizer have complementary
distribution. There is certainly no obvious semantic or functional explanation
for this. There are cases where you can have either a complementizer or a
fronted verb, but never both at the same time. For instance, conditionals in
Swedish are either verb-first, or else they are introduced by the
complementizer om "if". It is, however, impossible to have both the
complementizer and a fronted verb.

(35)a. Kommer han inte snart, blir jag arg.
       comes he not soon get I angry
       "If he doesn’t come soon, I’ll get angry."

b. Om han inte kommer snart, ...

c. *Om kommer han inte snart, ...

The reason why (35) is ill formed seems to be purely syntactic: both the
complementizer and the fronted verb are compatible with a conditional
interpretation. If the fronted finite verb has to land in the C-position the
ill-formedness of (35c) and (34) follows from the principle prohibiting doubly
filled nodes.

There is plenty of evidence from other V2 languages that complementizers
and the fronted verb have complementary distribution. Consider, for instance,
the following German examples (from den Besten(1983.)):

(36)a. Aber er blieb da stehen, also er die Kinder nicht schreien
       but he kept there stand as if he the children not shout
       hören hätte.
       hear had
       "But he remained there as if he had not heard the children
       screaming."

b. ..., als hätte er die Kindern nicht schreien hören.

c. *..., alsob hätte er die Kindern nicht schreien hören.

In the context als... we can have the complementizer ob, or a fronted finite
verb, but not both.

The examples in (35) and (36) also show that merely stipulating that V-to-C is
a root transformation in order to exclude its application in embedded clauses is
an inadequate solution. In some cases V-to-C applies in subordinate clauses,
but crucially not when the C of the embedded clause is filled by a complementizer. The reverse situation, V-to-C failing to apply in a main clause when that main clause is headed by a complementizer can also be attested. Consider again (37a) = (28), exemplifying the Arabic complementizer 'inna heading a main clause. (37b) shows the alternative structure without 'inna with the verb in initial position (I assume, by virtue of V-to-C; cf. Emonds(1980), Sproat(1985) on deriving V1 word order in so called VSO languages). (37c) shows the result when 'inna is retained and the verb is fronted:

(37a). 'inna Kariiman qara'a al kitaaba
      DECL Kariim has read the book
b. Qara'a Kariimmun al kitaaba
c. *'inna qara'a Kariiman al kitaaba

Consider also the following French examples (from Goldsmith(1981)); following den Besten(1977/1983) and Kayne(1983a) I assume that inversion of subject clitic and finite verb in French is a case of V-to-C:

(38a). Comment vas-tu?
      how go you (i.e. "How are you?")
b. Comment que tu vas?
c. *Comment que vas-tu?

(38a) is the standard form, with inversion. In many dialects the form (b), with the complementizer que and no inversion is used. But there is no dialect where both que and inversion would be acceptable. This follows if que and the fronted verb occupy the same position. See Goldsmith(1981) for other cases of que excluding inversion i.e. V-to-C. Additional examples from Scandinavian will be discussed below.

4.3.2. Adjacency of C and subject

Generally, in the Germanic languages, the complementizer and the subject are adjacent. Analogously, in a main clause the finite verb and the subject are adjacent. Cf. the following Swedish examples:

(39a). Jag undrar (om Maria kommer på besök på söndag).
      I wonder if Maria comes on visit on Sunday
b. *...om på söndag Maria kommer på besök.
c. Kommer Maria på besök på söndag?
d. *Kommer på söndag Maria på besök?
e. Därfor kommer Maria på besök på söndag.
      therefore
4. V-movement: a description

f. *Därför kommer på söndag Maria på besök.

The adverbial på söndag "on Sunday" cannot intervene between a complementizer and the subject, or between the fronted verb and the subject, in (39d,f). The like behaviour of the complementizer and the fronted verb follows if they occupy the same position, namely C, and the condition is that C and the subject (or C and S), should be adjacent. The following facts confirm this account of (39): There are exceptions to the requirement that complementizer and subject should be adjacent. For instance in Swedish sentence adverbs can intervene quite freely between a complementizer and the subject. Analogously sentence adverbs may intervene between a finite verb and the subject in main clauses:

(40) a. ...(om möjligen Maria kommer på besök)
    if possibly M. comes on a visit
    b. Kommer möjligen Maria på besök?
    c. Därför kommer möjligen Maria på besök.

If, however, the subject is a weakly stressed pronoun it must be adjacent to the complementizer, and adjacent to the finite verb in main clauses:

(41) a. *...om möjligen hon kommer på besök.
    if possibly she comes on a visit
    b. *Kommer möjligen hon på besök?
    c. *Därför kommer möjligen hon på besök.

Cf. den Besten(1977/83) for similar data from Dutch. The strong parallelism between complementizer and the finite verb in main clauses argues in favour of the hypothesis that they occupy the same structural position (and perform, in some sense, the same syntactic function).

4.3.3. Main clause complementizers

We have given the Swedish question morpheme månne as an example of a Scandinavian "main clause complementizer". The following facts are evidence that månne is, indeed, in C:

The månne-sentence has the "verb third" word order of an embedded clause:

(41) a. Månne han faktiskt kan tala tretton språk?
    he actually can speak thirteen languages
    b. *Månne kan han faktiskt tala tretton språk?
    c. *Månne han kan faktiskt tala tretton språk?

This is accounted for if månne is in C. V-to-C will then be blocked, provided
that V-to-C is verb movement to C. (41b) is then ruled out, and so is (c), where
verb fronting as well as XP-fronting have applied to the right of C. The
structure of (41a) is roughly (42):

(42) \( _S, \text{månne (}_I, \text{faktiskt kan tala tretton språk)}) \)

A slight complication is caused by the fact that månne can also appear in the
S-adv position, that is left-adjoined to the predicate, like an ordinary sentence
adverb.

(43) Kan Christer månne tala tretton språk?

*Can Christer "månne" speak thirteen languages*

We have already mentioned that sentence adverbs (especially "light" sentence
adverbs) may also appear to the left of the subject (adjoined to S, or,
according to Platzack(1986b), cliticized to C). (44a) is a example of this. Not
surprisingly månne may also appear in this position, as shown in (44b):

(44)a. Kan faktiskt Christer tala tretton språk?

*actually

b. Kan månne Christer tala tretton språk?

Hence (44b) is not a counterexample to the claim that V-to-C and
complementer are mutually exclusive: in (44b) månne is not a
"complementizer", i.e. it is not in C (although possibly cliticized to C). That
(44a,b) are parallel structures is confirmed by the fact that they are both ill
formed if the subject is a weakly stressed pronoun:

(45)a. *Kan faktiskt han tala tretton språk?

*can actually he speak thirteen languages

b. *Kan månne han tala tretton språk?

The reason why (45a,b) are ill formed may be that the weak subject pronoun is
obligatorily cliticized to C (in PF, if not in the syntax), and this cliticization is
blocked by the intervening material (cf. below section 6.11).

Månne also occurs in wh-questions, as an alternative to the more common
construction with a fronted verb.

(46)a. Vilka språk månne Christer talar flytande?

*which languages WH C. speaks fluently

b. Vilka språk kan Christer tala flytande?

c. När månne du har tid att komma?

*when WH you have time to come

d. När har du tid att komma?
4. V-movement: a description

The structure of (46a) is, roughly, (47):

(47) \( S^"_n" \text{vilka språk} (S^"_m" \text{månne} (S_\text{Christer} \ (I_\text{talar ej flytande}))))

Another Swedish item which can appear in C in main clauses is *kanske* "perhaps", as shown by Platzack (1986). As the following examples show, *kanske* can appear in first or in second position in a main clause with embedded clause word order:

(48)a. Kanske Sara inte kommer.
    *Maybe Sara not ought to come*

b. Nästa vecka *kanske* Sara inte kommer.
    *next week*

The structure of (48b) is parallel to (47), except that the category in the XP-position is not a wh-phrase. Its structure is:

(49) \( S^"_n" \text{nästa vecka} (S^"_m" \text{kanske} (S_\text{Sara} (I_\text{inte kommer}))))

Like *månne*, *kanske* can also appear in ordinary sentence adverbial positions: left-adjoined to I' or between C and the subject:

(50)a. I morgon ska Sara *kanske* åka till Lund.
    *tomorrow will Sara perhaps go to Lund*

b. I morgon kommer *kanske* Sara på besök.
    *tomorrow comes perhaps Sara on a visit*

Unlike *månne*, but like most other sentence adverbials, *kanske* can also appear in the XP-position, as in (51), in which case the finite verb is moved to C:

(51) Kanske borde Sara inte komma.
    *perhaps should S. not come*

That *kanske* is in the XP-position in (51) is shown by the fact that this word order is impossible if another phrase occupies the XP-position:

(52) *Nästa vecka *kanske* borde Sara inte komma.
    *next week maybe should Sara not come*

If the XP-position is filled *kanske* must either be in C, in which case it will block V-to-C, or in one of the sentence internal adverbial positions. A third item, in Swedish, which can introduce a main clause with embedded clause word order is *bara* "only", as in (53):
(53)a. Bara Olle inte också kommer!
   only Olle not also comes
   "I hope Olle doesn’t come, too."
   b. *Bara kommer Olle inte också!
   c. *Bara Olle kommer inte också!

Sentence initial bara has the force of "I wish that". The word order is accounted for if bara is in C, blocking V-to-C. (Like månne but unlike kanske bara cannot be in the XP-position.) Cf. Sigurðsson(1986) on a description of items corresponding to månne, kanske, etc. in Icelandic, a description very close to the one proposed here for Swedish.

4.3.4. Ha-deletion

This argument is due to Platzack(1986a). The aspectual auxiliary ha "have" can be omitted in Swedish in certain contexts: in finite embedded clauses, and in main clauses when preceded by another auxiliary, i.e. when ha is not finite. It cannot be omitted when finite in a main clause.

(54)a. Jag hörde att Johan (har) varit sjuk?
      I heard that Johan has been ill
   b. Sara borde (ha) kommit tidigare.
   c. *Johan (har) varit sjuk.

As noted by Andersson and Dahl(1974) it looks as if Swedish ha-deletion is an "anti-root" rule, and as such a counterexample to Ross’s Penthouse Principle, according to which all syntactic rules which apply in embedded clauses also may apply in main clauses, but not vice versa. As far as I know ha-deletion is the only known presumptive counterexample to the Penthouse Principle. As Platzack notes it is in fact not a counterexample: given V-to-C ha-deletion can be stated as in (55) (a similar solution, in a slightly different formal framework is suggested by Andersson(1977,483,536); cf. also den Besten(1977/1983)).

(55) Ha-deletion: Delete auxiliary ha unless it is in C.

In (54a) C is occupied by the complementizer, in (54b) by the finite auxiliary borde, and in both cases ha can be deleted. In (54c), however, ha is in C, and therefore cannot be deleted. Ha-deletion thus applies in both main and embedded clauses, and hence does not violate the Penthouse Principle. We shall come back to this rule later, and show that the unless-clause need not be stipulated, but follows from a general principle of grammar, so that the rule is simply "delete auxiliary ha ".

We make the prediction that ha-deletion should be possible in månne-questions, and clauses where kanske or bara, by hypothesis, are in C.
The prediction is born out, giving additional support to the hypotheses that these are indeed in C, and more generally, that main clause V2 word order crucially involves V-to-C.

(56)a. Måtte Christer (har) sett den här filmen?
   *WH* Christer *has seen this* film
b. Kanske Sara (har) varit här.
   *maybe* Sara *has been here*
c. Bara Olle inte (hade) kommit, så hade allt varit OK.
   *only* Olle *not had* come *then had all been* OK
   "If only Olle hadn't come everything would have been OK."

4.4. XP-fronting

As mentioned, declaratives and WH-questions are formed by fronting a category, the subject, an object, or an adverbial, to a position to the left of C, the XP-position. This is fairly uncontroversial in the case of "topicalization" of objects or adverbials. It is somewhat more controversial in the case of wh-movement, which "traditionally" (since Bresnan(1970)) is analyzed as movement to C. It is most controversial in the case of subject-first main clauses, which, according to our description, also involve V-to-C and XP-fronting of the subject, which entails that, for instance, the Swedish string Sara är sjuk "Sara is ill" will have quite different analyses depending on whether it is a main or embedded clause. Let us deal with each of these cases in turn:

4.4.1. Topicalization

We assume fronted objects and adverbials land in the XP-position. Another possibility, following Chomsky(1977), is that a topicalized constituent is base-generated in topic position, and that the gap in S is created by wh-movement, where the wh-phrase is never phonetically realized. There is, in fact, a construction in the Scandinavian languages which plausibly has this type of derivation, the left-diallocation construction (57) (also found in Dutch and German).

(57)a. Sara, henne kan man lita på.
   *S.* *her can you rely on*
b. Den här boken, den läste jag förra året.
   *this book it read I last year*
c. Johan, han vet allt om dej.
   *J.* *he knows all about you*
This type of construction has been termed "Contrastive Left-Dislocation" (CLD), and I will adopt this term, although it is misleading in that there need be no contrast involved (although there often is). Basically following Koster (1978), I propose the structure of (57a) is (58), where the initial constituent is base-generated in "LD position", outside S", under the node E ("expression"), and the pronoun is moved to XP-position:

(58) \( E (S_r \text{,henne}; (S_r \text{,kan}; (S_r \text{man lita på e} _i ))) \)

The S" is interpreted as "being about" the (referent of) the left-dislocated phrase. The formal expression of this relation is the coindexing of the LD phrase and the pronoun in the XP position. Since this type of LD construction is both semantically and syntactically very similar to "ordinary topicalization", as in (59), one might reasonably assign the same structural description (58) to these, except that the fronted pronoun is phonetically empty:

(59)a. Sara kan man lita på.
    b. Den här boken läste jag förra året.
    c. Johan vet allt om dej.

However I shall, for no very strong reason, assume that in these sentences the initial constituent is actually in XP-position, locally binding a trace in S, as in (60):

(60) \( S_r \text{,Sara}; (S_r \text{,kan}; (S_r \text{man lita på e} _i ))) \)

Following Taraldsen (1986b) I assume the fronted constituent, when it is an argument, is interpreted as an operator of the general form "For \( x = \text{XP}_i \)", where the XP-phrase provides the restriction on the operator. Thus the the trace locally bound by the topicalized phrase is a variable.

In some descriptions of V2 languages, e.g. den Besten (1977/1983) C contains several positions, one of which is filled by a complementizer or a verb, and another is a landing site for XP-fronted categories. While such a description can be made empirically equivalent with the one proposed here, our description seems preferable by general criteria of simplicity. The place in the system of categories of a den Besten-type category C', which is a sister of S and consists of a maximal phrase and a lexical head, is unclear: is it a maximal category, and what is the relation between the fronted phrase, C, and S? In our theory the left periphery of the sentence conforms to the X-bar schema: C is the head of the projection consisting of C, S', and S". S (= I") is the complement of C, and XP the specifier (the "subject") of C.
4.4.2. Wh-movement

I assume wh-movement is a special case of XP-fronting, that is when the fronted category is (+/-WH): (+WH) in questions, (-WH) in relatives. "Traditionally" (since Bresnan(1970)) the landing site of wh-movement is taken to be C. This analysis well motivated for (Modern) English, where wh-phrase and complementizer have complementary distribution in embedded clauses.

(61)a. ...what she's reading.
    b. ...that she's reading today's paper.
    c. *...what that she's reading.

The explanation for the complementary distribution is particularly straightforward if the wh-phrase lands in the head position of C. If it is adjoined to C, as sometimes assumed (cf. e.g. Radford(1981:168ff.)), what that is still excluded as the wh-phrase does not c-command, hence does not bind its trace; cf. Pesetsky(1982), Kayne(1981a).

But if the finite verb in e.g. Swedish main clauses is in C, then the wh-phrase must be outside C at least in this construction. Since a fronted wh-phrase cannot co-occur with another fronted phrase, the obvious hypothesis is that the wh-phrase lands in the XP-position:

(62)a. *Vad till dej har Eva skrivit?
        what to you has Eva written
    b. *Till dej vad har Eva skrivit?
    c. *Vem min bok har stulit?
        who my book has stolen
    d. *Min bok vem har stulit?

The structure of e.g. Vad har Eva skrivit? "What has Eva written" would then be (63):

(63) (S"vadj (S"harj (S"Eva (tj,vi skrivit ej )))})

Swedish, like many other languages, permits, and in some cases requires a complementizer to co-occur with a fronted wh-phrase:

(64)a. Jag undrar vem som har skrivit det här.
        I wonder who that has written this
    b. Jag vet inte vilken bok som hon ville låna.
        I know not which book that he wanted to borrow

Some dialects permit wh +som only in subject questions, hence in (64a) but not in (b), a fact which need not concern us here (cf. Taraldsen(1986b) on the
distribution of *som*. Wh + complementizer is found in many languages (cf. Radford (1981: 169) for some examples. A plausible hypothesis is that embedded questions have the same structure as main clause questions, with *som* in C instead of the finite verb:

(65) \( (S'\text{vem} (S, \text{som} (S_1 e_1 (I, \text{har skrivit det här}))) ) \)

The fact that you can right-node raise *som* plus the rest of the sentence, leaving wh stranded supports this analysis.

(66) Jag vet vilka fotbollslag, och Peter vet vilka hästar som

\[ I \text{ know which football teams and } P. \text{ knows which horses that} \]

kommer att vinna den här veckan.

\[ \text{will win this week} \]

Cf. also Baltin (1982). Baltin proposes a constraint, the "Like-Attracts-Like Constraint", which excludes the possibility of adjoining phrasal constituents to non-phrasal constituents, and vice versa. This would rule out the possibility of adjoining a wh-phrase to C, leaving (65) as the favoured analysis.

In English main clause questions C is filled by a fronted auxiliary, if, as argued by den Besten (1977/1983), "Subject-Auxiliary Inversion" is V-to-C. If so, the wh-phrase must be outside C in English, too, roughly as shown in (67):

(67) \( (S'\text{who} (S, \text{did} (S_1 \text{you} (I, \text{vi} (\text{VP talk to e}_1)))) ) \)

The main argument that the inverted auxiliary is, indeed, in C, is that it has complementary distribution with a complementizer:

(68)a. If I had been rich...
    b. Had I been rich...
    c. *If had I been rich...

Given the possibility of empty lexical heads -- we have assumed that there are verb traces = empty verbs, and in section 6 we shall discuss many other instances of empty heads -- we might assume an empty complementizer corresponding to *som* in English embedded questions, making the structure of English embedded questions congruent with that of main clause questions. I will not pursue this possibility here, but cf. below section 5. It might be noted that Icelandic embedded questions also do not have an (overt) complementizer, suggesting that they, like the corresponding English construction, have wh in C. Of course Icelandic main clause questions have the finite verb in C, by all the usual arguments, as shown in (69b), implying that both possibilities, wh in XP-position and wh in C may be realized in the same language.
4. V-movement: a description

(69)a. Eg veit hvaða útlending (*sem/að) hann hitti.
I know which foreigner that he met
b. Hvaða útlending hitti hann?
which foreigner met he
"Which foreigner did he meet?"
c. *Hvaða útlending hann hitti?

4.4.3. Subject-first main clauses

4.4.3.1. Alternative descriptions: Travis's description

I have claimed that a subject-first main clause such as (70a) has the structure (b):

(70)a. Johan är sjuk.
J. is ill
b. (S',Johan (S,är (S, e_i (I,v sjuk))))

The finite verb moves to C, and the subject to the XP-position. Thus main clauses are structurally congruent with e.g. object-first main clauses, not with potentially string-identical embedded clauses. The two movements, V-to-C and subject fronting, are in many cases string-preserving, when applied together, in the Scandinavian languages. This, naturally enough, tends to cause some initial suspicion against the analysis. In the mainland Scandinavian languages the two movements are, however, string preserving only in the absence of S-adv, i.e. sentence-medial adverbs or other predicate adjuncts. If there is a negation, adverb, or floated quantifier the two movements will result in the word order shown in (71a), as opposed to (71d), as discussed earlier: in main clauses the finite verb will precede S-adv, while in embedded clauses it will be in the base-position of Infl, to the right of S-adv:

(71)a. Johan är inte sjuk.
  b. *Johan inte är sjuk.
  c. *att Johan är inte sjuk.
  d. att Johan inte är sjuk.

This word order contrast is, you might say, the primary motivation for the analysis shown in (70). But of course there are other conceivable accounts of this word order contrast. In traditional Scandinavian grammar the word order contrast between main and embedded clauses is usually viewed as a variation in the position of S-adv (cf. e.g. Wessén(1970:223f.)). In transformational terms there would be a transformation moving S-adv rightwards around the finite verb, in main clauses. (72) would be a rough formulation of such a rule:
(72) \[ X - S\text{-adv} - V/I - Y \implies X - \emptyset - V/I - S\text{-adv} - Y \]

This would be a root transformation. However this account attains only a very low level of descriptive adequacy. To begin with it fails to account for the word order of main clauses introduced by måna, kanske, or bara. The rule should be prevented from applying in such clauses -- which would take a rather complicated set of conditions on the rule, given all the facts discussed in section 4.3.3. Second, it makes it look like an accident that the finite verb is necessarily the second constituent in subject-first main clauses as well as in other declaratives and wh-questions. In subject-first declaratives it would be a result of (72), but in all other declaratives a result, presumably, of verb movement ("subject-verb inversion" in traditional terminology. Furthermore it misses the cross-linguistic, or at least cross-Germanic generalization that V2 is always the result of verb movement leftwards. Consider German: there can be little doubt that (73a,b) are related by verb movement leftwards:

(73a) Meine Mutter steht immer sehr früh auf.
    my mother gets always very early up
b. weil meine Mutter immer sehr früh aufsteht.

In particular it cannot be derived by moving immer sehr früh auf rightwards; the particle auf is, by usual assumptions, in construction with the verb, and hence immer sehr früh auf does not make up a constituent.\(^6\)

In fact the material moved rightwards in Scandinavian clauses according to rule (71), does not necessarily make up a constituent either. It seems very unlikely that the adverb and the quantifier in (74) form a constituent. As shown in (74b) they cannot occur together as a modifier of NP, and as shown in (74d) they cannot occur sentence-finally together.

(74a) att barnen tydligen alla är för trötta.
   that the kids apparently all are too tired
c. Alla barnen är tydligen för trötta.
d. *Barnen är för trötta, tydligen alla.
e. Barnen är alla för trötta, tydligen.

Yet, according to (71) they would undergo S-adv movement rightwards together, to give the word order (75):

(75) Barnen är tydligen alla för trötta.

If (75) is instead derived by verb movement leftwards, it makes no difference whether or not the predicate adjuncts form a constituent.
A much more promising account of the main clause–embedded clause asymmetry is the one proposed by Platzack (1982a,b), and more recently proposed for German by Travis (1984). According to this description -- let us call it "Travis's description", since Platzack does not himself countenance this description in more recent work of his -- Swedish S has the basic word order (76) (= the one we have proposed for Icelandic). I have rewritten the description according to binary branching; this makes no difference for the issues discussed here.

(76) \( S \rightarrow NP \rightarrow \text{Infl} \rightarrow S-adv WP)\)

A subject–first declarative will have the following analysis:

(77) \( S, Johan \rightarrow I, V/\ddot{a}r \rightarrow V/\ddot{a}r WP inte v sjuk ))\)

The verb moves to Infl, across S-adv. In an embedded clause V-to-I is, however, blocked by an empty element (an empty modal morpheme in Platzack's (1982a,b) theory). Hence in embedded clauses the finite verb is a result, instead, of Infl moving down into VP? The reason why main clauses do not have this empty element in Infl blocking V-to-I is that in main clauses this empty element is not licensed. In embedded clauses, on the other hand, it is licensed by the complementizer, which serves to antecedent–govern the empty element in Infl (in fact, given that C governs S, and Infl is the head of S, the complementizer will also lexically govern the empty element in Infl). The structure of an embedded clause is thus (78):

(78) \( S, att \rightarrow S, Johan \rightarrow I, e \rightarrow WP inte \rightarrow V/\ddot{a}r \rightarrow V/\ddot{a}r WP inte \rightarrow v sjuk )))\)

Other main clause structures would then involve movement of the finite verb from Infl to C, and fronting of a constituent to the XP-position. With regard to the data discussed so far, this description is, by and large, descriptively equivalent to the one adopted here, call it "den Besten's description". It accounts for the absence of V2 word order in the presence of a complementizer, as the complementizer licenses the empty element in Infl blocking V-to-I. Hence it also predict the possibility of main clause complementizers like månne blocking V2 word order just as embedded clause complementizers do. The ha-deletion facts can be accounted for by the rule "Delete ha anywhere except in Infl or C". And although object–first and adverbial–first main clauses do not have the same derivation as subject–first main clauses, the fact that the finite verb is in second position in all of them need not be accidental, but can, presumably, be seen as a consequence of
general requirements on clausal projections, that is S" and S. Both consist of a specifier (XP and the subject, respectively), immediately followed by the head (C and Infl, respectively), which may, and in some cases must, be filled by the finite verb, giving V2 word order in main clause S as well as in S".

The main difference between Travis's description and den Besten's description is, then, that subject-first main clauses are structurally distinct from other declarative main clauses, not involving V-to-C or XP-fronting, in Travis's description, while they are structurally identical to other main clauses in den Besten's description. The choice between the two descriptions depends on whether there are any such differences between subject-first main clauses and other main clauses as would be predicted by Travis's description. If not, and if subject-first main clauses behave essentially just like other declarative main clauses, then we have an argument against Travis's description, for den Besten's description.

In the following I will first show that subject-first main clauses do not behave differently from other main clauses when embedded (as an "embedded root phenomenon"). Second, I will show that subject-first main clauses behave like other main clauses with respect to contrastive left-dislocation. Third, I will show that various constructions which require V1 word order also support den Besten's description over Travis's description. Finally I will discuss the fact that there are stricter conditions on object-first main clauses than on subject-first main clauses, in that the fronted object must be either focus or theme of discourse while the initial subject need be neither. It will be shown that this asymmetry is compatible with den Besten's description, given certain well-motivated assumptions.

4.4.3.2. Embedded main clauses

Travis's description allows for the possibility of V-to-I, hence V2 word order, in embedded clauses, if the complementizer permits but does not require an empty element in Infl — indeed it would take some additional assumption(s) to make a complementizer actually require empty Infl. And of course there are embedded clauses with V2 word order in the Scandinavian languages, not only in Icelandic, but in mainland Scandinavian as well. These occur typically embedded under (asserted) verbs of saying and thinking, in the same sort of contexts where we find "embedded root phenomena" in English, as studied in e.g. Hooper and Thompson(1972). The examples are Swedish.

(79)a. Hasse sa (att han var inte rädd förryska ubåtar).
   H. said that he was not afraid of Russian submarines

b. Det vet jag (att Eva kommer alltid i tid).
   that know I that E. comes always on time

I will refer to these as Embedded Main Clauses (EMCs). EMCs such as (79a,b) are
easily integrated in Travis’s description: e.g. in (79b) the EMC would have the analysis (80):

\[(80) \ (S', \text{att} \ (S, \text{Eva} \ (I, (\text{kommer} \ S, \text{alltid} \ (\text{VP} \ S, \text{v i tid}))))\]

In the type of description countenanced here, where the subject in subject-first main clauses is in the XP-position, the structure of the EMC in (79b) would have to be something like (81):

\[(81) \ (S', \text{att} \ (S", \text{Eva} \ (S, \text{kommer} \ (S, \text{e} \ (I, \text{v alltid i tid}))))\]

That is to say, the complementizer att can take either S or S" as complement. In the latter case we have an EMC.

Now (80) might seem preferable to (81) by virtue of its greater simplicity, but this is probably a false impression. To begin with there are EMCs introduced by an object or an adverbial:

\[(82)a. \ \text{Jag vet (att Eva kan man lita på).} \]
\[\text{I know that E. can you rely on}\]
\[b. \ \text{Vi har bestämt (att i morgon stiger vi upp tidigt).} \]
\[\text{we have decided that tomorrow get we up early}\]

Hence EMC’s with the general form (81) must be assumed in Travis’s description as well. In both descriptions e.g. the EMC in (82a) will have roughly the analysis (83):

\[(83) \ (S', \text{att} \ (S", \text{Eva} \ (S, \text{kan} \ (S, \text{man} \ (I, \text{v} \ (\text{VP} \ S, \text{lita på e }))))))\]

Now given Travis’s description we might expect to find certain differences between subject-first EMCs (analyzed as in (81)), and other EMC’s (analyzed as in (83)). One syntactic phenomenon which we would expect to be sensitive to the structural contrast between (81) vs. (83) is extraction. According to standard accounts extraction is sensitive to the number of intervening nodes, in particular clausal nodes. In (83) e.g. a wh-phrase moved out of the EMC S will have to pass at least two more clausal nodes than in (81), hence Travis’s description predicts that wh-extraction should be easier from subject-first EMCs than from other EMCs. In fact standard accounts of wh-extraction give no reason to believe that EMCs analyzed as in (81) would behave differently from ordinary embedded clauses with respect to extraction. However, as shown by the following examples extraction is excluded from all EMCs, while extraction from a corresponding ordinary embedded clause, the (a)-example, is permitted:
4. V-movement: a description

(84)a. Vilken festi sa hon (att vi inte skulle köpa roliga hattar which party said she that we not should buy funny hats
till e₁) for
b.*Vilken festi sa hon (att vi skulle inte köpa roliga hattar
till e₁)
c.*Vilken festi sa hon (att roliga hattar skulle vi inte köpa
till e₁)
d. *Vilken festi sa hon (att antagligen behövde vi inte köpa
doliga hattar till e₁)?

In (84a) we have an ordinary embedded clause (S-adv preceding the finite verb), in (b) a subject-first EMC (the finite verb preceding S-adv), in (c) an EMC with a topicalized object, and in (d) an EMC with a preposed adverb antagligen "probably". All of (84b,c,d) are completely unacceptable -- as predicted by den Besten's description, where they all have basically the same structure, but not by Travis's description.⁹

The following examples are adduced to confirm that extraction from subject-first EMCs is indeed excluded:

(85)a. Ryska ubåtar; sa Hasse (att han faktiskt är rädd för e₁) 
Russian submarines said H. that he actually is afraid of
b. *Ryska ubåtar; sa Hasse (att han är faktiskt rädd för e₁). 
c. När; sa du (att Eva alltid kommer e₁)?
when said you that E. always comes
d. *När; sa du (att Eva kommer alltid e₁)?

Travis(1984:118) gives some data from Yiddish (another Germanic V2 language) purported to show that extraction is possible, in this language, from embedded clauses only if they are subject-first. This, according to Travis, shows that subject-first embedded clauses are structurally different from embedded clauses with other categories in first position. The data she gives are relatives, and their relevance is somewhat hard to determine, since Yiddish relatives seem to involve some additional complications and word order possibilities. However, as far as I understand, Yiddish will permit extraction from an embedded clause with the word order of (84b), but not from embedded clauses with the word order of (84c or d). The same holds true of Icelandic, as shown by (86):¹⁰

(86)a. Hvad bók; sagðir þú (að Jón vildi ekki gefa Haraldi e₁)? which book said you that J. wanted not give (to) Haral
d. *Hvad bók; sagðir þú (að Harald; vildi Jón ekki gefa
e₂ e₁)?
c. *Hvad bók; sagðir þú (að sennilega vildi Jón ekki gefa
Now in both Yiddish and Icelandic the base word order of the sentence is NP - Infl - S-adv - VP. This means that embedded clauses and subject-first main clauses will generally have exactly the same word order. This, in turn, means that we cannot tell, by inspecting the string, whether a subject-first embedded clause is an ordinary embedded clause or an EMC; there is always the possibility of analyzing it as an ordinary embedded clause, and hence extraction will be possible. On the other hand, if an embedded clause is introduced by an adverbial or an object we know that it is an EMC (disregarding cases of Stylistic Fronting and the like; cf. fn.10), and we expect extraction not to be possible from such an embedded clause. Hence the Yiddish and Icelandic facts do not provide evidence in favour of Travis’s description.

It should be noted, however, that there are other possible explanations why you cannot extract out of EMCs, which do not rely on the number of nodes that have to be crossed by the extracted category. For instance in the framework of Kayne(1983b) the number of nodes crossed under extraction is irrelevant. Consider the following explanation, in terms of the (modified) CED, repeated here:

(87) No category can be extracted from a non-θ-governed constituent.

A category is θ-governed if it is governed and assigned a θ-role by the same category. If an EMC is not governed, then extraction from an EMC will be ruled out by the CED. It is by no means obvious, however, that the embedded clause introduced by att, containing an EMC, as in e.g. (88) is less governed than the corresponding ordinary att-clause.

(88) Hasse sa (att han var inte rädd för ryska ubåtar).

H. said that he was not afraid of Russian submarines

The verb säga "say" (past tense sa) requires a clausal complement to which it assigns a θ-role, and the category containing the EMC satisfies this requirement. On the other hand säga can also take a direct report as complement:

(89) Hasse sa: "Jag är inte rädd för ryska ubåtar".

H. said I am not afraid of Russian submarines

Almost needless to say there can be no extraction from direct reports. In general it seems the relation between the matrix verb and the direct report is not a case of "subordination" in the same way as in ordinary V + embedded clause structures. Possibly we should not characterize the relation between säga and the EMC in (89) as "government". Now possibly the relation between
säga and the EMC in (88), although the EMC is not a direct report, falls together with the direct report case rather than with ordinary subordination as regards the relation between the matrix verb and the embedded proposition. If such an hypothesis can be corroborated, then extraction from EMCs will be ruled out as violations of the CED. In that case the number of nodes which separate the landing site and the launching site of a category extracted from an EMC will be irrelevant, in that the construction will always be ruled out by the CED. On the other hand we might still expect the number of nodes to have some effect on the acceptability level, so that e.g. (84d) would be worse than (84b), as it violates both the CED and Subjacency. However, if there is a difference it is very slight indeed (cf. fn. 9), certainly too slight to provide a basis for a choice between the two descriptions under study. We may conclude that facts from EMCs do not at any rate provide evidence against den Besten's description, in favour of Travis's description.

4.4.3.3. Contrastive Left-Dislocation and the så-construction

As mentioned there is a type of left-dislocation in the Scandinavian languages (and Dutch and German), in which a category is left-dislocated outside S", and a proform is fronted to the XP-position, the so-called CLD construction.

(90)a. Eva, henne kan man lita på.
    E. her can you rely on

b. Rom, där vill jag inte bo.
    Rome there want I not (to) live

A subject may also be left-dislocated in this way:

(91)a. Tommy, han kan faktiskt tala fem språk flytande.
    T. he can actually speak five languages fluently

b. London, det är troligen den tråkigaste staden i Europa.
    London it is probably the most boring city in Europe

Under what we have called den Besten's description the general structure of the CLD construction will be as in (92), where "LD" is the left-dislocated constituent, and e may be any (major) maximal category, including the subject.

(92) \( E \text{ LD } (S" +(\text{pro}) S') V/I (S \ldots e \ldots v \ldots )) \)

Under Travis's description there would, presumably, be two distinct structures, depending on whether LD is the subject or not. The
non-subject construction will have the structure (92), but the subject-CLD construction, in analogy with other subject-first main clauses, presumably would not require V-to-C and subject fronting to the XP-position, but the structure would be essentially as in (93):

\[(93) \ (E \ LD \ (S', \ \sigma \ (S \ (+\text{pro}) \ (I', \ V/I \ ...(\text{VP} \ ...)))\))\]

Consider at this point V-to-C in Travis's description. As we have seen, according to this description V-to-C only applies in non-subject-first main clauses, that is when a constituent is topicalized to the XP-position (disregarding for the moment yes-no interrogatives and other verb-first structures). In this case, when the XP-position is filled, C must be filled as well, and, for whatever reason, must be filled by the finite verb in main clauses. In subject-first main clauses there is no requirement that C be filled. In this case, presumably, an unfilled C can simply be deleted. In den Besten's description, on the other hand, C must always be filled, either by a complementizer or by the finite verb. How, then, can the subject-CLD structure (93) get around the requirement that C be filled by the finite verb. In other words, why is (94a) a well formed CLD construction and (94b) an ill formed one, instead of the other way around, in Travis's description:

\[(94a) \ Tommy, \ han \ kan \ tala \ engelska.\]
\[\text{Tommy be can speak English}\]
\[(94b) *\text{Tommy, kan han tala engelska.}^{11}\]

Presumably this is because the initial constituent is not in the XP-position, but in the "LD-position", as indicated in (93), and in this case there is no requirement that C be filled (presumably, since empty, ungoverned nodes cannot be permitted, C is deleted/pruned, leaving LD a sister to S).

We conclude that the CLD construction can be accounted for under either description, and hence does not provide arguments to choose between the two descriptions. Now I will turn to a related construction found (as far as I know) only in Finland-Swedish, and which does provide an argument in favour of den Besten's description.

There is a CLD-like phenomenon in connection with preposed adverbials, in standard Swedish: a semantically empty item så can be (and very frequently is) inserted between the adverbial and the rest of the clause.\(^{12}\)

\[(95a) \ Igår \ så träffade \ jag \ Sara.\]
\[\text{yesterday so met I Sara}\]
\[(95b) \ När \ Ingrid \ kommer \ så börjar \ vi.\]
\[\text{when I. comes so begin we}\]

c. Om han gör sitt bästa så kan han vinna.
   *if he does his best so can he win*

Given the existence of the CLD construction the analysis (96), of which (97) is an instance, rather suggests itself:

(96) \[ E (ad{\text{v}}) (S, 'så S') \]

(97) \[ E \text{ Igåri} (S, 'så) (S, \text{träffade} (S, \text{jag v Sara e1}))) \]

'Så is coindexed with the adverbial LD phrase, thus linking it to the clause, where 'så is, in turn, coindexed with a trace in S, in close analogy with the argument CLD construction discussed above. "(adv)" in (96) does not represent a syntactic feature on a par with (+/-V) etc., but only indicates that the LD phrase is an adverbial, in the somewhat loose sense of a non-obligatory constituent. 'Så is incompatible with preposed non-adverbial phrases, be they arguments or predicates, regardless of their categorial status (although, as discussed in section 3, their categorial status is not unrelated to their function as arguments or predicates):

(98)a. Sara (*så) träffade jag igår.
   *Sara so met I yesterday*

b. Två timmar (*så) varade mötet.
   *two hours so lasted the meeting*

c. Nykter (*så) är han sällan.
   *sober so is he seldom*

d. I Malmö (*så) vill ingen bo.
   *in Malmö so wants nobody (to) live*

e. Vann (*så) gjorde vi, men det var inte lätt.
   *won so did we but it was not easy"

'Win we did, but it wasn’t easy"

However, I shall here assume another analysis of the *så*-construction, with various interesting consequences (only some of which will be discussed here). According to this analysis there is no "adverbial trace" in S, and *så* is an element inserted in the XP-position just in case there is a category in LD position but no trace in S. Seen from another angle *så* blocks a local binding relation between a preposed phrase and a trace in S. This is harmless in the case of adverbials, but harmful in the case of preposing of arguments and other categories which obligatorily leave a trace behind. Elisabeth Engdahl (p.c.) has observed that adverbial *wh*-phrases do not accept *så*:

(99)a. När (*så) träffade du Sara?
This would be explained if the wh-phrases, being operators, do bind a trace (a variable) in S, and hence are incompatible with så -- because så blocks the local binding relation between the wh-phrase and its trace. Adverbials which do not include a (WH) feature are not operators, at any level of representation, and hence need not bind a trace in S.

Now in certain varieties of Finland-Swedish så is not incompatible with preposed non-adverbials, but can be inserted quite freely between a sentence-initial phrase and the rest of the clause, as shown in (100):

(100)a. Maria så förstår inte vad jag menar.
   Maria so understands not what I mean
b. Nyheterna så vill jag gärna lyssna på.
   the news so want I rather listen to
c. Till exempel reseskildringar så tycker jag att är väldigt
   for example travel stories so think I that are very
   interessanta.
   interesting

Notice that så appears in subject-first, as well as in object-first sentences. It does not, however, appear in embedded clauses:

(101)a. Hon så att Maria (*så) förstår vad jag menar.
   she said that M. so understands what I mean
b. Jag frågade om brevet (*så) hade kommit fram.
   I asked if the letter so had arrived

Under den Besten’s description the analysis is relatively straightforward: The structure of the Finland-Swedish så-construction is the same as that of ordinary CLD, as given in (92), except that the XP-position is filled by så, not by a regular proform. This is possible if så in Finland-Swedish does not block a local binding relation between the preposed phrase and a trace in S. Så would be a weaker sort of element in Finland-Swedish, capable of filling a position but with no other effects on the structure. The analysis of (100a) would be (102), and the analysis of (100b) would be (103).13

(102) (E_Maria: (S"så (S'förstår (S e_i (I, inte v ...))))
(103) (E_Nyheterna: (S"så (S,vill (S,jag (I, gärna v lyssna

4. V-movement: a description
If there had been an asymmetry between subject-first and object-first constructions such that only the latter would have permitted så, this would have provided an argument in favour of Travis's description. But there is no such asymmetry, and moreover, it is hard to see how the subject-first så-construction can be analyzed according to Travis's description. The object-first så-construction would, presumably, be analyzed as in (103), but consider the subject-first construction (100a): the question is where the initial phrase Maria and the item så go. Consider first the analysis (104):

(104) \((\text{E } \text{Maria}) (S \text{så } (S, \sigma (S \text{ e } (I, \text{förstår } (\text{vp inte } v \ldots )))))))\)

Since the XP-position is filled, by så, V-to-C should apply -- so this cannot be the correct analysis. Consider next the analysis (105), så adjoined to S:

(105) \((\text{E } \text{Maria}) (S, \sigma (S \text{ så } (S \text{ e } (I, \text{förstår } (\text{vp inte } v \ldots )))))\)

But then, why does så only appear in main clauses, in connection with subject fronting? Why are e.g. (106a,b,c), where så would be adjoined to S, not well formed?

(106)a. ...att (*så) Maria inte förstår vad jag menar.
   b. Förstår (*så) Anna vad du menar?
   c. Vilken film ville (*så) du se?
      what film wanted so you see

Finally, consider the possibility that så in the subject-first så-construction is adjoined to I:

(107) \((S \text{ Maria } (I, \text{så } (I, \text{förstår } (\text{vp inte } v \text{ vad...}))))\)

But then why is så impossible in embedded clauses, as in (101)? The complementizer blocks (or makes unnecessary) V-to-I, according to Travis's description, but there is no obvious reason why it should also block adjunction of så to I.

The most sensible analysis under Travis's description would seem to be (104) but with the verb moved to C -- and this, of course, is = the analysis under den Besten's description, given in (102). To conclude, in the Finland-Swedish så-construction there is no asymmetry between subject-first main clauses and other declarative or wh-interrogative main
4. V-movement: a description

clauses, such as expected under Travis's description. In the absence of
evidence to the contrary we may assume that there is no such asymmetry
in other declarative and wh-interrogative constructions either, only it is
harder to verify this assumption in the case of other constructions.

4.4.3.4. V1 constructions

Another sort of evidence for den Besten's description is provided by
certain verb-first structures. The canonical V1 structure in the
Scandinavian languages is the yes/no-interrogative (although in Icelandic
V1 is not uncommon in declaratives, in a certain type of discourse; cf.
below 4.4.4). However there are other V1 constructions, too. We have
already mentioned the V1 conditional. We also have the parenthetical
expressions, underlined in (108):

(108)a. Nej, sa Maria, jag har inte sett den.

no said M. I have not seen it

b. Utmärkt, tänkte jag.

excellent thought I

These are expressions which name the performer and type of a speech act
or mental act; I will call them "performer-parentheticals", or
"p-parentheticals" for short. They are invariably V/1 in the Scandinavian
languages. (109a,b) are totally out:

(109)a. *Nej, Maria sa, ...

b. *Utmärkt, jag tänkte.

Yet another V/1 construction is the imperative. It is V/1 not just when the
subject is not overtly present, but also when the subject is overt, in the
Scandinavian languages (and the other Germanic languages except
English):

(110)a. Vila du, så jobbar jag.

rest you then work I

"You rest, and I'll work."

b. Var du tyst!

be you quiet

How should we analyze these constructions? It is typical of both the
p-parenthetical and the imperative that no constituent may precede the
verb, neither objects, adverbials, or the subject. Consider first the
p-parenthetical:
(111)a. Hon är gravid, berättade hon mej igår.
    she is pregnant told she me yesterday
    b. *..., hon berättade mej igår.
    c. *..., mej berättade hon igår.
    d. *..., igår berättade hon mej.

And consider the imperative:

(112)a. Ta du med din gitarr i morgon.
    bring you along your guitar tomorrow
    b. *Du ta med din gitarr i morgon.
    c. *Din gitarr ta (du) med i morgon.
    d. *I morgon ta (du) med din gitarr.

Assume that both the p-parenthetical and the imperative is a bare S', lacking a complementizer and hence having the finite verb in C (taking the imperative verb to be "finite"):

(113)a. (S',berättade; (S hon (I,v_i )))
    b. (S',ta; (S du (I, v_i )))

They are bare S's in that, for some reason, they cannot take a specifier of any kind, i.e. the XP-position must be left unfilled. Let us for convenience say they are subject to a "no-XP-condition", disregarding here the source of this condition.

Now assuming den Besten's description all the ill formed cases of p-parentheticals and imperatives listed above will be excluded for the same reason, as violations of the no-XP-condition. (111b,c,d) would have the structural descriptions (114a,b,c), respectively, and (112b,c,d) the descriptions (115a,b,c), respectively:

(114)a. (S"hon; (S berättade (S e_i v_i )))
    b. (S"mej; (S berättade (S hon v e_i )))
    c. (S"igår; (S berättade (S hon v mej e_i )))

(115)a. (S"du; (S ta (S e_i v_i )))
    b. (S"din gitarr; (S ta (S du v med e_i )))
    c. (S"i morgon; (S ta (S du v med din gitarr e_i )))

Compare this with a account in terms of Travis's description: The structural descriptions (114b,c) and (115b,c) would be preserved in that
form, and be ruled out by the no-XP-condition, but the subject-first structures would, presumably, have the forms (116) and (117), respectively:

(116) \( S \) hon (I'berättade (VP v mej igår ))
(117) \( S \) du (I'ta (VP v med din gitarr i morgon ))

Why, then, is a bare S not a good p-parenthetical or a good imperative? There is no prohibition against having the subject position filled in these constructions: it is filled in the well formed structures (111a) and (113a). Rather some condition must be formulated, within Travis's description, which forces V-to-C in p-parentheticals and imperatives, while not forcing it in declaratives. It is far from obvious why there should be such a condition.\(^{14}\)

It is instructive to compare English and e.g. Swedish with respect to p-parentheticals and imperatives. In English these constructions are not V1, but subject-first:

(118)a. No, he said/ *said he, I haven't seen it.
   b. You go to sleep now./ *Go you to sleep now.

With other than pronominal subjects the inverted word order is usually also possible in English p-parentheticals: No, said John. The subject-first word order is quite clearly the unmarked order, however (the inverted order is mainly found in written language).\(^{15}\) No other constituent than the subject may, however, introduce these constructions:

(119)a. *No, yesterday he said/ yesterday said John.
   b. *At once (you) go to sleep.

This is just what we expect given that (as will be discussed in detail in section 5) the subject in English subject-first main clauses is in subject position, not, as in e.g. Swedish, in XP-position, outside S. The structure of an English subject first main clause is roughly (120).

(120) \( S \) NP (I'(I/AUX) VP )

The English structures (118a,b) hence do not violate the no-XP-condition. This conclusion is possible only if English differs from Swedish (and the other V2 languages) with regard to the structure of subject-first main clauses, as in den Besten's description.
4.4.4. A note on Icelandic

What we have called den Besten's description is a little more difficult to motivate in the case of Icelandic, where, as mentioned, most of the time we do not even find the sort of main clause–embedded clause word order asymmetry found in the mainland Scandinavian languages, but instead embedded clauses as well as main clauses usually have V2 word order. Thus the Icelandic (121b) contrasts with the Swedish (122b) where the finite verb is in "third position":

(121)a. Jón keypti ekki bókina.
   \_J. bought not the book
   b. ...að Jón keypti ekki bókina.
(122)a. Johan köpte inte boken.
   b. ...att Johan inte köpte boken.

It has, indeed, been proposed that the Icelandic subject-first main clause and the embedded clause differ only with regard to the presence of a complementizer; cf. e.g. Rögnvaldsson(1984) and Thráinsson(1984,1986b). Sigurðsson(1985,1986b) argues against these proposals, proposing instead that the Icelandic main clause involves V-to-C and XP-fronting, just like the other Scandinavian languages. This is also the position taken in Platzack(1986). I will assume, following Platzack and Sigurðsson that main clauses and embedded clauses are always structurally distinct, the former being derived by V-to-C and XP-fronting, which do not apply in the embedded clause. The parameter which accounts for the difference between (121b) and (122b) (among other things) is the position of S-adv: to the right of Infl, i.e. adjoined to Infl in Icelandic, but to the left of Infl, adjoined to I' in mainland Scandinavian, as discussed in section 4.2. Hence (121a,b) have the structures (123a,b), respectively:

(123)a. (S"Joní(S,\_keyptí(S,\_eí(I,\_ví(I,ekki (VP, ví bókina))))))
   b. (S,að (S,Joní(I,\_keyptí((VP,ekki (VP, ví bókina)))))

In support of this description we may note that Icelandic patterns like mainland Scandinavian (and the other V2 languages) with respect to p-parentheticals and imperatives, discussed in the previous subsection:

   \_what is this asked she
   b. Komdu nú með mer./ *þú kom nú með mer.
      \_come-you now with me

(The subject of the imperative, when overt, may be cliticized to the verb in Icelandic.) See also Sigurðsson(1985) on the Icelandic declarative V1
construction often called "Narrative Inversion", exemplified in (125). Sigurðsson argues that it is the result of nonapplication of XP-fronting, so that (126) differs from (125) in that XP-fronting of the subject has applied in the latter construction, in accordance with what we have called den Besten’s description.

(125) Hitti hann þá einhverja útlendinga.
     met he then some foreigners
     "Then he met some foreigners."
(126) Hann hitti þá einhverja útlendinga.

Recently Travis(1986) has suggested, in accordance with what we have called Travis’s description, that the parameter distinguishing between Icelandic and the other Germanic V2 languages (excluding Yiddish), accounting for the (near-) obligatory V2 word order in Icelandic embedded clauses, is that Icelandic complementizers are not capable of properly governing Infl, and hence, unlike complementizers in e.g. German and Swedish, do not license an empty Infl. Therefore V-to-I must apply, filling Infl, resulting in the word order in (121b) (while, as discussed in section 4.4.3. the word order in the Swedish (122b) would be the result of nonapplication of V-to-I). The word order variation exemplified in (121,122) would thus ultimately be traced to the lexicon, to a variation in the lexical properties of complementizers in the two languages. If so, we might expect to find corresponding variation also within the languages depending on choice of complementizer -- or, at any rate, if there would be variation in sentential word order within the languages under study depending on choice of complementizer, this would count as an argument for Travis’s hypothesis. However there is no such variation: all Icelandic embedded clauses have the word order shown in (121b) (except for some variation depending on choice of S-adverb; some S-adverbs allow also the "Swedish" word order NP - S-adv - Infl; cf. e.g. Thráinsson(1986)). (Moreover, as discussed in Sigurðsson(1986), main clauses headed by "main clause complementizers" corresponding to the Swedish items månne, kanske, and bara, discussed in section 4.3., also exhibit the word order in (121b), that is to say, they too would all be "weak governors" in Icelandic, but proper governors in Swedish, according to Travis(1986)).

It has, in fact, been suggested elsewhere (Engdahl(1985)) that complementizers do differ with respect to how they govern: complementizers which permit an empty subject would be strong governors, governing the subject position properly, hence licensing an empty subject position, while complementizers which do not permit an empty subject are weak governors. But, in contrast with Travis’s hypothesis, according to this diagnostic e.g. the Icelandic complementizer að is a strong governor, while the corresponding standard Swedish complementizer att is a weak governor. Icelandic does, but standard Swedish does not permit the that-trace configuration: (127a) is
4. V-movement: a description

Icelandic, (b) is Swedish.

(127)a. Hveri sagðir þú að eði hafði komið?
     who said you that had come
     "Who did you say has arrived?"

b. *Vemsi sa du att eði hade kommit?

Engdahl's hypothesis is supported by the fact that regarding *that*–trace there is variation also within languages depending on choice of complementizers. E.g. in Finland-Swedish the complementizer *att* permits an empty subject (that is to say, (127b) is well formed in this dialect), while the complementizer *om* "if, whether" does not (at least not in all varieties of Finland-Swedish). Hence, while (127b) is well formed in this dialect, (128) is not:

(128) *Vemsi undrade du om eði hade kommit?
     who wondered you if had come

Such variation is only to be expected given that the construction is dependent on lexical, (partly) idiosyncratic properties of the items involved.

4.4.5. On an argument against den Besten's description

Travis(1984:121) adduces the following as evidence against what we have called den Besten's description: In German a subject pronoun may appear unstressed in sentence-initial position, but an object pronoun has to be stressed, in this position.

(129)a. Er hat das Brot gegessen.
     he has the bread eaten

b. *Es hat er gegessen. (es unstressed)
     it has he eaten

That is to say, the subject-first construction is not congruent with the non-subject-first construction in this case. The argument does not, in fact, carry over to Scandinavian. The Swedish sentence (130a), corresponding to (129b), seems well formed to me, as do (130b,c) where the initial pronoun is unstressed.

(130)a. Det har Johan ätit.
     it has J. eaten

b. Henne känner jag faktiskt inte.
     her know I actually not
c. Den tar jag hand om.
     it take I care of
A fronted object pronoun need not be focused, as long as it is the theme of the discourse. (130a) would be appropriate e.g. as an answer to the question "Where's the bread gone?". Judging from (129), it is not enough in German that a fronted object pronoun be the theme of discourse, it must actually be focus, while a sentence-initial subject pronoun need not be focus. I will not here consider whether the difference between (129b) and (130a), if it is real, reflects a deeper, parametric difference between the two languages, but instead consider the problem which these examples bring to light, though perhaps more perspicuously so in the case of German: There are other, stricter conditions on a sentence-initial object than on a sentence-initial subject. The former is either focus or (at least in Scandinavian) the theme of discourse, the latter need be neither. A sentence-initial subject can even be an expletive, non-argument element, intrinsically incapable of serving as either focus or theme of discourse, as in the Swedish (131):

(131)a. Det verkar regna mycket i Bergen.
       _it seems (to) rain a lot in Bergen_
       b. Det dansades aldrig på bryggen.
       _there was-danced never on the jetty_

By all the criteria discussed earlier the structure of these sentences is the same as that of sentences with referential initial subjects: the expletive is fronted to XP-position. This is shown for instance by the word order in (131b): the finite verb precedes S-adv, hence it must be in C, in which case the subject is in the XP-position. Now a non-argument object cannot occur in XP-position. This cannot be exemplified by expletive objects, since there are no expletive objects, but it can be exemplified by idiom-chunks: _kasta yxan i sjön_, literally "throw the axe in the sea" is a Swedish idiom which means "give up". _Ta ner skylten_, literally "take down the sign" is one of the many idioms which mean "to die":

(132)a. Johan kastade yxan i sjön.
       _J. threw the axe in the sea_
       b. *Yxan kastade han i sjön.

(133)a. Han har tagit ner skylten.
       _he has taken down the sign_
       b. *Skylten har han tagit ner.

In other words, non-argument NPs cannot be topicalized. Consider also the construction (134), noted by Taraldsen(1986b), where an embedded expletive subject has been topicalized to the front of a higher clause.

(134) *Det: påstod han ( e: aldrig dansades på bryggen).
The construction, which should be compared with (131b), is completely ungrammatical. But this implies that the expletive subject in (131a,b) is not "topicalized". If we are not to abandon den Besten's description (in favour e.g. of Travis's description) we must be able to distinguish in a principled way between XP-fronting which is, and XP-fronting which is not "topicalization", and account for why (131a,b) are well formed while (132b, 133b, 134) are ill formed. How this can be done is shown by Taraldsen(1986b).

The reason why expletive, and generally non-argument NPs cannot be topicalized, according to Taraldsen(1986b), is that they cannot be operators, and hence cannot bind a variable. A "topic", Taraldsen proposes, is an operator of the form (135):

(135) For \( x, x = \text{NP}_1 \)

It is, you could say, a maximally restricted operator, the range of the variable it binds being restricted (potentially) to a single individual, that picked out by the topicalized NP. The relation between the fronted, topicalized phrase in (136) and its trace in \( S \) is then an operator-variable relation.

(136) Johni ( I have not seen \( e_i \) )

But this requires that the topicalized NP is capable of picking out some individual. NPs like John, she, the book, etc. meet this requirement, but expletives and idiom-chunks do not. They are intrinsically non-referential, hence cannot be operators of the form (135). This means that the relation between an expletive or an idiom-chunk fronted to the XP-position and the trace it binds cannot be an operator-variable relation:

(137)a. Deti \( \left( S', \text{dansades} \left( S, e_i \text{ aldrig v på bryggen} \right) \right) \)

b. Skylteni \( \left( S', \text{töd} \left( S, \text{han v ned } e_i \right) \right) \)

Consider the definitions (138a,b) = (nn) in section 2.6.:

(138)a. A locally non-operator bound trace is an anaphor.

b. A locally operator-bound trace is a variable.

Since the initial phrases in (137a,b) are not operators, the trace locally bound by them must be anaphors. Now being anaphors they must be bound in their governing category (GC), by Principle A of the binding theory (see section 2.6.). The GC of the object of a verb is the minimal \( S \) dominating it: this is the minimal category containing the object, a governor of the object and a subject. But then the trace in (137b) violates the binding principles, not being bound in
4. V-movement: a description

S. Hence cases of idiom-chunk NPs in XP-position, such as (132b) and (133b) are ruled out as violations of the binding principles. (Of course, if the initial phrases are interpreted referentially the sentences are well formed, the trace in S then being a variable, but then the idiom-interpretation is impossible.)

What, then, is the GC of the subject in (137a)? Assume the subject is governed by the content of C, in this case the verb and the tense/agreement inflection. Government of the subject from C is compatible with our definition of government (see section 2.5.) and is well attested in certain cases (e.g. the English for-infinitival); cf. also Engdahl(1985). Now if an NP in XP-position qualifies as a "subject" in the sense of the definition of GC, a not at all implausible assumption, in view of the structural similarity of the XP S’ relation to the NP I’ relation, and other considerations to be discussed in more detail in section 5, the GC of the subject will be S”. Thus, in (137a) the trace a, an anaphor by our definitions, is bound in its GC, as required. Hence the contrast between (137a,b), the former well formed the latter not (on the idiom interpretation), and generally the possibility of fronting a non-argument NP to the XP-position from the subject, as opposed to a non-subject position, is accounted for.

This has consequences for Case-marking of the subject: The expletive and the trace in the subject position in (137a) form a chain (in the sense "A-chain"); cf. section 2.4. This means that the expletive, being the head of the chain, is Case-marked, while the subject trace is not Case-marked; cf. principle (93) in section 2.4. If the subject trace were Case-marked it would be the head of a chain, hence (being empty) would have to be operator-bound, which it is not. Hence in this construction we must assume that nominative Case is assigned by Infl directly to the XP-position. This requires no additional assumptions, since the structural relation between Infl in C and the XP-position is the same as that between Infl in the base-position and the subject position. Coinciding will take place equally well in both cases. We need to ensure, of course, that Infl in C does not assign nominative to, for instance, a topicalized object in the XP-position. We do this by stipulating that only NPs which are not Case-marked any other way can be coindexed with Infl; cf. fn. 4, section 2.

We also have to account for the possibility of a truly topicalized subject, e.g. as in the construction (139a), with the rough description (b):

(139)a. JOHAN har inte varit där.

J. has not been there

b. (s"Johan (s har (s e: inte varit där )))

Here the fronted subject is referential, and even focused. There is then good reason to analyze the relation between it and the trace it binds as an operator-variable relation. But then the trace in (139b) must be Case-marked, being a variable, that is the head of a chain. This means that there must be a
choice as to the direction in which nominative is assigned by Infl in C: either to the XP-position or to the subject position. Alternatively there is a choice as to whether Infl in C assigns nominative to the XP-position, or whether the trace of V+Infl assigns it, to the subject position. I return to this issue in section 6.

What about (129), repeated here:

(129)a. Er hat das Brot gegessen.
    b. *Es hat er gegessen. (es unstressed)

The following is a possibility: For whatever reason an unstressed fronted pronoun cannot be analyzed as an operator in (this variety of) German. This leads to a violation of Principle A of the binding theory in (129b), but not in (129a): in (129a) the trace bound by the fronted pronoun, being the subject, is bound in its GC, while in (129b) the trace, being an object, is not bound in its GC.

Footnotes to section 4

1. The description is in a way similar to the traditional description of sentence structure in terms of "positional fields", which has a long tradition within German and Scandinavian grammar. On the relation between the "field theory" and current transformational description, see Torris(1984), Platzack(to appear), Heltoft(1986).

2. It is an interesting question whether there is actually a "position" there, defined by a phrase structure rule. According to standard GB theory there are no phrase structure rules, and hence no "positions" in the sense of slots in a preexisting sentence pattern. Instead the linear order of categories is determined by certain general principles and parameters having to do with subcategorization, θ-role- and Case-assignment, and the dominance relations are determined mainly by feature-percolation conventions. If the only categories found in the "S-adv position" were sentence adverbs we could account for their distribution by subcategorization: sentence adverbs would be subcategorized ( _VP) in Icelandic (while in e.g. Swedish, where sentence adverbs always occur to the left of Infl, they would be subcategorized ( _I'). We would then not need to postulate a phrase structure rule generating a structure with a slot for sentence adverbs. However we also find floated quantifiers in the same position. Worse still, in Icelandic we also find indefinite (and quantified) subjects in precisely this position (as discussed in Holmberg(1985b):

(i) Hefur raunverulega einhver leisið þessa bók?
    has actually someone read this book

We can tell that the subject einhver is not in the ordinary subject position, but postposed to a position adjoined to the predicate, since
Icelandic does not allow sentence adverbs to intervene between a fronted verb and the subject position:

(ii) *Hefur raunverulega Jón lesið þessa bök?

The position of einhver in (i) cannot be accounted for by subcategorization. Unless we can propose some principled reason why the indefinite subjects move just to this position it seems most correct to assume that there is indeed a "slot", defined somehow as a possible landing site for indefinite subjects — which is to say that at least some phrase structure rules are needed, after all. However, given partly different theoretical assumptions than made in this work, we could hypothesize that the reason why indefinite/quantified subjects move down into VP is in order to get in a position where they are governed by the verb. This would be required given that they undergo Quantifier Movement, leaving a trace which must be properly governed. That is to say, the movement would be required to avoid an ECP violation caused by Quantifier Movement from the subject position.

3. One reason for choosing V-to-I plus verb trace deletion over I-to-V plus Infl trace deletion is that (23) does not conform to the HMC. However this may be innocuous, given the option of deleting traces. Suppose stars are assigned to structures only at given levels, one of them being s-structure. If trace deletion applies before s-structure, then even though (23) violates the HMC, the structure derived from (23) by trace deletion will be OK.

4. A **mánne**-question would tend to be used rather than a Vl question when a direct answer from the interlocutor, if there is one, is not expected, or else as a polite question; largely the same contexts where the indirect question "I wonder whether he can speak thirteen languages" would be used.

5. In fact, in wh-questions **mánne** can appear in front of a fronted verb. However this seems to require a comma break before, and especially after **mánne**, indicating that **mánne** is a parenthetical:

(i) Vilka språk, mánne, kan Christer tala flytande?

6. In fact the adverbials plus the verb particle may constitute a constituent, given the description of German in (25) and (26). The intermediate structure might be as in (i), where the verb has moved to Infl, leaving a trace behind as a sister to **auf**:

(i) ( S NP ( _I'_ , (VP immer früh (auf v )) steht ))

Now the VP containing immer früh **auf** v may be moved rightwards, giving the V2 main clause word order.

(ii) ( S NP ( _I'_ , (VP (e ) steht ) (VP immer früh **auf** v )))

However, the only possible landing site for the rightwards-moved VP is adjacency to _I'_ , as in (ii). This means that the verb trace v becomes illicit, lacking a c-commanding antecedent. Hence also the relation between stehen and **auf** cannot be recovered from the structure (ii).

7. Or Infl being base-generated in VP, as in Travis(1984: 139ff.).
8. German and Dutch do not, however, permit any "embedded root phenomena", neither subject-first V2 word order or topicalization of any kind. In Travis (1984) German and Dutch have the same basic word order as the Scandinavian languages, namely NP - InfI - VP, and subject-first V2 word order is the result of V-to-I. Hence in German and Dutch there must be something that actually requires InfI to remain empty when governed by a complementizer. Travis suggests a "last resort principle", according to which the verb moves only when it has to, hence not in clauses where an empty element in InfI is licensed — surely not a very satisfactory solution.

9. (84c) is possibly slightly worse than (84b), but this is probably because the readjustment the listener needs to make to make sense of (84b) is comparatively small, just an inversion of the finite verb and the negation ("readjustment" in the sense of a perceptual process used to make sense of ungrammatical utterances). (84d) seems on a par with (84b), which supports the hypothesis that the difference between (84b,c) (if there is one) is not an effect of the number of nodes between the landing site and the launching site of the extracted category: the number of intervening nodes should be the same in (84c,d) under any analysis.

10. Rögnvaldsson (1984) claims that it is possible to find reasonably good examples of extraction out of clauses with a topicalized constituent. However neither of the two examples he gives is a clear case of topicalization:

   (i) I ges, veit og (að bar) hefur verið slægist e; e;
      yesterday know I that there has been fought

   (ii) þessari bækur; helt og (að ber) myndi ekki nokkur maður
      these books thought I that you will not any man
      lana e; e;
      lend

   (i) is clearly a null-subject construction. Hence the locative proform
   bar is presumably preposed not by topicalization but by so-called
   Stylistic Fronting, a rule which applies in embedded clauses with an
   empty subject, fronting an adverb, participle, or other category to what
   looks like the subject position; cf. Maling (1980), Platzack (1985b). (ii)
   may also be a null-subject structure, where the quantified subject has
   been postposed by "indefinite subject postposing" (cf. Sigurðsson (1985)).
   In that case the preposing of the object may, again, be a Stylistic
   Fronting-like rule, not topicalization. This is supported by the fact
   that there is a clear drop in acceptability (of an already marginal
   construction) if the indefinite nokkur maður is substituted by a
   definite NP:

   (iii) ??þessari bækur helt og (að þer myndi ekki Jón lana).

11. (94b) is well formed as an interrogative with a left-dislocated
    subject, but the question is why it is not a well formed declarative.

12. sá will be glossed "so". Another possibility would be "then", by
    analogy with "then" in the "if...then" construction, in Swedish
    "om...så".
13. We predict that *sa* will be able to co-occur with adverbal wh-phrases in Finland-Swedish. This is a correct prediction: (99a,b,c) appear to be acceptable in the varieties of Finland-Swedish which permit (100a,b,c).

14. In Holmberg (1983a) it is proposed that what we have called the "no-XP-condition" in the case of p-parentheticals is a condition to the effect that the p-parenthetical should be as "small" as possible, while still capable of functioning as an independent expression. The smallest possible independent expression in e.g. Swedish would be a bare S'. In the framework of Holmberg (1983a) S in Swedish is a headless category, and as such incapable of functioning as an independent expression. Under Travis's description a bare S is, of course, a possible independent expression, so the explanation in terms of "size" does not work in that framework. Another possible explanation is that the p-parenthetical takes the whole expression it is embedded in as its topic, so that, on some level of representation, the structure of e.g. (108a) is:

(i) *(s_p(Nej, jag har inte sett den): (s_s,sa (s_hon v e_t )))*

The p-parenthetical would then be VI (in Swedish) because topicalization requires S' to be VI (in Swedish). This explanation is equally compatible with Travis's as den Besten's description. The description (i) was rejected in Holmberg (1983a) chiefly because, although it can account for the Swedish (and generally Scandinavian) facts, and at least in part for the English facts (cf. below), it fails to account for the standard French p-parenthetical forms:

(ii)a. Oui, *a-t-il dit*, vous avez raison.


In (a) the p-parenthetical has undergone "subject-clitic inversion", and in (b) so called "stylistic inversion" (a postposition of the subject). Neither rule applies in connection with topicalization or adverbal preposing in French. The theory in Holmberg (1983a) does, however, account for the French, as well as the Swedish and English facts.

15. If the subject is heavy the inverted order tends to be preferred: No, said the guy who had spoken first. This strongly suggests that the inversion is a result of subject movement rightwards. Such movement is generally impossible with "light" NPs, such as typically pronouns. Hence the ill-formedness of *said he/she/I, etc.*

16. The position of S-adv may not be the parameter of UG, but rather an effect of a particular choice of value for some parameter. An hypothesis which might be pursued is that Icelandic and Swedish differ with respect to the status of VP and I': VP would be a maximal category in Icelandic but not in Swedish, and I' would be a maximal category in Swedish but not in Icelandic. This hypothesis requires making a different set of assumptions than we have made here, regarding, among other things feature percolation, and I will therefore not pursue it. It could, however, explain the position of S-adv in the following manner: Assume adjunction is only possible to maximal categories (cf. Chomsky (1986a)). Then S-adv and other predicate adjuncts (floated quantifiers, postposed indefinite subjects (Icelandic), objects shifted leftwards (cf. section 6), etc.,
adjoin to VP in Icelandic but to I' in Swedish, resulting in the typical (embedded clause) word order NP - S-adv - V in Swedish, but NP - V - S-adv in Icelandic. Other things, too, would fall out, such as the possibility of topicalizing I' in Swedish, as in

(i) Spelar saxofon gör han bara när han är ensam.

*plays saxophone does he only when he is alone*

Note that the topicalized constituent is finite. Cf. Platzack(1984b). This is impossible in Icelandic — but on the other hand topicalizing VP (without inflection) is nearly as bad as topicalizing I' in Icelandic (on this point Platzack(1984b) seems to be mistaken).

17. The fact that *att* in Swedish permits V2 word order, while no other complementizer does, may be regarded as evidence of language-internal variation of the sort compatible with Travis’s(1986) hypothesis. This depends on whether it can be established that the *att* introducing EMCs is truly a different lexical item than the *att* introducing ordinary embedded clauses. If not, the possibility of V2 word order in embedded clauses is not directly conditioned by the choice of complementizer, but rather by choice of matrix predicate and/or various other contextual factors.
5. Verb movement: an explanation

5.1. Introduction

In the previous section I argued for a particular description of the V2 phenomenon, according to which the finite verb in all main clauses, and some embedded clauses, moves to C, via Infl, while another constituent optionally moves to the XP position. Some of the properties of verb movement to Infl and C have already been explained in terms of independently motivated principles. In particular the local character of the rule was explained, following Travis(1984), in terms of the HMC. One question we have not yet touched upon is: why are these verb movement rules obligatory, in the sense that nonapplication of verb movement in structures where it can apply always leads to ungrammaticality? This is, indeed, the central question: What is the raison d'être of the two verb movement operations. I assumed earlier that V-to-I has the effect of merging Infl and V, thus creating a finite verb. Conceivably the need to merge V and Infl is indeed the raison d'être of V-to-I. The other rule, V-to-C, appears to be more mysterious: why do certain languages require movement of a (finite) verb to C? Various answers to this question have been proposed in recent years. I shall begin by briefly reviewing some current proposals. It will be seen that, although they can explain the obligatory nature of V-to-C in clauses lacking a complementizer, they all fail to account for why typically main clauses lack a complementizer, hence triggering V-to-C, so that main clauses are typically V1 or V2, and embedded clauses "V-post-second", rather than, say, vice versa. I shall then outline a theory which will explain the obligatory nature of V-to-C and explain why V-to-C is typical of main clauses rather than (some subcategory of) embedded clauses.

It will be shown next that the need to merge Infl and V is not, in fact, a sufficient explanation of V-to-I. Instead the explanation proposed for V-to-C will serve to explain the obligatory nature of V-to-I, as well. We shall then turn to the question of the "V2 parameter": why is V-to-C a property of some languages only? What is the parameter which distinguishes between V2 languages and non-V2 languages? A comparison with English will be crucial in this section. It will be proposed that the parameter is the "default specification" of C, where the V2 languages select a marked option of a default specification of C as (¬V). It will be shown that this theory can account for certain aspects of the historical development of English from a typical V2 language to a non-V2 language. Finally it will be shown that the theory can account for a number of facts concerning infinitival clauses in the Scandinavian languages and English.
5. V-movement: an explanation

5.2. Why is V-to-C obligatory: three explanations

One recent proposal (Travis(1984:135), Scherpenisse(1984)) is to explain the obligatory nature of V-to-C in terms of the ECP. Assume all clauses have the general form (C S), i.e. all clauses have a C-node. In embedded clauses C is filled by a complementizer. In main clauses there is no complementizer. However, if C is left empty in a main clause the ECP will be violated, C being ungoverned in a main clause. Verb movement to C saves main clauses from being ruled out by the ECP.

We shall adopt the idea that all clauses (excluding small clauses) universally have a C-node. The explanation in terms of the ECP is thus open to us. But the explanation is incomplete: Why do main clauses not have a complementizer, just like embedded clauses? Moreover it is unclear why not all languages have V-to-C, that is what it is that distinguishes V2 languages from other languages. It might be the property of having C in main clauses. If a language has no C in main clauses no V-to-C will even be possible. However the property of having a C heading all clauses seems a good candidate for an absolute universal. Assuming it to be a parameter seems unsatisfactory: If there is a choice, why generate a category whose only effect is to cause an ECP-violation, unless some additional mechanisms are activated to avoid it?

Another line of explanation, advocated e.g. in Haider(1986), is that V2 languages have Infl in C. In main clauses the verb moves to C to merge with Infl. In embedded clauses the presence of a complementizer blocks verb movement to C. Instead Infl has to move from C to the verb. In this theory the "V2 parameter" is clear: it is the property of having/ not having Infl base-generated in C. If Infl is not generated in C there will be no verb movement to C. But again the explanation is incomplete in that it does not explain why embedded clauses typically have complementizers and main clauses typically V-to-C, rather than, say, vice versa.

Yet another line of explanation, advocated in Koopman(1984) and Platzack(1986a), is that verb movement is obligatory in order to provide a Case-assigner for the subject. The general idea is that nominative Case is assigned by Tense to an NP governed by, and adjacent to it, but only provided Tense is supported by adequate categorial features. In the V2 languages Tense is in C (in Koopman(1984) Infl, incorporating Tense, is = C in these languages, while in Platzack(1986a) a Tense feature separate from Infl resides in C). In embedded clauses the complementizer provides the categorial features necessary to assign nominative Case, but in main clauses the verb must be moved to C to provide the necessary categorial features. In Koopman's theory the V2 parameter is the position of Infl, to the left or to the right of the subject, which is related to the direction of Case-assignment: if Case-assignment is uniformly rightwards, as she claims is the case in for instance the Germanic V2 languages, then Infl/Tense must be placed to the left of the subject NP to assign Case to it. In Platzack's(1986a) theory the V2
parameter is the position of the head of $S$: in V2 languages $C$, assumed to be a daughter of $S$ and a left sister of the subject NP, is the head of $S$. In English (the representative of the non-V2 languages in Platzack's work) Infl, a right sister of the subject NP, is the head of $S$. The head of $S$ assigns nominative Case, hence in the V2 languages verb movement is to $C$, giving the typical V2 or V1 word order.

The Koopman-Platzack theory has the advantage of explaining also why $C$ and the subject are usually adjacent in the V2 languages: if the subject gets Case from $C$, filled by a complementizer or a verb, and Case-assignment is subject to an adjacency condition, as commonly assumed (following Stowell(1981)), $C$ and the subject should be adjacent. On the other hand a potential counterargument against the theory is that there are quite a few exceptions to the generalization that $C$ and the subject are always adjacent, in e.g. Dutch, as shown in (1a,b), and in Swedish:

(1)a. dat $gisteren$ mijn oom ziek was.
   \[that \text{ yesterday my uncle ill was}\]

b. Was $gisteren$ je oom ziek?
   \[was \text{ yesterday your uncle ill}\]

(2)a. om $inte$ Sara vill komma med.
   \[if \text{ not S. wants (to) come along}\]

b. Vill $inte$ Sara komma med?

In Dutch a time adverbial like $gisteren$ may intervene between $C$, whether filled by a complementizer or a verb, and the subject, while in Swedish a sentence adverbial like the negation $inte$ very naturally occurs between $C$ and the subject. Koopman(1984:212) suggests stipulating that the adjacency condition does not "see" certain adverbials. Platzack(1986b) argues that expressions intervening between $C$ and the subject in Swedish are criticized to $C$. This is quite plausible in the case of typical "light", weakly stressed $S$-adv, such as the negation in (2). However, as seen in (3) the intervening expression can be both syntactically complex and heavily stressed, which is untypical of criticized items.

(3) Nu har SÅKERLIGEN, eller åtminstone troligen, Johan återvånt.
   \[now has surely or at least probably J. returned\]

However, more importantly, the explanation in terms of the Case Filter suffers from the same incompleteness as the other two explanations discussed above: It does not explain why main clauses do not have a regular complementizer to Case-mark the subject, just like embedded clauses. Of course, some main clause types do have a base generated lexical category in $C$, e.g. månne, kanske, and bara in Swedish, in which case there is no V-to-$C$, as predicted by Platzack's theory. And there are a few nonembedded clause types,
typically exclamations, which have a complementizer, in Swedish e.g. (4):

(4) Att du inte kan vara tyst
    that you not can be quiet
    "Why can't you ever be quiet."

As predicted, there is no V-to-C in this case. But why do the rest of the main clauses in Swedish not have for instance att in C?

None of the theories discussed above account for the basic asymmetry between main and embedded clauses as regards the content of C: in main clauses C is filled by V, in embedded clauses by a complementizer. In the following sections I shall outline a theory which explains this asymmetry, and from which the obligatory nature of verb movement follows, provided certain parameters are fixed.

5.3. The Predicate Principle

5.3.1. Kayne's principles

Kayne(1982) was (as far as I am aware) the first one to suggest that the function of the complementizer is to provide the clause with a nominal, or non-verbal head, required because the embedded clause is an argument, and to suggest the implications this has for the V2 phenomenon. Kayne started out from the observation that there is a connection between argument and noun, predicate and verb: the canonical argument is a nominal category, while the canonical predicate is a verbal category. He proposed a two-part principle to the effect that no projection of (+N) can be a predicate, and no projection of (+V) can be an argument — where the feature theory assumed was Chomsky's (cf. above section 3.1.4 for a discussion of the interpretation of the features in Kayne's principles). In terms of our preferred feature system Kayne's principles would be formulated as in (5). I will call them "the Predicate Principle" and "the Argument Principle", respectively:

    b. The Argument Principle: An argument cannot be (+V).

This will account for why V-to-C is in general restricted to main clauses. If C is the head of S' a verb in C will make S' verbal, which means that the clause cannot be an argument, by (5b). Hence embedded clauses, at least argument clauses, cannot have a verb in C. Instead argument clauses will have a (-V) complementizer (such as that) in C. Now, if main clauses, not being arguments or modifiers, fall together with predicates with respect to the principles in (5), if, in other words, main clauses are "predicates" in an extended sense of this term, then the principles (5) will also exclude the possibility of a main clause
being headed by complementizers such as that, which also head argument clauses, and which, by hypothesis, are (–V). In this way the principles (5) will explain the typical distribution of V-to-C and complementizers: V-to-C in main clauses, complementizer in embedded clauses.¹

A version of this idea was adopted in Holmberg(1983b), a different version is developed in Taraldsen(1986a), and a slightly different version will be developed here. Let us now consider this theory in more detail. To begin with it rests heavily on the assumption that C is the head of S' in the (usual) sense that the features of C percolate to S'/S", so that the categorial status of the clause (S'/S") varies depending on the content of C. The assumption that C is the head of the clause is fairly common (within GB theory) but not uncontroversial. An alternative hypothesis is that Infl is the head of S'/S", C being a specifier of Infl. I will now first consider the categorial status of clauses, and the relation between the content of C and the categorial status of clauses in a bit more detail. Insofar as we can establish that the content of C does correlate with the combinatorial properties of the clause in a manner which can be captured in terms of our theory of syntactic categories, this provides one piece of evidence in favour of the hypothesis that C is, indeed, the head of S'. The discussion of the categorial status of clauses will also serve to give a little more substance to the somewhat unusual idea that main clauses are "predicates" in some sense, an idea which is central in the theory developed here. I will then consider some arguments for the alternative hypothesis that the head of S' is Infl. It should be noted that the issue is put in a rather different light given the percolation conventions assumed here, in particular the convention which permits feature percolation from a non-head category, in certain contexts.

5.3.2. The categorial status of clauses

The syntactic categories fulfill, broadly speaking, four functions: they are either arguments, predicates, or modifiers, where modifiers are either modifiers of arguments or modifiers of predicates. I shall refer to these as "grammatical–logical functions" (g–l functions). Each g–l function is canonically performed by a specific syntactic category: NP for argument, VP for predicate, AP for modifier of argument, PP for modifier of predicate. Where do clauses fit, in this scenario? As discussed in Holmberg(1983b) clauses can perform any of the four functions. There are argument clauses, that is, in this sense, NP-like clauses (the examples are Swedish):

(6)a. Johan minnes att han hade varit där.

Johan remembered that he had been there

b. Johan minnes sin barndom.

Johan remembered his childhood
There are clauses modifying arguments, AP-like clauses:

(7)a. en bok som jag har läst
   a book that I have read
b. en intressant bok
   an interesting book

There are clauses modifying predicates, adverbial clauses/ PP-like clauses:

(8)a. Inget har hänt sedan du var här.
    nothing has happened since you were here
b. Inget har hänt sedan oktober
    since October

And finally, completing the paradigm, there are main clauses, which are predicate-like, and in this sense VP- or I'-like, in a number of ways: First, main clause S' is often the sister of a subject-like constituent, which (given den Besten's description) is, indeed, often the subject, or else is some other category to which S' has a kind of predication relation.

(9) \( S'' \rightarrow \text{Johan (S', gillar jag))} \)
    J. like I (i.e. "Johan I like")
(10) att \( S'' \rightarrow \text{Johan (I', är trevlig))} \)
    that J. is nice

The relation between XP and S', "topic and comment", in (9) is similar to the relation between NP and I', subject and predicate, in (10) both semantically and syntactically: Both are "aboutness relations": the comment is about the topic, and the predicate is about the subject. Furthermore, there can be only one topic to each comment, just as there can be only one subject to each predicate:

(11) *(Johan) (den här boken) (S', ska jag ge)
    J. this book will I give

Main clauses are of course not always predicated of something (in the sense a comment is predicated of its topic) but it is not a defining characteristic of predicates that they are predicated of something: For instance in It (seems we're lost), or There (arrived three men) the bracketed predicates have no argument. (On the other hand they do have a syntactic subject, an expletive element, a requirement which does not hold for main clauses in the same sense -- given the existence of V1 main clauses.)

Formally the different types of clauses listed in (6)-(9) differ only with respect to the content of C (except (9) which differs from the others in having
the XP-position filled): The argument clause (6a) has the complementizer att, the relative clause (7a) the complementizer som, the adverbial clause (8a) has sedan, and the main clause has a fronted verb in C. The verb is obviously (+V). The complementizer att (and its variants in the other Germanic languages), as noted in section 3.2.1, has a "nominal history" (being related to the third person neutre pronoun), and even if it does not retain nominal properties such as taking Case or inducing agreement, it is quite uncontrovertially defined by (-V).

Subordinating conjunctions like since, while, as, because, etc., and their counterparts in e.g. Swedish, sedan, medan, då, eftersom, etc., are often obviously preposition-like. Many of them are homonyms of prepositions, others are derived from PPs (because, in case), some are made up of a preposition plus a complementizer (in that, in order that, Swedish eftersom, för att). It seems highly natural to assume they are defined by (%V), like prepositions (differing from prepositions in being subcategorized for S, not for NP).

The features of the relative clause complementizer are somewhat harder to determine. In many languages it has nominal characteristics such as case, gender, and/or definiteness (e.g. German, Finnish, Arabic). In these languages it is (+N). If it is also (%V), it will be identical with respect to (V,N) to A, which we expect to be the unmarked case, since relative clauses and APs are both modifiers of arguments. The Swedish/Norwegian relative clause complementizer som, on the other hand, shows no signs of nominal morphology. It is in fact a homonym of the preposition/prepositional complementizer som "as", and the two are presumably historically related. This does not exclude the possibility that relative som is now (+N). On the other hand it is not obvious that the relative clause complementizer and relative clauses have to be (+N). In any case there seems to be no reason to assume they are anything but (%V), as expected given that they are modifiers.

The fact that the combinatorial properties of clauses, roughly characterizable as NP-like, PP-like, VP-like, and AP-like correspond to the presence in C of elements which are roughly characterizable as N-like (or Name-like), P-like, V-like, and perhaps even A-like, indicates that the content of C actually determines the categorial status of the clause, i.e. that C is the head of S'/S". I will now consider some other arguments for and some against the hypothesis that C is the head of S'.

5.3.3. C or Infl the head of S'?

The hypothesis that C is the head of S' has consequences in several domains: it is crucial in determining the categorial status of S', as just discussed, but it is also important for the issue whether nominative Case is, or can be assigned by C -- an issue which is important in Stowell(1981), Platzack(1986a), among other works, and will be important in section 6. It is also important for the status of S' as a bounding node for Subjacency (cf. Chomsky(1986a)).
The main competing hypothesis is that Infl is the head of S', as well as being the head of S, in which case C is a specifier. This hypothesis is defended recently in Suner(1984). She advances mainly two arguments in favour of the hypothesis that Infl is the head of S'. The first argument is that verbs select complements on the basis of features of Infl. For instance, certain verbs select the subjunctive, while other verbs select the indicative. (The examples are Spanish, from Suner(1984).)

(12)a. Nosotros sentíamos que viniera(subj)/*venía(indic).

we were sorry that he (would) come/ came

b. Vi a la niña que venía/*viniera cabizbaja.

I-saw the girl that was-coming downhearted

Subjunctive is presumably not a feature of C, but only of Infl, since the complementizer is (at least overtly) the same one whether the clause is subjunctive or indicative, in Spanish. This implies that features of Infl percolate to S'. But in the present framework, assuming the percolation conventions from section 3, in particular PC2 (cf. (31) in section 3), this fact does not entail that Infl is the head of S'. Given PC2, if no other category between Infl and S' is adversely specified for the feature in question (the subjunctive feature in (12a), for instance), this feature will percolate to S', whether Infl is head or not.

Correspondingly some of the "classical" arguments for the hypothesis that C is the head of S' lose their force given PC2. For instance, Stowell(1981:388ff.) argues that C is the head of S' on the basis of evidence that features of C percolate to S'. As well known certain verbs subcategorize for embedded questions, i.e. clausal complements with a (+WH)-marked complementizer (whether in English) or a fronted wh-phrase, while other verbs disallow such complements. This implies that the feature (WH) is projected from C to S', since, by standard assumptions, strict subcategorization is strictly local in the sense that it can only see sister constituents. Grimshaw(1979) has argued that complement selection is not actually sensitive to the syntactic feature (WH), but to the semantic quality of the complement as a "question", or "proposition". However, even disregarding Grimshaw's objections, projection of (+WH) from C to S' does not automatically qualify C as the head of S' given the percolation conventions assumed in the present work: any feature for which S is unspecified may percolate from C to S' even if C is not the head of S'.

The second argument in Suner is the following: If Infl is the head of S', and C hence a specifier of Infl, then the C-Infl matching requirement, that is the well known fact that certain complementizers go together with certain values of Infl -- e.g. that co-occurs only with (+Tense) Infl, for only with (−Tense) Infl -- can be "captured by means of a real rule of agreement"(Sunér(1984)). C will agree with the head of its construction just like other specifiers do.

But is C-Infl matching really a case of agreement, comparable to
subject-predicate agreement, or perhaps more closely, determiner-noun agreement (e.g. gender agreement in French: un homme/une femme)? It seems to me that agreement is typically a morphological inflectional phenomenon, but C-Infl matching does not have any morphological reflex: that is not "tensed" in any morphologically overt manner, and for is not "tenseless". The Arabic complementizer 'an always co-occurs with subjunctive Infl, and the complementizer lam with jussive Infl, but 'an and lam do not show any reflex of subjunctive or jussive morphology, respectively. Examples can easily be multiplied. There is another possible analysis of C-Infl matching, with no implications regarding the morphological form of C: C selects Infl. E.g that, att, Spanish que, etc. are subcategorized (___+Tense), hence their sister must be a tensed S (the feature (+Tense) percolating from Infl). For and French de are subcategorized (___-Tense), the Arabic complementizer 'an is subcategorized (___subjunctive), the complementizer lan (--jussive), etc.

As discussed by Selkirk(1982: 98ff.) the power to select a complement seems generally to go together with the power to project categorial features onto higher nodes — typically in the case of, say, verbs selecting an object, but also affixes selecting a stem. That is to say, subcategorization may well be a defining characteristic of a head. If so, and if C-Infl matching is due to C selecting specific values of Infl, then C is the head of S'. As such it will have priority in feature percolation, so that the only features characterizing S' which do not originate in C are those which C is unspecified for, among them e.g. subjunctive. In particular, the "major features" (V,N) will percolate from C to S', regardless of the categorial features of S. Furthermore C will govern S, and potentially govern the subject across the S-boundary (if it is a strong governor), hence potentially assigning Case to the subject (as in the case of for).

Yet another well-known hypothesis regarding the head of the clause is that the clause is a projection of V, an hypothesis first proposed (in the context of X-bar theory) by Jackendoff(1977). In fact Jackendoff(1977) notes the possibility that certain complementizers, such as that, are "deverbalizing affixes" of sorts, turning the clause into a nominal expression. This is very close to what we are advocating in this work, and implies that the complementizer is the head of the clause in that it determines the categorial status of the clause. Jackendoff's(1977) principal thesis is rather that S is a projection of V. But given V-to-I and the hypothesis that Infl is the head of S, S will be a projection of V in the present framework, too, as well as a projection of the tense and mood features of Infl.

It should be kept in mind that the whole issue of headedness is put in a new perspective once we assume PC2. As discussed in section 3.2.1, this convention gives a formal, X-bar-theoretic expression to the distinction between "grammatical head" vs. "semantic head". There is a sense in which V is the "head" of the clause, in that it provides the "descriptive content" making possible the identification of the sort of event the clause describes (as
discussed by Abney(1986)). Nevertheless other considerations indicate that the
content of C determines the categorial status of the clause, and that hence C is
the grammatical head of the clause. Since complementizers are functional
categories free of any descriptive content, this does not prevent V from
projecting all its properties except its categorial features (more precisely,
except those categorial features for which C is specified) onto the maximal
clausal projection, hence providing it with descriptive content. This is ensured
by PC2.

5.3.4. The proper formulation of the Predicate Principle

Kayne’s(1982) principles are formulated negatively. Consider the possibility of
a positive formulation (as proposed in Holmberg(1983b)):

(13) The Predicate Principle (strong formulation): A predicate
    must be (+V).
(14) The Argument Principle (strong formulation): An argument
    must be (−V).

Our feature theory provides for a neutral value (%V), defining A and P, the
categories whose projections typically serve as modifiers. This suggests a
third principle completing the paradigm:


I shall henceforth refer to (13)–(15) collectively as "the functional principles".
As should be obvious by now I use the term "modifier" as a catch-all for all
sorts of "adverbal" categories, including non-obligatory arguments such as by
bus in We went to Oslo by bus and secondary predicates such as reluctantly in
We went to Oslo reluctantly. The sort of predication relation holding between
reluctantly and the subject is exempted from the Predicate Principle, falling
instead under the Modifier Principle.

Given that there is a neutral value for (V), the negative, weak formulation in
(5) leaves open the possibility of an argument which is not (−V) but (%V), and
the possibility of a predicate which is not (+V) but (%V). The positive, strong
formulation excludes these possibilities. Now while it is probably true that
most predicates are (+V) (at least in the Germanic languages), most arguments
(−V), and most modifiers (%V), there would seem to be enough deviations from
this general pattern to motivate selecting the weak formulation over the strong
one. For instance, in many languages a primary predicate may consist of a bare
AP, PP, or NP without any verbal copula, as in the Arabic example (16):

(16) Kariimun kaatibun.
    Karim author
In languages like English primary predication always requires a verbal copula, but there are cases of secondary predication where no verbal copula is required, as in (17):

(17)a. I consider (John a fool).
   b. We made (Mary happy).

In the case of main clauses, by assumption predicates with respect to the functional principles, although clearly most are headed by V (in the Scandinavian languages) there are some headed by "main clause complementizers", in Swedish månne, kanske, and bara. Of course these items may be (+V) but it is at least equally plausible that they are (%V). Furthermore, PP can serve as subject argument in certain constructions: Under the table is a good place to hide, and correspondingly, in certain constructions a referential NP can serve as a modifier: I worked there two weeks, indicating that the strong formulation of the Argument and Modifier principles is too strong.

Case like these would seem to clearly favour the weak formulation of the principles over the strong ones.

On the other hand the strong formulation has an explanatory potential which the weak formulation lacks. In particular, the strong Predicate Principle predicts correctly that the sentences in (18) will be ill-formed without a verbal copula:

(18)a. John *(is) stupid.
   b. Mary *(is) in trouble.
   c. The book *(was) a great success.

That is to say, the strong Predicate Principle explains the obligatory presence of a verbal copula in cases where the predicate is not a VP: without a verbal copula the constructions will violate the strong Predicate Principle. They do not, without additional assumptions, violate the weak Predicate Principle, since the latter is compatible with (%V) predicates.

It seems to me that this is a fairly strong argument in favour of the strong formulation, since it is by no means obvious what other principle of grammar would require the presence of a verbal copula in cases like (18). True, the verbal copula serves to carry tense and agreement inflections, and, given that tense and agreement are inflections, they need a carrier. But this does not explain the obligatory nature of the copula, since the verbal copula is obligatory in many infinitival constructions, too, where there are no tense or agreement inflections:

(19a. I believe John to *(be) stupid.)
b. *(Being) cheated like that is embarrassing.

Furthermore it is not obvious why the carrier of tense etc. must be a verbal element, rather than, say, a (%V) element.

As will be discussed below the strong formulation can also explain the obligatory nature of V-to-I: a verb is moved to Infl in order to make the predicate verbal, thus satisfying the Predicate Principle.

In view of this we might consider the counterexamples against the strong formulation of (in particular) the Predicate Principle in more detail, to see whether some, or all of them can be dismissed. With regard to languages like Arabic, Russian, etc., where a sentence can, apparently, consist only of a subject and a bare AP, PP, or NP, as in (16) we might consider the possibility that these constructions do contain a covert, empty verbal copula, satisfying the strong Predicate Principle. This hypothesis is at least weakly supported by the fact that a verbal copula does show up in these languages, too, in many constructions. Leaving out the verbal copula tends to be possible only in a specific tense/aspect. For instance in Arabic it is possible only in the imperfect aspect. In other aspects/tenses a copula is required, and this copula has unmistakable verbal properties (taking verbal inflections):

(20)a. *(Kaana) Kariimun kaatiban.
   was
b. Saufa *(yakuuna) Kariimun kaatiban.
   FUT   is
   "Karim will be an author."

Constructions like (16) could then involve a special rule, roughly as in (21):

(21) C (NP α), α not (+V) ----> C (NP (+V, imperf. ( α ))

where (+V) surface as (some form of) kaana, and the surface word order is the result of V-to-C.

Secondary predication in English-like languages where the predicate is non-verbal, as in (17a,b), do not violate the strong Predication Principle if at some level of representation their structure is (22a,b), respectively, as suggested in Chomsky(1986): cf. section 2.9, and if the Predicate Principle applies at this level of representation.

(22)a. I (consider a fool) John
   b. We (made happy) Mary

As for the main clauses headed by manne etc. we may indeed stipulate that they are (+V), even though this would be ad hoc. On the other hand, given PC2, they may be (%V) without violating the strong Predicate Principle, since the
(+V) feature may percolate from S to S' when C is (%V).

Cases of PP arguments is no counterexample to the strong Argument Principle given the analysis in section 3, where the (-V) feature is permitted to percolate from the NP complement of P to PP, given that P is (%V). As for cases of bare NPs serving as modifiers, at least some of them may be analyzed as covert PPs (cf. Czepluch(1982: fn.16)), though probably not all (cf. Larsen(1985)).

There are no doubt other counterexamples to the strong formulation of the principles. Consider the Swedish expressions in (23):

(23)a. Kanske att hon kommer senare.
    \textit{maybe that she comes later}
b. Aldrig att jag skulle gå dit.
    \textit{never that I would go there}
c. Möjligen att Peter vet var hon är.
    \textit{Possibly that P. knows where she is}

In these constructions what looks like a bare sentence adverb functions as a predicate taking an \textit{att}-clause as argument. The construction is not all that uncommon, although it seems to be lexically restricted to certain adverbs. Clearly there is very little independent reason to assume these adverbs (except possibly for \textit{kanske}) are (+V). The natural assumption is, rather, that they are (%V), and hence the expressions in (23) would be (%V) main clauses. In this case there can be no percolation of (+V) from lower down the clause, due to the intervening \textit{att}. It is hard to know what to make of this construction, though. It seems it falls outside of Swedish "core grammar" in more than one way. For instance, it looks like a sort of null subject construction, like, say, the Finnish \textit{Näkyy olevan... "}(It) seems to be...", although Swedish does not allow null subjects. Nevertheless, even though it may not be part of Swedish core grammar, it exists, as an at least partly productive construction, and hence should be provided for by UG, which would seem to be incompatible with the strong Predication Principle.

Possibly there is a certain choice regarding the classification of main clauses as predicates. The main clause is necessarily a predicate (with respect to the Predicate Principle) in constructions where it has a "subject", that is when the XP-position is filled. But there would be a possibility of not counting the main clause as a predicate when the XP-position is not filled, where this possibility may be realized in some languages but not in others. In Swedish it is realized in "peripheral" constructions like (23).³

With these provisos I will assume the strong formulation of the Predicate Principle, as well as the Argument and Modifier Principles, although this is less important in the present context. We can now explain V-to-C by the Predicate Principle: The sentence (24) with the structural analysis indicated, is ruled out as a violation of the Predicate Principle:
(24)a. (S, (S, Johan (I, inte köpte boken )))

In fact, in order to achieve this result we have to make an additional assumption: Given PC2, and given that Infl is (+V) as a result of V-to-I, the (+V) feature may percolate from Infl to S' unless C is specified (-V). In the following subsections I will investigate the hypothesis that C as well as Infl have the default specification (-V). I will begin by considering Infl and the explanation of V-to-I in more detail.

5.4. Explaining V-to-I

Considerable effort has been spent in the last few years on trying to explain the obligatory nature of V-to-C. Much less effort has been spent on the explanation of V-to-I -- partly because the existence of V-to-I is not as widely accepted as the existence of V-to-C, but probably also because the explanation may appear to be trivial: the verb inflections have to attach to the verb somehow, and V-to-I is a way to achieve this. However, this can only be a partial explanation, for the following two reasons:

Although V-to-I may be a very common way to merge verb and Infl, across languages, there are other means provided by UG: in particular there is movement in the opposite direction, movement of inflections from Infl down into VP, the traditional Affix Hopping. The English sentences in (25) have been derived by Affix Hopping:

   b. The flat definitely needs painting.
   c. He just arrived.

They cannot have been derived by V-to-I. The unmarked word order of S in English is NP - I - S-adv - VP. This shows when an auxiliary is added. According to standard accounts of the English verbal system auxiliaries are always in Infl (= AUX) (base-generated in Infl), possibly except for be and have which are in VP if another auxiliary occupies Infl (cf. below for discussion and references). The unmarked word order is NP - auxiliary - S-adv - VP:

(26)a. John would never tell a lie.
   b. The flat is definitely in need of painting.
   c. He has just arrived.

If (25a,b,c) were derived by V-to-I we would expect the unmarked word order to be as in (27), but this word order is totally ungrammatical.

5. V-movement: an explanation

b. *The flat needs definitely painting.
c. *He arrived just.

That is to say, verb and inflection have merged in (25) not by V-to-I, but by "I-to-V", that is Affix Hopping. The question then is: Why do the other Germanic languages not avail themselves of this possibility?

The second reason why the need to merge V and Infl is at most a partial explanation of V-to-I is this: V-to-I applies not only in finite clauses, but in certain infinitival constructions, too, although these have no tense or agreement inflections that need to merge with the verb. This can be shown to be the case in Icelandic: Control infinitivals in Icelandic have the same word order as finite embedded clauses — compare (28) and (29) — a word order which, as discussed, is the result of V-to-I.

(28)a. Eg lofaði (að lesa ekki bókina).
   I promised to read not the book
b. *Eg lofaði (að ekki lesa bókina).
(29)a. Eg veit (að Jón keypti ekki bókina).
   I know that J. bought not the book
b. *Eg veit (að Jón ekki keypti bókina).

In section 4.2. we argued that the word order NP - Vfin - S-adv in finite embedded clauses is not base-generated, but is the result of V-to-I. The argument applies to control infinitivals, too. Hence there must be some explanation why V-to-I is obligatory over and above the need to merge V and the verbal inflections, in Icelandic. Quite probably this explanation will carry over to V-to-I in finite clauses, and in other languages than Icelandic. It seems improbable that Icelandic would be absolutely unique in applying V-to-I in infinitival constructions, although I do not know of any other language where there would be comparable direct evidence of such movement. In section 5.6 I will show that Danish and Norwegian do not have V-to-I in control infinitivals (or other infinitivals), but instead insert an element corresponding to English to in Infl. I will assume, however, that Swedish has V-to-I in control infinitivals, only in the case of Swedish this does not affect word order, since in infinitival as well as in finite clauses Infl and the head of VP are adjacent in Swedish.

One might assume a condition to the effect that Infl must be lexically filled. Such a condition would trigger V-to-I, or insertion of an auxiliary in Infl, or insertion of some other filler (in some infinitival constructions to, and the corresponding item in the other Germanic languages, might be alternative Infl-fillers; see below section 5.6). However this does not explain why, except for certain infinitival constructions, only verbal categories may fill Infl. I will here explore the hypothesis that the condition is that Infl must be filled by (+V) at s-structure. But we have already discussed a principle from which such a condition follows: the Predicate Principle: Predicates are (+V). Infl heads the
predicate, hence must be (+V), which is achieved by V-to-I in e.g. Icelandic, and by base-generation of auxiliaries in Infl in English. The sentences (28b) and (29b) are then ruled out as violations of the Predicate Principle, just like sentences such as *John stupid, The book a great success, etc.

However, once we assume Percolation Convention 2 (cf. (36) section 3), we need to explain also why it is that the (+V) feature of VP cannot percolate from VP to I', because if it can, no V-to-I or base-generation of an auxiliary is required to satisfy the Predicate Principle. The (+V) feature of VP will be prevented from percolating to I' if and only if Infl is (-V). Let us then postulate that Infl is (-V) by default. This will force V-to-I, alternatively insertion of an auxiliary verb in Infl, in order to satisfy the Predicate Principle.

Consider now V-to-C: as already mentioned the obligatory nature of V-to-C cannot be explained by the Predicate Principle unless we can explain why it is that the feature (+V) cannot percolate from Infl to S'. Given PC2 (+V) is free to percolate from Infl to S' unless there is an adversely specified head in the way, that is to say, unless C is specified (-V). Let us therefore assume that C, like Infl, is (-V) by default. This can be related to the idea (suggested in Stowell(1981)) that C and Infl are somehow "the same category, spread over two positions". They are clearly categories of the same type, both (potentially) containing information about tense and mood, both being landing sites of verb movement, etc. If C and Infl are in some sense the same category it is to be expected that they should have the same default value. There would be just one default rule, applying to C and Infl. Of course C and Infl cannot be the same category in cases like that John has been here, where C is filled by the (-V) item that, and Infl by the (+V) item has: no category can be both (+ and -V). We would have to say that they are "the same category" only so long as they are not lexically filled. When C is lexically filled by a complementizer it is an independent head, selecting values of Infl, as discussed in section 5.3.3.

Let us at this point consider the structure of the English sentence in more detail. It will be seen that the hypothesis that C and Infl have the same default value can be used to explain the fact that English, unlike all its Germanic congeneres, is not a V2 language.

5.5. Why is English not V2?

English is not a V2 language. The word order in a subject-first main clause need not, and sometimes cannot be V2:

(30)a. John never says anything.
   b. *John says never anything.

English has got some V2-like properties: if there is an auxiliary, the unmarked word order in a subject-first sentence is NP - auxiliary - S-adv - VP. The word
order where the S-adv precedes the auxiliary is often also possible.

(31)a. John has never said anything.
    b. John never has said anything.

V-to-C applies in certain constructions in English, but exclusively to auxiliaries.

(32)a. Did you see her?
    b. *Saw you her?
    c. Which books did you buy?
    d. *Which books bought you?
    e. Not a word did he utter.
    f. *Not a word uttered he.

That so called "subject-auxiliary inversion" is V-to-C, i.e. movement from Infl to C, is shown in particular by the fact that it is blocked by a complementizer (cf. den Besten(1977/83)):

(33)a. Had I been ten years younger...
    b. If I had been ten years younger...
    c. *If had I been ten years younger...

All this follows if English has no V-to-I, but instead base-generates auxiliaries in Infl. The auxiliaries are the modals (can, may, must, should, etc.), be and have (which are base-generated in VP and moved to Infl, in some theories), and finally do, which is inserted as a "default auxiliary", if no other auxiliary is present. Do is deleted, or rather, not phonetically realized except in certain contexts where it must be phonetically realized for principled reasons (when in C, before not, when stressed, or before a deletion site) : cf. Emonds(1976), Akmajian, Steele, and Wasow(1979), den Besten(1977/83). The s-structure of e.g. (30a) will then be (34):

\[
(34) \left< S, C \left< S \left< I, (\text{do+Tns+Agr}) \right< \text{VP} \right< \text{never} \left< \text{VP} \left< \text{say anything} \right> \right> \right> \right>
\]

The Head Movement Constraint will rule out movement directly from VP to C (cf. section 4.2). Verb movement to C has to pass through Infl. If Infl is always filled by an auxiliary, it follows that only auxiliaries can be moved by V-to-C, in English.

Why, however, does English not apply V-to-C, restricted to auxiliaries, to the same extent as the other V2 languages? Why are (35a,b) not well formed?

    b. *Tomorrow will I go to Helsinki.
English permits V-to-C principally only in (direct) questions and when a negative constituent is fronted (see (32)). Why this should be the case seems to me to be one of the more intriguing puzzles, in the domain of English, and more generally Germanic, verbal syntax.

Apparently structures like (35) were once well formed. Visser writes (Visser 1969: 1523):

"When in middle English and in the first three centuries of the Modern period the object in a sentence was given prominence by putting it at the head of a sentence, the construction with periphrastic do + inversion was as usual as that with straight word-order with and without do: 'These books did he sell', 'These books he sold', 'These books he did sell'."

Is there any explanation why the form These books did he sell did not survive?

English was once a typical V2 language, much like present day German as regards word order: the finite verb was the final constituent in embedded clauses, the first or second constituent in main clauses. It acquired basically its present day word order roughly during the Middle English period. The principal changes that English has gone through concerning the position of the finite verb are: (a) a change from OV to VO, (b) the emergence of the sort of auxiliary system characteristic of Modern English, and (c) loss of the "V2 constraint". It is an interesting question to what extent these changes are related, and if they are related, how. I will here disregard the change from OV to VO, and simply assume it is unrelated to the two other changes. The question I want to consider here is: is there any relation between the two other changes, and what would this relation be? Can there be a language which has an English-type auxiliary syntax which is V2 in the same sense as Swedish, German, etc.?

Lightfoot (1979) investigates the diachronic process whereby the English auxiliary system acquired its present properties. He proposes to describe it as the introduction of a new syntactic category AUX in English grammar. In Old English the modals were on the whole formally indistinguishable from other verbs, and they are most plausibly analyzed as verbs, heads of VP, just as in e.g. present day Swedish or German. There was also no periphrastic do. Already in the Old English period a number of largely independent changes began to affect the modals, according to Lightfoot, making them more and more exceptional as verbs: loss of ability to take objects, loss of finite forms, changes in meaning, etc. At a certain point, according to Lightfoot, a restructuring of the grammar occurred, which had the effect of "institutionalizing" the exceptional properties of the modals: the category AUX was introduced, and the modals were no longer exceptional verbs, but regular auxiliaries. The phrase structure rule S ----> NP VP was replaced by S ----> NP
AUX VP. In roughly the same period do acquired its present day character. In the present framework we need not assume any change in the phrase structure rules — indeed we could not do so, since we do not assume any phrase structure rules. The change is rather that the auxiliaries instead of being generated in VP and moved to Infl (by V-to-I), came to be inserted directly under Infl. Presumably this will happen to any verb which loses its non-finite forms. The English modal auxiliaries are inherently tensed, hence are inserted directly in tensed Infl. Inherently tensed auxiliaries occur in the other Germanic languages, too, although they are fewer than in English (e.g. in Swedish the auxiliary lär "be supposed to", and in many dialects borde "should" have only an invariant, tensed form, and are thus presumably inserted in Infl (see also Thráinsson(1986a) on Icelandic auxiliaries).

I would suggest that the most important change, as regards the English verbal system, is the introduction of the auxiliary do, as a "default auxiliary": At a certain stage English stopped applying V-to-I, and instead the auxiliary do would be inserted in Infl, whenever the sentence contained no other auxiliary. In present day English do is deleted, or not phonetically realized except in certain contexts. The above quotation from Visser indicates that do earlier was, or could be, phonetically realized in contexts where it would not be today: These books he did sell. Using do as a "default auxiliary" in this way meant that V-to-I was lost completely — with the possible exception of be and auxiliary have: according to several classical studies be and have are moved from VP to Infl (cf. e.g. Akmajian, Steele, and Wasow(1979)), in which case that would be all that remains of V-to-I in English. (Alternatively be and have are optionally inherently tensed, and hence may but need not be inserted directly in I.)

Clearly insertion of auxiliaries, including the "default auxiliary" do in Infl makes V-to-I redundant. But is there any reason why it should also make V-to-C redundant? Or is the loss of V2 that occurred in English an independent, unrelated change? If the hypothesis proposed in the previous section regarding the default values of C and Infl is on the right track, then it would seem that the loss of V-to-I and the loss of V2 in English are closely connected. The hypothesis was that C and Infl have the same default value, which is (−V) in the V2 languages. But when the auxiliary do acquired its present use in English, the default value of Infl became (+V). We may, in fact, view it as follows: Infl in Modern English is (+V) by default, where the feature (+V) is realized as do in certain contexts. As a consequence, given the hypothesis that C and Infl always have the same default value, the default value of C would also be (+V). This means that V-to-C would not be required, to satisfy the Predicate Principle: In the absence of a complementizer C, and hence S' will always be (+V).

This does not yet explain why (35) is actually ungrammatical. It explains why you need not apply V-to-C in such clauses — that is because C, hence S' is (+V) by default — but not why you must not. It seems we have to assume a
(universal) "last resort principle" or "lazyness principle" of the following kind:

(36) The Lazyness Principle: Don’t move unless you have to.

The constructions (35) do not actually violate any principle of UG, but since V-to-C is wholly redundant, the operation violates the Lazyness Principle. Obeying the Lazyness Principle would be the unmarked case. English continued for a time to optionally apply V-to-C in cases like (35) — hence forms like *These books did he sell — but later conformed completely to the Lazyness Principle. This implies that there are special reasons for applying V-to-C in cases like (31) (in questions and in connection with negative constituent preposing); I shall return to this issue below.

However, as soon as we consider some additional languages it appears that something is wrong in this scenario. There are languages which apply V-to-I but do not apply V-to-C. This may, in fact, be the most common pattern, crosslinguistically. Consider, for instance, French: in a subject–first sentence the finite verb precedes S-adv, while non–finite verbs follow S-adv:

(37)a. Jean voit souvent Marie.
   J. sees often M.
   b. Jean a souven vu Marie.
   c. *Jean a vu souvenir Marie.

This indicates that the position of Infl is to the left of S-adv, and that French has V-to-I. But French does not have general V-to-C, a shown by (38):

(38)a. Ce matin Jean a vu Marie.
   this morning
   b. *Ce matin a Jean vu Marie.

This indicates that, although Infl has the default value (-V), forcing V-to-I, C has the default value (+V).4

Or consider the African Kru languages studied by Koopman(1984): in a subject–first sentence the finite verb is in second position, but non–finite verbs are in final position (Koopman(1984: 42):

(39)a. À lì sàká.
   we ate rice
   b. À lì sàká li.
   we PERF-A rice eat

Koopman argues carefully for a analysis where the main verb moves to Infl in the absence of an auxiliary. There is, however, no V-to-C (of the sort found in the Germanic languages) in the languages in question: e.g. wh–questions have
the word order in (40):(ibid.: 75)

(40) αλό α νέο νέο 1ά?

who you saw PART WH

"Who did you see?"

Again this indicates that Infl has the default value (-V), forcing V-to-I in the absence of an auxiliary, but C the default value (+V), making V-to-C unnecessary.

I propose the following: In the unmarked case the principle (41) holds, at s-structure:

(41) C and Infl have the same value, unless both are lexically filled.

This means that if Infl is (+V) at s-structure, either by virtue of V-to-I or insertion of a (+V) auxiliary, or by any other means, C will be (+V), too, unless it is filled by a (-V) or (%V) complementizer. Thus the unmarked case is that V-to-I or insertion of an auxiliary in Infl is sufficient to make main clause S' verbal, satisfying the Predicate Principle. The V2 languages represent a marked option in not conforming to (41). Instead C is (-V) by default, regardless of the value of Infl. Hence V-to-C must apply, to make S' verbal (or, alternatively, a (+V) complementizer is inserted). That this is a marked option is reflected by the fact that V2 languages are relatively rare (although perhaps not as rare as may be thought, if VSO languages all generate their "basic" word order by V-to-C ; cf. Emonds(1980), Koopman(1984:384)), Sprat(1985)). Among the languages which do not conform to (41), I assume (42) is the unmarked option:

(42) C and Infl have the same default value.

Both (41) and (42) would be a consequence of C and Infl being in some sense the same category, whenever they are not both lexically filled.

Now we can understand the progression of English from a typical V2 language, through the stage where These books did we sell was well formed, to the present day grammar as follows: When English started using do as a default auxiliary, V-to-C of other than auxiliaries was lost. For a time English speakers continued to assign the default value (-V) to C, although the default value of Infl was now (+V). This represented a highly marked option, however, violating both (41) and (42). The less marked option of conforming to (42), and hence also (41), gradually ousted the marked option.

We still have to assume something like the Lazyness Principle to explain why These books did he sell is actually ill-formed in present day English. Why, then, is V-to-C obligatory in direct wh-questions? The fact that it is obligatory
in direct, i.e. main clause questions, excluded in indirect, embedded questions indicates that the explanation involves the Predicate Principle.

(43)a. Which books did he sell.
   b. *Which books he sold?
   c. *I wonder which books did he sell?
   d. I wonder which books he sold.

((43c) is OK with a comma break after wonder, that is as an embedded root phenomenon.) It seems that when a wh-phrase is fronted, the empty (+V) C is not "strong" enough to keep the clause verbal, so that in main clauses, where the Predicate Principle must be satisfied, C must contain a phonetically realized auxiliary. We may describe this as follows: The structure after wh-movement is (44); all preposed phrasal constituents go to the XP-position, in English as in the other Germanic languages:

\[(44) \quad (S''_{\text{wh}} \quad (S', (C_{[+V]})_{S'})_{S} \ldots)\]

The feature (+WH) has the effect that the XP-phrase and the empty C are restructured. The result is (45), where the fronted wh-phrase is the derived head of the clause.

\[(45) \quad (S', \quad \text{wh} \quad (S_{S'})_{S} \ldots)\]

This is OK in embedded clauses, which should be either (\(-V\)) or (\(\%V\)). It is not OK in main clauses, which have to be (+V). The solution is to have a lexical auxiliary in C in main clauses, preventing the restructuring of the wh-phrase and C. Not only the feature (+WH), but also the feature (+NEG) apparently has the effect that the fronted phrase is restructured with C. Hence there must be an overt auxiliary in C in cases like Not a word did he utter. Finally in direct yes/no questions the overt auxiliary in C might simply be a way to indicate syntactically the speech act type. Fronting the auxiliary is not obligatory in direct yes/no questions: the question-\(h\)ood may be indicated for instance simply by intonation.
5.6. Infinitival clauses

5.6.1. The problems

In this section I will consider the structure of infinitival clauses, and in particular some interesting differences between on the one hand Icelandic and Swedish, on the other hand Danish, Norwegian and English. The issue has recently been investigated in Platzack(1986c), and the theory to be outlined here is a modification and improvement on Platzack's theory.

The Scandinavian languages fall into two divisions with regard to the position of the infinitive marker roughly corresponding to English to: in Icelandic and Swedish it precedes S-adv, while in Danish and Norwegian it follows S-adv.

(46)a. Hann lofaði (âpp lesa ekki bókina). (Icelandic)
   
   he promised to read not the book

b. Han lovade (att inte läsa boken). (Swedish)
   
   to not read the book

c. Han lovede (ikke at lese bogen). (Danish)
   
   not to read the book

d. Han lovete (ikke å lese boken) (Norwegian)
   
   not to read the book

Icelandic differs from the other three in that the verb precedes S-adv (a result of the placement of S-adv and V-to-I, as in finite clauses; cf. below). A straightforward account of the variation in the position of the infinitive marker is that it is situated in C in Icelandic and Swedish, but in Infl in Danish and Norwegian, as proposed by Platzack(1986c); see also Kayne(1981b), where Kayne shows that the French infinitive marker de is situated in C while English to is in Infl. French thus patterns with Icelandic and Swedish, while English patterns with Danish and Norwegian.

Support for Platzack's hypothesis is provided by the following facts: Swedish, Danish, and Norwegian all readily delete the finite clause complementizer corresponding to English that, in positions where the embedded clause is (properly) governed, typically following verbs of saying and thinking:

(47)a. Han sa (att) han ville gå hem. (Swedish)
   
   he said that he wanted go home

b. Han sagde (at) han ville gå hjem. (Danish)

Swedish also readily deletes the (homonymous) infinitive marker in such contexts. In Danish and Norwegian you can never delete the infinitive marker:
(48)a. Han lovade (att) gå hem. (Swedish)
    he promised to go home
b. Han love * (at) gå hjem. (Danish)

Let us, following Stowell(1981) assume the finite clause complementizer is permitted to be empty in contexts where the clause, and hence its head, the complementizer, is properly governed, by virtue of the ECP (this will be made more precise in section 6). In Swedish the infinitive marker is a complementizer, and thus it can be empty when properly governed by a verb, the verb lova in (48a). In Danish and Norwegian the infinitive marker is in Infl, where it will not be governed, since on the one hand C and S' protect it from government from the outside, and on the other hand the phonetically empty C cannot govern Infl. Hence the infinitive marker can never be empty. In Icelandic the infinitive marker cannot be empty, but this is of no consequence since the homonymous finite clause complementizer cannot be empty either: Icelandic is much more restrictive than the other Scandinavian languages with respect to "complementizer deletion".

To be a bit more specific: once the infinitive marker is generated in Infl in Danish and Norwegian it cannot be "deleted", i.e. it must be phonetically realized not to violate the ECP. This does not explain why the infinitive marker must be generated in Infl in the first place in this construction. Not all infinitival constructions have an infinitive marker in Danish and Norwegian: just like in English perception verb complements and let-complements do not have an infinitive marker. (Let us, following Kayne(1981c), refer to perception verbs and let-type causative verbs as "L-verbs").

(49)a. Vi lot/ hørte Jon (*å) syng i dusjen. (Norw.)
    we let heard J. to sing in the shower
b. Han hade ikke set eller hør mig (*æt) bestille noget. (Dan.)
    he had not seen or heard me to do anything

As discussed in section 5.4, the word order NP - Vn - S-adv of the Icelandic control infinitival (46a) indicates that V-to-I has applied. The fact that the object in the control infinitival can be shifted leftwards, around the negation and other S-adv, as shown in (51) is also evidence that V-to-I has applied. This movement is only possible when the launching site, the object position, is governed by a verb trace, that is only when the governing verb has been moved (cf. Thráinsson(1986a), Holmberg(1985b): we return to a detailed study of this rule in section 6.

(51) Hann lokaði að lesa bókin; ekki v e

If the verb is in Infl in the Icelandic control infinitival then ad cannot also be in Infl (except if it is some kind of proclitic on the verb, a possibility I will not
consider here). I propose, then, that the structure of the control infinitival (46a) is (52):

\[
(52) \quad (S, aØ (S^{PRO} (IP \, lesa) (VP^ekki (VP^v bókina))))
\]

I will assume V-to-I applies in Swedish control infinitivals, too, only in Swedish this does not affect word order, since Infl and the head of VP are adjacent.

Compare, however, the Icelandic control infinitival and the AcI and raising infinitivals in (53): in the latter constructions S-adv must precede the finite verb, which is to say that V-to-I cannot apply successfully in these constructions.

(53)a. *Eg tel' Jón hafa ekki lesið bókina.
   \begin{center}
   *I believe J. have not read the book
   \end{center}

b. Eg tel Jón ekki hafa lesa bókina.

c. *Jón virðist lesa ekki bókina.
   \begin{center}
   *J. seems read not the book
   \end{center}

d. Jón virðist ekki lesa bókina.

The questions we now want to answer are: (a) why is the infinitive marker obligatory in all infinitival clauses except L-verb complements in Danish, Norwegian, and English, and (b) why is V-to-I obligatory in control infinitivals in Icelandic, and, by assumption, in Swedish, but impossible in AcI and raising infinitivals? It will be shown that we can answer these questions on the basis of the theory expounded earlier, with very few auxiliary assumptions.

Let us first postulate (54):

(54) C and Infl always go together.

This is not a new, independent postulation, but another consequence of the hypothesis that C and Infl are "the same category".

5.6.2. Control infinitival

In control infinitivals there must be a C and hence an S' boundary to protect PRO from being governed by the matrix verb. In Icelandic and Swedish C is filled by aØ and att respectively, in Danish, Norwegian, and English it is phonetically empty. Given (54) a control infinitival must then also contain Infl. Now assume there is a condition which requires Infl to be lexically filled. We have already discussed such a condition: the Predicate Principle, which given that Infl is \(-V\) by default triggers V-to-I in finite clauses, and, we may assume, is involved in infinitival clauses as well. Let us at this point consider Platzack(1986:). Up to now we have basically followed Platzack, except that he does not take into account the verb movement facts in Icelandic control
infinitivals, and except that he does not explicitly assume (54); he does, however, assume all control infinitivals have Infl as well as C.

Platzack (1986c) proposes that the requirement that Infl be filled has to do with θ-role assignment to the subject: the predicate will not be able to assign a θ-role to the subject position unless the head of the predicate, that is Infl, is filled ("there must be some information in Infl"). Only this will make the predicate "Theta-visible", i.e. visible as a θ-role assigner. In Danish (and Norwegian and English, although Platzack only considers Danish) this requirement is met in control infinitivals by at (å and to). In Icelandic and Swedish, he proposes, Infl is filled by a (−Tense) feature, satisfying the Theta-visibility condition. The idea that an abstract feature signifying the absence of tense would count as a filler in the same way as a lexical item is obviously quite unattractive. Fortunately we need not adopt it, since, as we have seen, Infl is filled by V-to-I in Icelandic and there is no reason not to assume it applies in Swedish, too.

But now a number of questions arise which are not posed in Platzack (1986c): First, why do Danish, Norwegian, and English not also apply V-to-I, but instead insert at etc. in Infl? Is it purely accidental? Second, is it significant in any way that the infinitival marker is "prepositional" -- in English as in German, Dutch, and the Romance languages, though less obviously in the Scandinavian languages? 7

The answer to the first question comes from the principle (41), repeated here:

(41) C and Infl have the same value, unless both are lexically filled.

Let us tentatively make one auxiliary assumption: The rule that C is (−V) by default does not apply in infinitival constructions in the Scandinavian languages. This auxiliary assumption may, in fact, turn out to be unnecessary, as we shall see.

In Danish, Norwegian, and English C is not lexically filled. V-to-I makes Infl (+V), and hence, in these languages, it will also make C (+V). This will lead to a violation of the Argument Principle, if the control infinitival is an argument, or the Modifier Principle, if it is a modifier. In Icelandic and Swedish C is lexically filled by ad and att, respectively, an element which, whatever its precise nature, is presumably not (+V). This means that V-to-I may apply in these two languages.

Instead of applying V-to-I the Danish-type languages insert an element in Infl. The Predication Principle will constrain narrowly the choice of element that can be inserted in Infl: it must not be (+V), since that will make C/S′(+V), and it must not be (−V), since that will make I′ (−V), violating the Predicate Principle. The only possible choice is a (V) category, e.g. a preposition-like category. Given PC2, percolation of (+V) is then possible from VP to I′,
satisfying the Predicate Principle. Given (41), C/S' will be (%V), satisfying the Modifier Principle, though not the (strong) Argument Principle. The latter may, in fact, be a welcome result. As argued by Williams (1980), and more recently, in a somewhat different framework, by Chierchia (1985) control-infinitivals are not arguments but rather, in their terms predicates, in our terms modifiers (cf. fn. nn). Without going into any details of this type of control theory, we may just note that it accords with the idea (cf. section 2.7) that cases of modification as in (55a) should be treated by the same mechanisms of control as applied in (55b):

(55)a. John saw the movie drunk.
   b. John wishes to leave.

The relation between *John* and *drunk* in (55a) and the relation between *John* and *to leave* in (55b) may be formally expressed as coindexing of *John* and PRO, i.e. the structure of *drunk* would be (PRO *drunk*), the structure of *to leave* would be (PRO *to leave*).\(^8\)

We can thus propose an answer to the second question posed above: It is not entirely accidental that the infinitive marker is related to a preposition. This is a consequence of requirements imposed by the Predication Principle and (perhaps) the relation which the infinitival clause has to the controller. Note that if the infinitival is a modifier with respect to the functional principles, then we need not in fact stipulate that infinitivals are exempted from the rule which makes S' (-V) by default: This rule will then provide a trigger for insertion of a (%V) element either in C or in Infl.

5.6.3. L-verb complements

As mentioned, L-verb complements have no infinitive marker in Danish or Norwegian, or in English.

56)a. I saw (John (*to) kiss Mary).
   b. We let (him (*to) go).

Likewise, in Icelandic and Swedish there can be no infinitive marker in these constructions:

(57)a. Eg let (*að) Jðn (*að) fara. (Icel.)
     I let J. go
   b. Vi hörde (*att) dem (*att) komma. (Swe.)
     we heard them come

Following Kayne (1981b: fn. 16) and Platzack (1986b) I assume these are not true clauses, but small clauses, projections of V lacking both C and Infl. As evidence
of their defective (as clauses) nature we may adduce the fact that they do not happily admit aspectual have or a negation, that is they cannot be the scope domain of aspect or negation:

(58)a. ??I saw John have kissed Mary.
   b. ?I heard Mary not say hello to me.
   c. ?Don’t let John have returned before midnight.
   d. ?We let John not write the essay.

At least in the case of (58a,b) the ill-formedness is not due to semantic deviance: compare (59a,b):

(59)a. I saw that John had kissed Mary.
   b. I heard that Mary didn’t say hello to me.9

In these constructions, then, there is neither C nor Infl, a possibility allowed by (54). Tentatively I assume they undergo a process by which the L-verb and the SC predicate are restructured into a complex verbal category taking the SC subject as object, assigning to it a compositional 8-role.

5.6.4. Raising infinitivals

As mentioned, there is no V-to-I in raising or Acl infinitivals in Icelandic. Nor is there any infinitive marker:

(60)a. Hann virðist (*að) hafa lesið bókina.
   he seems to have read the book
   b. Eg tel (*að) hann (*að) vera heimskan.
   I consider him be stupid

Similarly in standard Swedish there is no infinitive marker in these constructions.

(61)a. Han verkar (*att) ha läst boken.
   he seems to have read the book
   b. Jag anser (*att) honom (*att) vara dum.
   I consider him be stupid

On the other hand, in some dialects of Swedish the infinitive marker is optional in these constructions, in post-subject position, i.e. in Infl. In these dialects the stars can be removed from (61a,b), except the star preceding the leftmost att in (61b). In the raising infinitival we cannot tell whether att is in pre- or post-subject position, since the subject is empty, but we can in the Acl case, and I assume it is in Infl in the raising infinitival as well.
5. V-movement: an explanation

In Danish, Norwegian, and English the infinitive marker is obligatory:

(62)a. Han siges *(at) tale svensk flydende.  
    He is-said to speak Swedish fluently
b. Jon synes *(å) ha drukket vin. (Norw.)  
    J. seems to have drunk wine
c. John appears *(to) be a nice boy.

I follow Platzack (1986b) in taking raising infinitivals to be "real" clauses, with C and Infl, and I take this to be true of AcI constructions as well (this is indicated e.g. by their ability to function as the scope domain of negation and aspect). Platzack proposes the analysis (63) of the raising construction (62a) (irrelevant details omitted): c = phonetically empty C.

(63) Han; siges (S, c (S e; (I, (I at) tale ...)))

The trace is an anaphor, being bound by a non-operator. As such it must be bound in its GC, which is to say the trace must be governed by the matrix verb. This will make the matrix S the GC of the trace. Furthermore, by the ECP the trace must be properly governed. Platzack proposes that it is (properly) governed just in case C is empty, as in (63b). On the other hand, in the case of control infinitivals an empty C must be capable of blocking government of the embedded subject position by a higher verb, in order to protect PRO from being governed. In section 6 a theory will be developed of empty X^8 categories from which it will follow that the empty complementizer can optionally block government from outside its clause. (63b) is then well-formed provided the option of not blocking government by the matrix verb across S' and S is chosen.

Danish does not have the AcI construction, nor does Norwegian (except marginally with the verb anse "consider"), but English does, of course. By standard assumptions the bracketing is as shown in (64), i.e. the AcI construction is an embedded clause (cf. below section 6.8.2).

(64) I believe (John to be a spy).

In this construction, too, the embedded subject position must be governed, to satisfy the Case Filter. On the other hand the construction has to, indicating the presence of Infl. By (54) this entails that there is also C. The structure of (64) is then (65):

(65) I believe (S, c (S John (I, (I to ) be a spy )))
The empty C does not block government of the embedded subject position by the matrix Case-assigning verb, hence the Case Filter will be satisfied. The obligatory insertion of to is explained as follows: if to is not inserted, Infl will be (+V) by default (in fact it will presumably be filled by be, in this construction). By (41) c will then also be (+V), and this is ruled out by the Argument Principle. I assume, fairly uncontroversially, that the AcI construction is an argument, like its finite congener.

In Icelandic, and, we assume, in Swedish there can be no V-to-I in raising and AcI constructions (cf. (53)). We can explain this as follows: C must be empty, to permit government of the embedded subject position the matrix verb, as required given the standard analysis of these constructions. If V-to-I applies, Infl will be (+V), hence by (41) (now assuming the rule that C is (−V) by default does not apply in infinitival constructions) the empty C will will also be (+V), violating the Predicate Principle. Icelandic and (standard) Swedish do not have any non-verbal element insertable in Infl, though. We may assume that Infl is just empty (permitted by the ECP since S is (properly) governed across the empty C), and hence (−V) by default — in which case C is (−V) as well — a welcome result if the raising and AcI constructions are arguments.

We are left with some uncertainty regarding the role of at in the Danish and Norwegian raising infinitivals. Why could Infl not simply be left empty, as in Icelandic and standard Swedish? It seems Danish and Norwegian need to have Infl lexically filled for some additional reason, not necessarily related to the functional principles. It seems that while Icelandic and Swedish can maintain a full clausal structure even though both C and Infl are phonetically empty, Danish and Norwegian require a lexical element in Infl to prevent the structure from collapsing into a small clause. The fact that the Infl-filler is optional in some Swedish dialects may indicate that the difference between on the one hand Icelandic and Swedish, on the other hand Danish and Norwegian is unrelated to the other differences discussed.

We are also left with some inconsistency regarding the categorial features of raising and AcI constructions: they will be (±V) in Danish, Norwegian, and English, by virtue of the preposition-like element in Infl, but (−V) in Icelandic and Swedish, by virtue of the default specification of Infl. But apart from these question marks, we have been able to explain a wide array of facts regarding infinitival constructions in the Scandinavian languages and English on the basis of the theory crucially incorporating the functional principles (13)–(15).
Footnotes to section 5

1. (4) is a flagrant counterexample, of course. We might dismiss it as not being part of core grammar, and hence not being a counterexample to Kayne's principles, taken to be core grammar principles. On the other hand it is typical of exclamations that they have "embedded clause form", not only in Swedish, but also in e.g. English and French. They seem to make up a class of exceptions to Kayne's principles.
   (i)a. Vad söt han är.
      what cute he is (i.e. "How cute he is.")
   b. What a fool I've been.
   c. Qu'elle est belle.
I do not have anything enlightening to say about this class of expressions.

2. On the other hand, assuming the Predicate Principle applies at the level where the structure is as in (21) we can explain (i) by the weak Predicate Principle:
(i)a. Han är dum.
   be is stupid
   b. Han är det.
   he is it (i.e. "So he is")
   c. Jag anser honom dum.
      I consider him stupid
   d. *Jag anser honom det.
      I consider him it
The Name det cannot be a predicate, without the help of a verbal copula. Incidentally (ii), where det has been fronted, seems more acceptable than (i):
(ii) ??Det anser jag honom.
This could be because of the marginal possibility of analyzing the trace of det as not being a Name (i.e. (¬V)), but as, say, (∀V,+N). Compare the French (iii):
(iii)a. Il est mort.
   b. Il l'est.
   c. Je croyais Pierre mort.
   d. *Je le croyais Pierre.
The structure of (d) is roughly (iv). Apparently the trace of a Name (such as the clitic le) can only be a Name in French. (iv) will then be ruled out as a violation of the Predicate Principle (weak as well as strong formulation).
(iv) Je le1 croyait (Pierre e1).

3. This sort of theory is advocated in Taraldsen(1986a), who uses it to account for constructions such as (i), found in certain Norwegian dialects:
(i)a. Ka du sa?
   what you said (i.e. "What did you say?")
   b. Kem som kom?
   who that came ("Who came?")
In the dialects Taraldsen discusses the construction is possible only with bare wh-words, not complex ones. Taraldsen proposes that main clauses are predicates with respect to the Predicate Principle specifically when the XP-position is filled by an "argument", where not only NPs and clauses but also PPs and APs are, or may be "arguments" (all categories which are not (+V), in our terms). Bare wh-words would, however, not be "arguments" in this dialect but "pure" operators (while complex wh-expressions would be "arguments"). Hence the Predicate Principle does not rule out (i). Cf. also Afarli (1986), who accounts for the variation between standard and dialectal Norwegian with respect to (ia,b) in terms of a difference in the feature composition of som (assumed to be covertly present also in (ia)): in standard Norwegian som would be (−V), and in dialect (=%V). A (−V) main clause would, but a (%V) main clause would not violate the functional principles, according to Afarli, assuming basically the weak formulation of the functional principles.

However, if we adopt Taraldsen's idea that a (bare) wh-phrase does not count as an argument in the dialects in question, and that hence the main clause is not a predicate w.r.t. the functional principles, then we may assume som is (%V) in standard as well as in dialectal Norwegian and yet maintain the strong Predicate Principle: (%V) som will permit (+V) to percolate to S' when required to satisfy the Predicate Principle. In the dialects in question it will not be required when the XP-position is filled with a (bare) wh-phrase (just how bare the wh-phrase must be is subject to dialectal variation; cf. Nordgård (1986)).

4. French has V-to-C in certain constructions where the subject is a clitic pronoun; cf. Kayne (1983a).

5. Thráinsson (1986a: fn. 4) contests the hypothesis that infinitive að is a complementizer, on the basis of the following contrasts:

(i) a. Eg lofaði allt af (að gera aldrei neitt).
   *I promised always to do never anything
   "I always promised never to do anything."

   b. Eg lofaði allt af (aldrei að gera neitt).

(ii) a. Eg lofaði allt af (að íg skyldi aldrei gera neitt).
   that I would never do anything

   b. *Eg lofaði allt af (aldrei að íg skyldi/skyldi eog gera neitt)

The normal word order of a control infinitival is (ia), but (ib) is also possible when there is emphasis on the adverb, according to Thráinsson. In the finite embedded clause the adverb may not be fronted to a position preceding að. However it appears that (ib) is so marginal ("at least ??" according to my informant) that no conclusions regarding core grammar can be drawn from it.

6. The idea that C and Infl are interdependent might seem to favour the idea that C is "a specifier of Infl", rather than a head selecting Infl. However, as already noted, once C is lexically filled it is no longer "the same category as Infl", but acquires the status of an independent category, which may well be assumed to select a complement the way heads do. It should be noted that the infinitival complementizers
að and att in Icelandic and Swedish, respectively, although they are homographs of the finite clause complementizers, do not have the same properties as these. In particular, we know they do not govern the subject position, since they permit PRO. Quite plausibly they are not heads in the sense of selecting values of Infl, hence governing S/Infl, but rather are dependent on Infl just like empty C in Danish, Norwegian and English.

7. Although the infinitival marker is a homograph of the finite clause complementizer in Danish, Swedish, and Icelandic, this is largely an orthographic convention. In all but slow and formal speech the pronunciation of the infinitival marker is not the same as that of the complementizer. For instance in Swedish infinitival att is pronounced /o/, while the finite clause complementizer is pronounced /at/. The infinitival marker is commonly assumed to be historically derived from a preposition.

8. It is not obvious that the relation in (55b) is characterizable as "modification" the way the relation in (55a) is. Simplifying the ideas in Chierchia(1985) we may say that while (55a) ascribes the property of being drunk to John in the (actual) world where John saw the movie, (55b) ascribes the property of leaving to John in the world of John's wishes.

9. (58c) is (marginally) acceptable for instance in the context "Oh God! ..."; cf. Kayne(1981c). (58d) is not improved in that type of context: ?Please God, let John not write the essay. With make the judgements are reversed, so that (58c) with make is quite unacceptable, while (58d) is acceptable — which indicates that semantics plays an important role for the acceptability ratings of these constructions.