6. Object Shift and the theory of empty lexical heads

6.1. Introduction

Consider the Swedish examples (1a,b), exemplifying a rule operating in all the Scandinavian languages. The rule moves an object leftwards under certain conditions, to be investigated in detail in this section.

(1a) Varför läste studenterna inte alla v den?
     why read the students not all it
     "Why didn’t all the students read it?"

b. Varför läste studenterna den inte alla v e? 

I shall refer to this rule as Object Shift. The name is misleading in the sense that the NP need not actually be an object, it may also be the subject of a small clause. The properties of this rule have not hitherto been adequately described, much less explained (earlier attempts include Faarlund(1977), Andersson(1977), Holmberg(1984b, 1985b)). It will be argued here that the rule is an instance of Move α, which is to say that all its properties follow from general principles of grammar, once certain parameters are fixed for the languages in question. The properties that need to be explained are the following:

First, the rule does not apply unless the object NP and S-adv are "phonetically adjacent". Compare (1) and (2): in (2) the main verb remains in situ, in (2a,b) because an auxiliary verb occupies C, blocking V-to-C of the main verb, in (2c,d) because a complementizer occupies C, blocking V-to-C. In both cases Object Shift is blocked.

(2a) Varför har studenterna inte alla v läst den.
     why have the students not all read it

b. *Varför har studenterna den inte alla v läst?

c. ...att studenterna inte alla läste den.

d. *...att studenterna den inte alla läste.

(3) shows that a (non-empty) preposition governing the object position blocks Object Shift:

(3a) Jag tror inte på det.
     I believe not in it
     "I don’t believe it."

b. *Jag tror det inte på.
(4) shows that a verb–particle left behind by V-to-C also blocks Object Shift, in Swedish, though not in the other Scandinavian languages:

(4)a. Jag skrev faktiskt upp det. (Swedish)  
   *I wrote actually up it  
   "I actually wrote it down."
   b. *Jag skrev det faktiskt upp.
   d. Jeg skrev det faktisk op. (Danish)

This difference between Swedish and the other Scandinavian languages is related to the fact that the verb particle precedes the object position in Swedish but not in the other languages.

(5)a. Jag skrev upp det /*det upp. (Swedish)  
   *I wrote up it
   b. Jeg skrev *op det /det op. (Danish)

Hence in e.g. Danish the particle will not intervene between S-adv and the launching site of Object Shift. Finally (6) shows that an indirect object preceding the launching site also blocks Object Shift.

(6)a. (?)Jag gav slutlingen Sara den.  
   *I gave finally Sara it
   b. *Jag gav den slutlingen Sara.

The second property in need of explanation is that Object Shift applies only to weakly stressed and unexpanded pronouns in the mainland Scandinavian languages, but to all NPs in Icelandic (provided they are not very heavy). Compare the Swedish (7) and the Icelandic (8).

(7)a. Varför läste studenterna inte alla artikeln?  
   *why read the students not all the article
   b. *Varför läste studenterna artikeln inte alla?
   c. Gudrun känner inte er två  
      *G. knows not you two
   d. *Gudrun känner er två inte.

(8)a. Hvers vegna lasu studentarnir ekki allir greinina?  
   *why read the students not all the article
   b. Hvers vegna lasu studentarnir greinina ekki allir.
   c. Guðrún þekkir ekki ykkur tvo.  
      *G. knows not you two
   d. Guðrún þekkir ykkur tvo ekki.

Third, in the mainland Scandinavian languages the rule preferably should
apply when it can (subject to some dialectal and/or idiolectal variation). Thus (1a) is well formed if the object pronoun is stressed, because in that case Object Shift cannot apply. It is unpreferred if the pronoun is weakly stressed. In Icelandic the rule is (near-) obligatory if the object is a weak pronoun, optional otherwise.

We shall begin by establishing that Object Shift is a syntactic rule, not a phonological-stylistic rule (a rule of PF). We shall then consider Object Shift in relation to the binding theory. It will be shown that the trace of Object Shift exhibits all the characteristics of an anaphor, which, given that the antecedent is not in an argument position, lends support to the contextual definitions of ECs based on inherent properties of the binder.

We shall then look closer at the "phonetic adjacency condition". It will be shown that it can be explained by the assumption that empty heads never assign Case obligatorily. I will then outline a theory of empty lexical heads from which this property of empty heads follows as a consequence. The theory will be shown to explain properties of other instances of empty lexical heads, including empty complementizers (empty that/att, for, etc.), empty prepositions (in e.g. the double object construction), empty nouns, the Swedish empty auxiliary ha, etc.

We shall then consider a number of other structures ruled out by the phonetic adjacency condition, including cases like (4) and (6), and we shall consider some consequences for the analysis of the particle construction and the double object construction. We shall then turn to the question why Object Shift applies only to pronouns in Swedish, Danish, and Norwegian, but to all NPs in Icelandic. It will be related to the fact that only pronouns have morphological Case-marking in the mainland Scandinavian languages, while all nominals have morphological Case in Icelandic.

Object Shift in Icelandic will be considered in a bit more detail. It will be shown that all its properties are predicted given the theory of Icelandic sentence structure outlined in section 4. A putative case of Raising to Object, a rule which is incompatible with the principles of GB theory, will be shown to be a case of Object Shift, hence not a problem for GB theory. A comparison with an Object Shift-like phenomenon in Dutch will be seen to have consequences for the typology of ECs.

Finally the (near-) obligatory nature of Object Shift of pronouns will be explained by the assumption that the moved elements are like clitics in not being permitted in argument positions. This will be shown to have consequences for the typology of nominal categories.

6.2. Object Shift is syntactic

The fact that the rule is sensitive to the presence of phonetic features suggests that the rule may be a phonological-stylistic rule, mapping s-structure onto PF -- possibly a local transformation which inverts two
phonetically adjacent categories. In this section it will be shown that this is not the case.

There is at least one case where Object Shift feeds a syntactic, pre-s-structure rule. This immediately disqualifies Object Shift as a rule of the PF component.

Swedish has a handful of so called transitive adjectives, that is adjectives which take an NP complement without a preposition (cf. Platzack(1982c)). For most of these adjectives the complement NP may either precede or follow the adjective.

(8)a. Hunden var tillgivna sin husse.
    the dog was devoted (to) its master
b. Hunden var sin husse tillgiven.

I assume, provisionally, that the AP in (8b) has the structure in (9): the NP is moved from post-head position, adjoining to AP:

(9) \( \text{AP}^{NP} \text{AP} \text{A} \text{e}_i \)

One alternative is that adjectives like tillgiven may take a complement to the left or to the right, the structure of the AP in (8b) being simply (10)

(10) \( \text{AP}^\text{A} \text{NP} \text{A} \)

In that case transitive adjectives would be the one and only exception to the generalization that heads precede their complements in Swedish. A third alternative is that the object in (8b) is outside the AP. This analysis can be shown to be incorrect: The preposed NP and the adjective can be topicalized or left-dislocated together. Since only one constituent may be topicalized in Swedish, the NP and the adjective must form a constituent.

(11) Sin husse tillgivna (det) var den verkligen.
    its master devoted it was it truly

Now if the pre-head NP is a weakly stressed pronoun it may undergo Object Shift:

(12)a. Hundarna var alla honom tillgivna.
    the dogs were all him devoted
b. Hundarna var honom alla tillgivna.
c. Hundarna var honom alla \( \text{AP} \text{e}_i \text{AP}^\text{tillgivna} \text{e}_i \)
Unless the quantifier alla can float down into AP, the structure of the relevant portion of (12b) should be (12c). Several facts indicate that the quantifier is not inside AP, but that instead the NP has moved out of AP. First, the string (13), which could be analyzed as indicated, is ill formed: a floated quantifier can only be adjoined to I', in Swedish.

(13)a. Hundarna har varit \[\text{AP alla snälla}.\]
    the dogs have been all nice

Second, if the object NP is not a pronoun the word order of (12a) is unacceptable, as predicted if Object Shift is involved.

(14)a. ?Hundarna var alla Erik tillgivna.\(^1\)
    the dogs were all E. devoted

b. *Hundarna var Erik alla tillgivna.

Third, and at present more important, the AP can be topocalized, leaving behind the object NP and the quantifier:

(15) Tillgivna var dom honom alla.
    devoted were they him all
    "Devoted to him they all were."

By standard assumptions only maximal categories can be topocalized, which means that the object and the quantifier must be outside the AP when topocalization applies. The structure of (15) should be roughly (16):

(16) \[\big(\text{AP e}_1 \text{ (tillgivna e}_1 \big) \big)\] (s', var dom honom alla e\(_1\) )

The structure obviously violates the binding theory at s-structure. We have to assume a "reconstruction rule" applies in LF, putting back the topocalized AP in the position of its trace, so that e can be properly bound, and the binding principles satisfied. Such a rule must be assumed anyway to account for, among other things, cases of topocalized anaphors: cf. Longobardi(1985).

Now since topocalization in general, including AP-topocalization, uncontroversially applies before s-structure, (15) provides ample evidence that Object Shift applies before s-structure, since it feeds topocalization in (15).

We conclude that Object Shift applies in the syntax. The conclusion is strengthened when we consider Object Shift in relation to the binding theory. As will be shown in the next section the output of Object Shift is subject to the principles of the binding theory, which apply in s-structure and/or in LF.

Let us at this point give a more precise description of the structure in
which Object Shift has applied. The landing site is between the subject and S-adv, as can be observed in structures in which the subject remains in situ, and which contain S-adv, e.g. (17):

(17)a. Köpte Johan inte den?
   bought J. not it
   "Didn't Johan buy it?"
   b. Köpte Johan den inte?

The object cannot move across the subject.

(18) *Köpte den Johan inte.

Presumably the landing site of the object is the same in a subject-first declarative like (19), although this is not directly observable in this case, since the subject has moved to the XP-position.

(19) Johan köpte den inte.

Given binary branching the shifted object can only be adjoined to I'. The precise structure of (17b) will then be (20):

(20) (S,köpte (S-Johan (I,den (I,inte (I,v e1 ))))))

6.3. Object Shift and the binding theory

In LGB(330) Chomsky proposes to define traces according to the sort of binding relation they enter into, as follows:

(21)a. α is a variable iff it is locally A-bar-bound and in an A-position.
   b. If α is an EC and not a variable, then it is an anaphor.

where "A-bar-bound" is = "bound from an A-bar (i.e. non-argument) position". Throughout this work we have, however, assumed the contextual definitions proposed by Taraldsen(1986b):

(22)a. A trace t is a variable iff t is locally operator-bound.
   b. A trace t is an anaphor iff t is locally non-operator-bound.

Object Shift is movement to an A-bar-position. Hence according to the definitions (21) the trace of Object Shift should be a variable. In Chomsky(1982)
it is recognized that there are cases of ECs whose local antecedent is in an A-bar-position, but which nevertheless are not variables. In particular the EC bound by a clitic (in e.g. Italian) does not have the properties of a variable. For instance, it does not license a parasitic gap (cf. Chomsky (1982: 64ff.)). Kayne (1983a) notes that a clitic must be within the governing category of the EC it binds, as expected if the EC is an anaphor. He therefore suggests that inherent properties of the local binder, not its structural position is what matters. Taraldsen (1986b) reaches the same conclusion on the basis of other facts. As we shall see shortly the trace left by Object Shift has all the properties associated with anaphors, none of the properties associated with variables. This is predicted given the definitions (22), but not given the predictions (21). As discussed earlier, in section 4.4.5, the definitions (22) require a definition of "operator" picking out not only inherent operators like wh-phrases and quantifiers, but also topological and focused categories as operators, since traces locally bound by such categories have the properties of variables. The NP moved by Object Shift is neither an inherent operator nor is it focused, so it is clearly a non-operator, and the trace locally bound by it hence a anaphor, by the definitions (22). Thus Object Shift provides another argument in favour of contextual definitions of traces in terms of inherent properties rather than the structural position, of the local binder.

If the trace left by Object Shift is an anaphor we expect it to exhibit the following cluster of properties:

(23)1. It lacks Case,
   2. it must be bound in its governing category,
   3. it does not license a parasitic gap, and
   4. it is insensitive to cross-over.

We shall devote section 6.4 to showing that the trace of Object Shift does not have Case. As for the second property the following facts are evidence that it holds of the trace of Object Shift:

(24)a. Eva anser honom möjligen vara inkompetent.

   E. considers him possibly (to) be incompetent

b. Eva anser han möjligen är inkompetent.

   E. considers he possibly is incompetent

(24a) is ambiguous: the S-adv may have scope over the whole sentence ("Possibly Eva considers him to be incompetent") or over the complement only ("Eva thinks that he is possibly incompetent"). (24b) only has the narrow scope reading. Given the principle that an S-adv takes scope over the minimal clause dominating it, it must be the case that the S-adv is outside the infinitival complement clause on the wide scope reading of (24a). In that case the subject of the complement clause, honom, must also be outside the complement clause.
Superficially this looks like a case of classical Raising to Object, and similar data from Icelandic have, indeed, been claimed to provide evidence of Raising to Object in this language. As will be discussed in more detail later (section 6.9.2) it is not a case of Raising to Object, but of Object Shift. The structure of (24a) on the wide scope reading will then be (25) (omitting irrelevant structure):

\[(25)\] \[\text{Eva}_1 \text{ anser} (\exists e_1 (I \text{ honom}_2 \text{ möjl}._\text{ v} (\exists c (\exists e_3 \text{ vara } \ldots )))\]

("c" represents an empty complementizer; cf. section 5.6.4 on the structure of the AcI construction.) It is not essential here that we assume this analysis rather than the more standard one according to which the AcI construction is a reduced clause, lacking C, as in e.g. LGB.)

(24b) only has the narrow scope reading. This implies that Object Shift cannot raise the subject of a finite clause, even when it is a weak pronoun and there is no overt complementizer in front of the subject. (24b) cannot have the structure (26), analogous with (25) except that the complement is finite.

\[(26)\] \[\text{Eva}_1 \text{ anser} (\exists e_1 (I \text{ han}_2 \text{ möjlagen v} (\exists c (\exists e_3 \text{ är } \ldots ))))\]

(27) shows that the subject of a finite complement of anse may be a wh-trace:

\[(27)\] \[\text{Vem}_1 \text{ anser du} (\exists e_1 \text{ är inkompetent})?\]

\[\text{Who consider you is incompetent}\]

\[\text{"Who do you think is incompetent?"}\]

(28) shows that it cannot be an NP-trace, as in the passive construction:

\[(28)\] \[\text{*Han}_1 \text{ anser} (\exists e_1 \text{ är inkompetent}).\]

\[\text{he is-considered is incompetent}\]

(29) shows that it can be an NP-trace if the complement clause is infinitival:

\[(29)\] \[\text{Han}_1 \text{ anser} (\exists e_1 \text{ vara inkompetent}).\]

That is to say, Object Shift patterns with NP-movement, not with wh-movement, as expected if the trace of Object Shift is an anaphor. (26), like (28), violates principle A of the binding theory, repeated here:

\[(30)\] \[\text{Principle A: An anaphor is bound in its governing category (GC).}\]

The GC of the subject of a finite clause is that clause, more precisely the finite S', containing C governing the subject (where C may be empty, as in (26))
and Agr (cf. section 2.6, including fn. 12). The trace e₁ in (26) is not bound in the embedded S', hence the violation of Principle A. The GC of e₁ in (25) is not the embedded S', since although it contains c, it does not contain Agr. Instead the GC of e₁ in (25) is the matrix S, and of course e₁ is bound in the matrix S.

We conclude that the trace of Object Shift behaves like an anaphor with respect to the binding principles. It behaves like an anaphor also with respect to parasitic gaps. The EC e in (32a), below, is an example of a parasitic gap. A parasitic gap e is licensed if

(31)a. it has a binder α which also binds a "real gap" t,
   b. t does not c-command e and conversely,
   c. t and e are both variables (cf. Chomsky (1982: 66))²

What is important in the present connection is that the real gap must be a variable: anaphor ECs do not license parasitic gaps. As shown by (32) the trace of Object Shift, in (32c), patterns with NP-trace, in (32b), not with wh-trace, in (32a), with regard to parasitic gaps, as expected if it is an anaphor:

(32)a. Vilken artikel kastade dom t, innan du hade läst e?
   which article threw they before you had read
   "Which article did they throw away before you had read?"
   b. *Artikeln kastades t, innan jag hade läst e.
      the article was-thrown before I had read
   c. *Jag kastade den inte t, innan jag hade läst e.
      I threw it not before I had read

It might be argued that den in (32c) does not c-command e, and hence does not bind it — that is if the adjunct clause is adjoined to S, not to VP or I'. Some adjunct clauses may, somewhat marginally, be left-adjointed to I'. This is the position of the adjunct clause in (33), as seen from the word order in the embedded clause structure. The word order in (33b) is the result of V-to-C and XP-fronting of the subject.

(33)a. att Olof, så snart han var färdig, kastade artikeln i
   that O. as soon as he was finished threw the article in
   papperskorgen.
   the waste paper basket
   b. Olof kastade, så snart han var färdig, artikeln i pappers-
      korgen.

In (34) an object has been shifted around such an adjunct clause containing a parasitic gap.

(34) *Olof kastade den, så snart han hade läst e, t i...
There can be no doubt that the shifted object c-commands the parasitic gap in (34), and that the conditions (31a,b) on parasitic gaps are satisfied. Yet the structure is ill formed, from which we can infer that condition (31c) is not satisfied: the trace of Object Shift is not a variable.

Anaphors and variables are furthermore distinguished by their behaviour with respect to cross-over: only variable-binding is subject to the "cross-over constraint" (cf. Koopman and Sportiche(1982)). Consider the contrast between (34a,b):

(34)a. Dom tilldelade honom; i hans; frånvaro priset.
          they awarded him in his absence the price
b.  ?Ve; tilldelade dom i hans; frånvaro priset.
          who awarded they in his absence the price

The phrase i hans frånvaro is left-adjointed to I', as shown by the word order in the embedded clause structure (35):

(35)a. om dom i min frånvaro tilldelade honom priset.
          if they in my absence awarded him the price
b.  *om dom tilldelade i min frånvaro honom priset.
               (om dom tilldelade i min frånvaro honom priset)
c.  *om dom tilldelade honom i min frånvaro priset.

Hence (34a) is derived by Object Shift. The result is perfectly well formed, as expected if the trace is an anaphor. (34b) is marginal, due to the violation of weak cross-over. If the index on hans in (34b) is k ≠ i the sentence is perfect. The structures of (34a,b) are respectively (36a,b) (omitting irrelevant structure):

(36)a. ... (I'honom; (I'i hans; frånvaro (I'v e; priset)))
      b. Ve; tilldelade (S dom (I'i hans; frånv. (I'y e; priset)))

An additional test for variablehood vs. anaphorhood is provided by the fact that an expletive element cannot bind a variable, as discussed by Taraldsen(1986b), while it may bind an anaphor; see above section 4.4.5. Consider the contrast between (37a), where an expletive pronoun has been raised to subject position, and (37b) where an expletive has been topicalized. As shown by (37c) the category shifted by Object Shift may be an expletive pronoun.

(37)a. Det; sågs ( e; sita katter uppe i trädet).
          there were-seen sit cats up in the tree
          "There were seen cats sitting in the tree."
b.  *Det; såg vi ( e; sita en katt uppe i trädet).
6. Object Shift

6.4. A first look at the phonetic adjacency condition

Having established that Object Shift is syntactic, and that the trace left by Object Shift is an anaphor in the sense of the binding theory, we can now proceed to an explanation of the phonetic adjacency condition on Object Shift, a condition which may seem odd for a syntactic rule. Why is (38a) \(=\) (2d) ill formed with the analysis (38b), i.e. as the output of Object Shift?

(38a) *att studenterna den inte läste

\(that \ the \ students \ it \ not \ read\)

b. att \(S\) studenterna \(i,\) den\(i\) \(i,\) inte \(i,\) läste \(e,\) )))

By the definition (22b) \(e,\) in (38b) is an anaphor. However, by principle (39), the "Case Filter", it is the head of a chain, being Case-marked by the verb läsa.

(39) All and only heads of chains have Case, except if they are PRO.

Being the head of a chain \(e,\) cannot be an anaphor = a non-head member of a chain: anaphoric traces are by definition non-operator-bound, i.e. "A-bound", hence they are non-head members of chains (cf. section 2, (25)). Being empty \(e,\) in (38b) must be operator-bound, which it is not in (38b). Hence the structure is ill formed: the chain \(den, e,\) cannot be formed, so there are two chains, \(den,\) and \(e,\) where the former one has no \(\theta\)-role, not being linked to a \(\theta\)-position, and the latter is effectively an unbound variable: an empty head of chain without an operator to bind it.

(40) \(=\) (2b) is ill formed for the same reason:

(40a) *Vårfor har studenterna den inte läst?

\(why \ have \ the \ students \ it \ not \ read\)
b. Varför har \( _S \text{stud.} ( _I \text{deni} ( _I \text{inte} ( _I \text{v ( \&p läst e i )}))) \)

It must be the case, then, that in (41) = (1b), a well formed case of Object Shift, the trace is not Case-marked.

(41)a. Varför läste studenterna den inte?
   b. Varför läste \( _S \text{studenterna} ( _I \text{deni} ( _I \text{inte} ( _I \text{v e i }))) \)

The only difference is that the verb governing the trace is empty in (41b), non-empty in (38b, 40b). Apparently the absence of phonetic features means that the verb does not assign Case to its object. But in cases like (42a,b) we have to assume \( v \), the phonetically empty verb, does assign Case to its object.

(42)a. Varför läste studenterna inte \( v \) boken?
   b. \( \text{Vilken bok} \) läste studenterna inte \( v \) e i ?

I now propose that \( v \) assigns Case only optionally, while a non-empty transitive verb assigns Case obligatorily. Hence (41) has a well formed analysis, that is when \( v \) chooses not to assign Case to its object. (42a,b) also have well formed analyses, that is when \( v \) chooses to assign Case to its object, while (38, 40) do not have well formed analyses, since the non-empty verb assigns Case obligatorily.

In the next section the hypothesis that \( v \) assigns Case only optionally will be embedded in a general theory of empty lexical categories.

6.5. A theory of empty lexical heads

6.5.1. The visibility conditions for empty heads

Generally speaking UG must somehow constrain the distribution of empty Case-assigners if Case theory is not to be vacuous. If e.g. empty prepositions and empty Case-assigning complementizers could always assign Case there would be no obvious way to rule out destruction the city with an empty preposition corresponding to of assigning Case to the city, or John to win is unlikely with an empty complementizer corresponding to for assigning Case to John \(( p = \text{empty P, c = empty C})\).

(43)a. destruction \(( p \text{ the city})\)
   b. \(( c \text{ (John to win)})\) is unlikely

If empty prepositions and empty complementizers cannot assign Case, (43a,b) will be ruled out by the Case Filter. I propose the following principles:
(44) X can assign Case only if it is Case-visible

(where X is a variable ranging over the Case-assigning categories).

(45) A head is Case-visible if and only if
a. it has a phonetic matrix,
b. it is Case-marked, or
c. it is properly governed.

The core case is when the head has a phonetic matrix. Then and only then is
Case assignment obligatory, an automatic consequence of government by, or
coindexing with, the right sort of head. Phonetically empty heads, Case-visible
by virtue of (45b,c), assign Case optionally. This is ensured by the following
principle:

(46) A phonetically empty head can always remain invisible.

For example, v in (47) is visible by virtue of being properly governed by its
antecedent, the fronted verb in C:

\[(47) \text{S, köpte J, v boke} \]

\[\text{bought } \quad \text{the book} \]

By principle (46) it can choose to remain invisible, in which case, by (44), it
cannot assign Case -- an undesirable consequence in this case. But in (48) (=
(41)) it is a desirable consequence:

\[(48) \text{Varför läste } \text{studenterna } \]

In (43a) the preposition lacks a phonetic matrix, is not Case-marked (that is,
its projection PP is not in a Case-marked position) and is not properly
governed, if N is not a proper governor. Hence it cannot assign Case to its
complement NP. For the same reason the empty complementizer in (43b) cannot
assign Case to the subject NP.

The principles (44)-(46) have been phrased in terms of Case-visibility. I will
now propose a more general theory of "visibility" for empty lexical heads, of
which Case-visibility is a special case:

A head does basically the following things: (a) it defines a projection, i.e. its
features percolate, and, depending on its categorial properties it may (b)
θ-mark, Case-mark, and/or properly govern a category which it governs. I
assume an empty head needs to made visible somehow, to perform any of these
functions. However it appears to be the case that an empty head can be visible
for some functions but not for others. For instance, it must be the case that an
empty head can θ-mark a complement without assigning Case to it, although the corresponding overt category is a Case-assigner. In other words, an empty head can be "θ-visible" without being Case-visible. The empty verb in the Object Shift construction is precisely such a case: In for instance (47) the Projection Principle requires the verb trace to be visible for θ-role-assignment at all levels of representation, but as discussed the verb trace must not assign Case, i.e. it must remain Case-invisible. On the other hand I do not know of any cases where a θ-role-assigning and Case-assigning empty head would assign Case without assigning a θ-role. Notice, furthermore, that the verb trace in the Object Shift construction need not govern the object trace properly, as long as the antecedent is in a position where it will antecedent-govern the trace. The fact that the shifted object cannot move any further than to the I'-joined position -- cf. (49) (= (20)) -- indicates that the shifted object must antecedent-govern the trace.

(49) *Köpte den ( I, inte ( I', v e:)))

That is to say, it seems the verb trace cannot abstain from assigning Case, and still govern properly. This suggests that we have a "visibility hierarchy" such that visibility to govern properly ("PG-visibility") entails Case-visibility but not vice versa, and Case-visibility entails θ-visibility but not vice versa.

Furthermore it seems an empty head can be visible for feature percolation ("F-visible") without being θ-visible. Consider the case of empty nouns such as in expressions like (50a,b):

(50)a. Mary's are bigger.
   b. I don't like Sarah's.
   c. Peter's I can't stand.

The structure of Mary's in (50a) I assume is (51) (cf. section 2.4 on the genitive):4 (n = empty N):

(51) ( NP Mary ( NP s ( N', n )))

In this structure the empty noun need not assign a θ-role. The specifier Mary does not, or need not have a role determined (= assigned) by the head noun, but rather it may have the unspecified role typical of the "argument" of non-θ-role assigning nouns like book, telephone, child, etc.; Mary in Mary's book may refer to the writer of the book, the owner of the book, someone talking about the book, etc.: the role is specified only in the context of discourse. There is necessarily some relation between Mary and the book, but it is not a specific θ-role relation (the relation, following J.Higginbotham, is often called "the relation R"). That is to say, the empty noun in (50) is F-visible, defining the categorial status of the phrase also containing Mary's, and receiving Case
(from Agr) and θ-role (from bigger).
   Consider now the cases in (52):

(52)a. ??I didn't mind Rome's destruction but Cairo's upset me.

   b. ??We've read everything about America's discovery by Columbus, but
      nothing about Scandinavia's by Ibn Battouta.

The nouns destruction and discovery do take "real" arguments, assigned "real" θ-roles. Now it seems that the empty nouns in (Cairo's n) and ((Scandinavia's n ) by Ibn Battouta) are not capable of assigning a θ-role to Cairo and Scandinavia, respectively: they are F-visible but not θ-visible. (Since N does not assign Case and (by hypothesis; cf. fn. 3) does not govern properly we cannot confirm that θ-invisibility entails PG- and Case-invisibility, as I suggested above.)

I do not have any ready explanation why empty N, as in (51a,b) is not θ-visible. Consider, however, the fact that the empty N need not occur in a properly governed or Case-marked position (that is, the phrase it heads need not occur in a properly governed or Case-marked position) to be licit, in other words, to be F-visible. Consider in particular (50c): the NP containing the empty head noun is topicalized -- clearly not a properly governed or Case-marked position (except if Case and proper government can be "inherited" from the trace). This suggests that the contextual conditions that have to be met for an empty head to be F-visible are less strict than those that have to be met for a category to be θ-visible, Case-visible, and PG-visible.

On the basis of these, admittedly rather scant, facts I now propose the following "visibility hierarchy", where "<" = "less constrained than":

(53)  F-visible < θ-visible < Case-visible < PG-visible

I assume a phonetically empty head can choose to remain invisible with respect to any of the functions it can perform, but not to any function lower on the visibility hierarchy (53) than the lowest visible function. For instance, if a head chooses to remain Case-invisible, it can still be θ-visible and F-visible, but not PG-visible. If a head chooses to be θ-invisible it can still be F-visible, but it cannot be Case-visible or PG-visible. If a head chooses to be F-invisible, it cannot be visible for any other function. In fact, possibly an F-invisible head is = a non-existing head. This is not obviously true: there may be a sense in which a head can be present in a structure, in the sense of, for instance, blocking insertion of some other head in a position, without actually projecting any features up the tree; Pesetsky (1985) suggests there may be such empty categories in word structure.

In the following subsections I will discuss a number of cases of empty heads, showing that the theory sketched predicts correctly their distribution and behaviour.
6.5.2. Empty prepositions

Basically following Kayne (1984: ch.9) I assume the double object construction in English involves an empty preposition governing, and assigning Case to the indirect object; cf. end of section 2.9. The structure of *John gave Mary a book* would be roughly (54):

(54) \[ \text{John} \left( v_p \text{ gave } (\text{SC } (\text{pp } \text{ p Mary) a book})) \right) \]

The two objects form a small clause, the subject of which is a PP headed by an empty preposition. As evidence that the indirect object in the double object construction is embedded in a PP, consider the fact (noted by Kayne (1984: ch.9)) that the indirect object cannot be moved rightwards (Heavy NP Shift):

(55) *John gave e a book the girl with heavy eyelashes.

You cannot move the object of a PP rightwards:

(56) *John spoke to e of his troubles just about everyone who asked.

Hence if the indirect object is embedded in a PP, the same principle which rules out (55) will rule out (56).

Kayne (1984: ch.9) proposes the following principle:

(57) An empty preposition cannot be the source of Case.

Consequently the source of the Case assigned to the indirect object must be the verb. The verb, according to Kayne, assigns objective Case to the PP, this Case trickles down to the head of the PP, the empty preposition, which, although it cannot assign Case on its own, is able to transmit Case to its object. It follows that the preposition cannot be empty in the alternative construction (58):

(58) John gave a book *(to) Mary.

In this construction the verb does not govern the PP. The structure being roughly (59):

(59) \[ \text{John} \left( v_p (v, \text{ gave a book) to Mary} \right) \]

In the present theory we do not need (57) as an independent principle. Case assignment to the indirect object is ensured by the Case-visibility principles
(44) and (45): the empty preposition must be either properly governed or Case-marked in order to assign Case. I propose the empty preposition is Case-visible by virtue of being properly governed, not by virtue of being Case-marked. This enables us to maintain as a principle that a category can assign at most one structural Case -- a principle which I think is well motivated (as discussed in Holmberg(1985a)), but which I will not try to motivate here. Give assigns its structural Case to the direct object, while the preposition, Case-visible by virtue of being properly governed, assigns Case to the indirect object. (Here I agree more with Czepluch(1982) than Kayne(1984:ch.9).)

(60a) would be allowed, with the analysis (60b), given that p may abstain from assigning Case. This would make the formation of the chain (John, e) possible:

(60a. John was given a book.

b. (S Johni was (vp given (sc pp p ei) a book)))

On the other hand, assuming the "visibility hierarchy" (53), p could not then govern ei properly. Furthermore (60b) would seem to violate the CED (cf. section 2.8): the subject PP is governed by given, but assigned a θ-role compositionally by give and the direct object (cf. section 2.9). However, provided that the empty preposition does not assign a θ-role, i.e. provided it is a dummy Case-marker, and provided it may abstain, and in this case should abstain from assigning Case, we may, in the spirit of Lasnik and Saito(1984), delete p, since it does not serve any purpose. Deleting p entails deleting the PP node. The structure will be (61):

(61) (S Johni was (vp given (sc ei a book)))

As evidence that p in the double object construction does not assign a θ-role, consider the following: In section 2.9 I mentioned the fact that many "semi-idioms" involving give or give-like verbs are incompatible with the give NP to NP construction:

(62a. give John the finger/ the eye/ the sack/ etc.

b. ??give the finger/ the eye/ the sack/ etc. to John

This, I suggest, is because the empty preposition involved in the double object construction give IO DO is a true dummy Case-marker, lacking any thematic content. Hence it permits assignment of the "idiomatic" role assigned by the predicates give the finger, give the eye, etc. The overt preposition to, on the other hand, assigns Goal to its object. The role assigned by the predicate formed by give and the direct object should be a "Goal-type" role, to be
compatible with the role assigned by to. Therefore to tends to block the idiom interpretation in (62b).

That is to say, the preposition to in the give NP to NP construction is not a dummy Case-marker. I believe, in fact, that there are very few true dummy Case-marking prepositions in English as well as in Swedish; cf. Marantz (1984), Zubizarreta (1985), Holmberg (1986) for some views on this issue. In a case such as the give-construction I take it that the preposition is required for reasons of Case, but there being no suitable dummy Case-marker a preposition which has a role compatible with that assigned by give NP is selected, namely to.

(63) is ill-formed. This is predicted: under the analysis (64a) it violates the CED, and under the analysis (64b) (analogous to (61), it violates the Case Filter: the trace must be assigned Case to function as a variable.

(63) ?*Who did you give a book?

(64)a. who did (S you (VP give (SC (PP p e1) a book)))

b. who did (S you (VP give (SC e1 a book)))

On the other hand, in e.g. Swedish (at least for many speakers) the construction corresponding to (63) is fully acceptable, even though the double object construction in Swedish in other respects is very similar to the English construction.

(65) Vem gav du en bok?

who gave you a book

"To whom did you give a book?"

Assuming the analysis of the double object construction is essentially the same in Swedish as in English we could hypothesize that the Swedish structure corresponding to (64a) can, somehow, avoid the effects of the CED. I leave this problem unresolved.

Another construction where an empty preposition may be involved is the transitive adjective construction, discussed in section 6.2.

(66) Erik var trogen sin hustru

E. was faithful his wife

As shown by (67a) the object of the adjective cannot be Heavy NP shifted. As shown by (67b) it can be wh-moved.

(67)a. ?*Erik var trognare e1 än en hund sin ragata till hustru

E. was more-faithful than a dog his shrew for a wife

b. Vem1 var Erik trogen e1?

who was E. faithful
This is predicted if the object of the transitive adjective is a PP: rightwards movement out of a PP is impossible, while leftwards movement out of a PP is possible in Swedish (and the other Scandinavian languages), in particular when the PP is governed, and in particular by wh-movement.

(68) *Johan gav e sin bok en av de nya studenterna.
    J. gave his book one of the new students

I therefore postulate the following structure for the transitive adjective construction:

(69) \[ \langle \text{AP} \ (\text{PP} \ p \ \text{NP}) \rangle \]

What makes the transitive adjectives different from other adjectives is, then, I propose, that they, unlike other adjectives, can govern properly.

The structure of the alternative construction where the object precedes the adjective would be (70):

(70) \[ \langle \text{AP} \ (\text{NP}_i \ \text{NP}) \rangle \]

The empty preposition may abstain from assigning Case, hence e can be an anaphor bound by the preposed object.

In support of this analysis of the transitive adjective construction we may note that for some of them there is an alternative construction with an overt preposition. In Icelandic, where there are many more transitive adjectives than in Swedish, most seem to have a counterpart with an overt preposition.

(71)a. Han var trogen (mot) sin hustru. (Swedish)
   he was faithful to his wife
   b. Hann er góður (við) börnumum. (Icelandic)
   he is good to the children

Several others are made up of a preposition and an adjectival stem, e.g. tillgiven "devoted" and överlägesen "superior", incorporating the prepositions till "to" and över "over", respectively. Conceivably they can be regarded as cases of "preposition incorporation", roughly along the lines of Baker(1985), where the incorporated preposition licenses an empty preposition governing the object, as shown in (72):

(72) \[ \langle \text{A} \ (\text{till}_i \ given) \ (\text{PP} \ e_i \text{NP}) \rangle \]
Preposing the object is not possible when the preposition is overt, as predicted, since the overt preposition assigns Case obligatorily, excluding the possibility of a chain headed by the preposed object, tailed by the EC in object position.

(73) *Han var *sin hustru trogen mot ei

It has been pointed out to me that (67a) is not as bad as (68); it may even be marginally acceptable. This is a potential problem for the analysis proposed here.

6.5.3. Empty for

Consider the following well known data:

(74)a. I want (*for) to win.
   b. I want (for) John to win.
   c. I want very much *(for) John to win.

If I want to win involves control of PRO, then there must be a complementizer heading the embedded clause, to prevent want from governing the subject position. The structure should be (75):

(75) I want \( \langle S, C \langle S \text{ PRO to win} \rangle \rangle \)

The natural candidate for this post is for, as for is found with want in cases like (74b,c). As seen in (74b,c) for can be empty when it is properly governed. In (74c) the embedded clause is not properly governed, since very much occupies the sister position (≠ the properly governed position) of want, and, as predicted by our theory, for must then be overt. But in (74a) we need a complementizer which will serve as a barrier to government from the matrix clause, but will not itself govern the subject position, since that would exclude PRO. Overt for cannot do this, but empty for can, by virtue of principle (46): It can be F-visible, i.e. it can be present, defining a projection S', thus creating a barrier to government from the matrix clause, but remain Case-invisible, and more generally invisible for government. Thus PRO will be ungoverned in S', and protected by the empty complementizer from being governed from outside S'.

In this context it will be well to consider another structure which I earlier claimed to involve an empty complementizer: As proposed in section 5.6.3 the clausal complement of seem and other raising predicates is a full clause, containing Infl and C. I suggested that the subject trace in a structure like (76) is licit since it can be properly governed by seem across the empty complementizer.
(76) Johni seems (S, c (S e_i to win))

The empty complementizer would then be F-visible without blocking government across it, while the empty for in (75) would be F-visible, and capable of blocking government. That is to say, we would have to somewhat complicate the "visibility hierarchy" (53) with yet another level of visibility. An alternative is that the seem-complement contains no C, but rather would be a projection of Infl. This entails giving up the principle that Infl and C always go together (cf. section 5.6), perhaps in favour of a principle to the effect that C cannot occur without Infl, but not necessarily vice versa; this would not require any major modification of the theory outlined in section 5.6).

Yet another possibility, compatible with our assumptions, is that the embedded subject is raised via the intermediate XP-position, as shown in (77):

(77) Johni seems (S"^t_i (S, c (S e_i to know Mary)))

Raising to subject would then be a close analogue of constructions such as Who did you say arrived late?, assumed to have the analysis (78):

(78) Who_i did you say (S"^t_i (S, c (S e_i arrived late)))

We shall return to this construction below. In both (77) and (78) the intermediate trace t governs the trace e properly, across c. The trace e is not assigned Case, since c may abstain from assigning Case. The crucial difference between (77) and (78) would be that in (77) the trace t is not assigned Case by seem (an intransitive verb), which makes possible formation of the chain (John, t, e). In (78) t is assigned Case, by say, hence it is the head of the chain (t, e).

This is fine, since t is bound by the operator who.

6.5.4. Empty that/att

Stowell(1981) notes with regard to the English complementizer that that it can be deleted (left empty) principally only when the clause it heads is properly governed.

(79)a. We couldn't believe (that) he was dead.
   b. *(That) he was dead was hard to believe.
   c. I thought, and so did Mary, *(that) he was dead.

The same is true of Swedish att:
Not only can the complementizer not be empty when the clause it heads is sentence-initial, as in the (b)-examples, but also when it is separated from the governing verb by, for instance, a parenthetical, as in the (c) examples. Stowell accounts for this by invoking the ECP: the empty C must be properly governed, which it is if its projection S' is properly governed.

I have two objections against Stowell's hypothesis. First, it presupposes that the ECP is a condition on empty heads, rather than on empty phrases: in (79b,c) and (80b,c) the embedded S' is not empty, only its head C is. If Stowell is right, a phonetically realized complement is not sufficient to save a phrasal category from the ECP if its head is empty. Stowell(1981) proposes that the ECP is, in fact, a condition on heads, not on phrases. This will make no empirical difference in cases of completely empty phrasal categories, such as traces of NP-movement, etc., but it will make a difference in cases like (79) and (80): if the ECP is a condition on heads, they will be ruled out by the ECP; if it is a condition on phrases, they will not be ruled out by the ECP, since the phrases in question, the embedded S', are not empty.

Consider again expressions such as (81):

(81)a. Mary's are bigger.
   b. I don't like Sarah's.
   c. Peter's I can't stand.

In expressions like Mary's, etc. the head N is empty, and the specifier is non-empty. As mentioned such elliptical NPs occur freely in completely ungoverned positions, such as the topic position in (81c). A totally empty NP is, of course, excluded in this position (in a language like English), or in the positions of Mary's and Sarah's in (81a,b) (except if they are appropriately bound). Apparently the non-empty specifier is sufficient to exempt the expressions from the ECP.6 If so, there is no obvious reason why the embedded clauses in (79) and (80) should not also be exempted from the ECP, by virtue of their phonetically realized complement. The idea that a non-empty non-head constituent is sufficient to exempt a phrase from the ECP is natural enough if we think of the ECP from a "functional" point of view: for empty categories to be licit in a structure it must be possible (a) to identify their position in the structure, and (b) to somehow recover their content. The condition that an EC should be properly governed ensures that its position will be identified. Something else will be required to ensure that the content is recovered,
typically a binder, in the case of empty NPs (cf. Bouchard (1984) for a theory of
the ECP along these lines). A non-empty specifier, as in (82), or a non-empty
complement, as in (79) and (80) will be sufficient to identify the position of the
phrase containing the empty head, with no need for the phrase to be properly
governed. We shall later see some other examples of how a phonetically realized
non-head constituent can make a phrase with an empty head visible for
grammatical processes.

The other objection to Stowell’s hypothesis is that it predicts the possibility
of empty that in cases like (83a,b) only if adjectives govern properly, and does
not predict it in cases like (83c,d).

(83)a. I’m glad (that) you came.
   b. John is positive (that) he won’t fail this time.
   c. It really was a surprise to him (that) he didn’t pass the first
time.
   d. It’s obvious to everyone (that) he will fail again.

It is not obviously true that adjectives (perhaps apart from transitive
adjectives) are proper governors (cf. section 2, fn. 11). Extraposed clauses are
counterexamples to Stowell if they are in adjunct position, not in complement
position. In (83c,d) they are clearly in adjunct position, being separated from
the head of the predicate by a PP.

The condition that empty that requires proper government seems too
strong. In the present framework the crucial requirement is that the empty
head must be made visible to perform certain functions. The level of visibility
which minimally must be achieved is F-visibility. Consider what will happen
unless the head C is F-visible in English: by principle (84) = (∗1) in section 5 C
will then be (+V).

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

If C is (+V) the clause will not be able to function as an argument, by virtue of
the Argument Principle, repeated here (cf. section 5):

(85) An argument is (-V).

The question is just what is required to ensure F-visibility. I suggested earlier
that the conditions may be less strict than in the case of e.g. Case-visibility. If
indeed F-visibility is all that is required for empty that the conditions seem to
be fairly strict even for F-visibility, judging from cases like (79c,d), where a
parenthetical expression or a PP intervening between the verb and the clause
blocks empty that. Cases like (83a,b) indicate that government is sufficient (it
need not be proper government). Cases like (83c,d) indicate that coindexation
with an expletive subject may be sufficient: the extraposed clauses are not
governed (given our definitions), but they must be in a Case-marked chain, which I assume they are by virtue of being coindexed (or "cosuperscripted") with the expletive subject (following Stowell(1981), among others). This coindexation seems to be sufficient to ensure F-visibility.

As mentioned Swedish patterns very much like English with respect to empty att. However, the same explanation cannot be extended to Swedish or the other Scandinavia languages without additional assumptions. The point is that in these languages C is (-V) by default, following the theory of the V2 phenomenon outlined in section 5. In fact this brings to light a weakness in the said theory: Why do these languages, where C is (-V) by default, ever need a complementizer like att if all that this complementizer does is provide S' with the feature (-V)? Presumably att includes some additional features, too, which need to made visible, perhaps in particular a feature distinguishing att from om "whether", call it (+/-WH); att would be (-WH), om (+WH). On the other hand, given a binary feature (+/-WH), (-WH) would seem to be the more natural default value. Given a trinary feature, as suggested in section 3, the natural default value would seem to be (%V), and in such a system att would be (%V). In either case the specification of att would be the default specification.

At this point I will introduce an addition to the Case theory hitherto assumed. In section 2.4 I proposed the following nominative Case rule, assumed to apply in English and the Scandinavian languages (and presumably many other languages):

(86) NP is nominative if coindexed with Infl.

I now propose the following addition to this rule, an addition which applies in English and (at least) the mainland Scandinavian languages:

(87) NP is nominative if governed by C marked (-N).

The finite clause complementizers would all be (-N). Complementizers such as French de and the Swedish complementizer att which heads infinitival clause will not be (-N). The idea that complementizers assign nominative Case is found in Stowell(1981) and Platzack(1986a,b), among other works. We know that some complementizers assign Case to the subject, e.g. English for, which assigns objective Case to the subject it governs. Another example is Arabic 'inna and 'anna, which assign accusative to the subject (interestingly the predicate, if it is nominal, will still be nominative).

(88) Dhakara 'anna alwalada mariišun.

he mentioned that the boy(ACC) (was) ill(NOM)

It is therefore not inconceivable that other complementizers assign nominative Case. Both Stowell and Platzack assume the finite clause
complementizers assign nominative Case by virtue of being marked (+Tns). I have (section 5.3.3) questioned the assumption that complementizers like *that* etc. are themselves defined by (+Tns). Instead I suggested that tense and mood features characterizing S' derive from InfI (as made possible by the convention PC2). I now suggest that the relevant complementizers are Case-assigners "inherently".

We still want to maintain the rule which assigns nominative Case by coindexation with InfI. In English ordinary declarative clauses C is empty, and could not possibly assign Case to the subject, neither by virtue of containing a complementizer nor by virtue of containing Agr. Nominative Case-marking by rule (86) seems to be the only alternative. In the Scandinavian languages we need rule (86) in particular in the case of subject-first main clauses where the subject is not a possible operator, that is where the fronted subject must be the head of a chain, as discussed in section 4.4.5, that is for instance in (90)

\[(90) \text{Det, måste (S, ei (I, v finnas råttor i källaren)) }
\]
\[\text{there must be rats in the cellar}\]

In a case like (91a) Case may be assigned to the subject from C (by coindexation with InfI, which accompanies the fronted verb *måste*). In (91b) it may be assigned by the complementizer.

\[(91)a. \text{I källaren måste (det v finnas råttor)}
\]
\[\text{b. att (det måste finnas råttor i källaren)}\]

Let us strengthen the condition that nominative Case can be assigned by C to the condition that it can only be assigned from C, never from InfI, at least in the mainland Scandinavian languages (Icelandic may be a different case: it differs from the mainland Scandinavian languages in having rich agreement, and hence conceivably differs from these languages in the way nominative is assigned.) One way of achieving this result is by postulating that Agr is in C, in these languages. It was pointed out earlier that the mainland Scandinavian languages have no overt subject-verb agreement at all. That is to say, insofar as they have Agr at all, it is a totally abstract element. I assume Agr is a universal element of finite clauses, but that particularly in a case such as the mainland Scandinavian languages where it is totally abstract, it may be situated in InfI or in C. (Cf. Taraldsen(1984) for a similar idea -- however, Taraldsen proposes that Swedish and Norwegian differ with respect to the position of Agr: in C in Swedish, but in InfI in Norwegian.) Hence nominative can never be assigned by coindexing InfI and the subject, in these languages.

This opens up the possibility of explaining V-to-C in terms of the Case Filter, as proposed in Platzack(1986a,b) and Koopman(1984): cf. section 5.2: In a main clause where V-to-C does not apply, leaving C empty, C will not be Case-visible, and nominative Case could not be assigned. This does not make
the Predicate Principle redundant in connection with V2: the Predicate Principle still provides the explanation why typically main clauses have V-to-C, while embedded clauses have complementizers.

This all means that an empty C in the mainland Scandinavian languages, as in (80), must be made Case-visible. Given (45) it must therefore be properly governed, or in a Case-marked position. (80b,c) will then be excluded, since the empty complementizer is not governed in either of them. In (92) the empty complementizer may be Case-visible by virtue of being coin-indexed with the nominative expletive, and in this sense "occurring in a Case-marked position". To be more precise, the extraposed clause is coin-indexed with the expletive, but since C is the head of the clause the index will trickle down to C, as shown in (92b).

(92a). Det var roligt för oss (att) du kunde komma.

  It was nice for us that you could come

b. Det var roligt för oss (c) du kunde komma)

Cases like (93) pose a problem for the present theory, though.

(93a). Peter är säker (att) han kommer att klara sej.

       P. is sure that he will succeed

c. Jag är glad (att) jag kom i tid.

       I am glad that I came on time

As noted by Platzack(1984a), if the complement of these adjectives is questioned or topicalized, a preposition must be inserted:

(94a). Vad är Peter säker *(på) en?

b. (Att jag kom i tid) är jag glad *(över) en.

This would be because the adjectives are not themselves Case-assigners, and apparently are not able to make an empty preposition Case-visible. This is incompatible with the possibility of deleting att in (93). I will leave this problem unresolved.

6.5.5. The that-trace effect

Consider next the well known contrast between (96a,b):

(96a). Who did you say that e saw you?

b. Who did you say e saw you?

A trace in subject position of an embedded finite clause is ruled out in English if the complementizer is present/overt, but accepted if the complementizer is
absent/covert. This so called that-trace effect is well known from other languages, too, including the Scandinavian ones, although there are exceptions to which we return below.

The standard explanation for the that-trace effect is in terms of the ECP: The subject position is not a properly governed position. Infl is at best a weak governor of the subject, and the complementizer, being a functional element, is also not a proper governor (cf. section 2.5). The subject could be properly antecedent-governed by an intermediate trace in C, but -- given the standard theory (e.g. LGB) according to which wh-movement goes to C -- this requires that the complementizer is deleted, since otherwise C will be branching, preventing the trace in C from governing the subject. Hence (97a) is ruled out by the ECP, but (97b) is not, since here e is properly governed by the trace t, and t is itself either properly governed by the matrix verb or properly antecedent-governed by the wh-phrase (the latter according to Lasnik and Saito(1984)).

(97a. \( \text{whi} \ldots (S', c ti \text{ that} ) (S e_1 \ldots ) \))

b. \( \text{whi} \ldots (S', c ti ) (S e_1 \ldots ) \)

However, I have argued that phrases moved out of S do not land in C but in the XP-position. This is at least always a possibility, although for instance in English wh-elements may ultimately end up in a position equivalent to C, through a restructuring process (cf. section 5.5). The structure that must be ruled out is thus (98):

(98) \( \text{whi} \ldots (S'' t_i (S', \text{that} (S e_1 \ldots )) \))

Within the present theory (98) will, indeed, be excluded, but not by the ECP. Given our definition of government in section 2.5, that, overt or not, will not prevent (proper) antecedent-government of e by t, because t is included in the projection of that. The relevant clause in the definition of government is clause (c), repeated here:

(99) \( \alpha \text{ governs } \beta \text{ if} \)

(c) \( \alpha \) and \( \beta \) are coindexed, \( \alpha \) c-commands \( \beta \), and \( \alpha \) is contained in the maximal projection of \( \gamma \), where \( \gamma \) lexically governs \( \beta \).

This definition ensures that the specifier antecedent-governs the trace in cases like the city's destruction \( e_i \), and that the shifted object antecedent-governs its trace in \( s \text{ag}...(\text{den} \text{ inte } v e_i) \). It also ensures that the specifier of C governs the subject trace (when C governs the subject), as in (98).
This is in line with Engdahl(1985). According to Engdahl the subject can always be (properly) antecedent-governed by a phrase in the XP-position. Indeed, this would be how the subject trace in an ordinary subject-first declarative is governed properly.

Hence (98) will be OK as far as the ECP is concerned, provided t is also properly governed. However (98) will violate the θ-criterion and the principle excluding unbound variables, given one auxiliary assumption, which is that nominative Case-marking by coindexation with Infl is always optional, in English. We can see this as a consequence of the fact that subject-verb agreement is so weak as to be nearly invisible in English: except for be, it only distinguishes between 3. person sg. and all other persons. In the (mainland) Scandinavian languages the auxiliary assumption is not needed.

Consider (98): overt that will assign Case to e, given that the finite clause complementizers assign nominative Case in English. Hence e cannot form a chain with t. There will be two chains, t and e, where t has no θ-role, and e has no operator to bind it.

Empty that, on the other hand, may remain C-invisible.

\[(100) \; \text{whi} \ldots (S''t_i (S', c (S \; e_1 \ldots )))]

In that case e need not be Case-marked, if coindexing with Infl does not entail nominative Case-marking. Hence e can enter a chain headed by t, and, provided t is Case-marked, properly governed, and locally bound by an operator, the chain will be well formed. The trace t will be properly governed and Case-marked if it is governed by Case-assigning verbs such as say, think, claim, etc., as in (96b).

The that-trace effect is found in many languages, including French and standard Swedish (it is not found in so-called null-subject languages, i.e. languages like Spanish, etc., where, basically, an empty subject can be licensed by agreement; according to Platzack(1985b) Icelandic is a null-subject language). In Swedish the configuration (98) will be excluded just like in English. The auxiliary assumption that nominative Case-marking by coindexation with Infl is optional is irrelevant if Agr is never in Infl in Swedish.

As mentioned there are exceptions to the that-trace effect among the Scandinavian languages. For instance in Finland-Swedish the following sentence is well formed:

\[(101) \; \text{Vem sa du att hade sett oss?} \]
\[\text{who said you that had seen us} \]
\[\text{"Who did you say had seen us?"} \]

Similar constructions are found in dialects of Norwegian and Danish (see Engdahl(1985)): Call dialects like standard Swedish "A-dialects", and dialects
like Finland-Swedish "B-dialects". Following Engdahl (1985) I assume this structure is possible because the relevant complementizer, in these varieties of Scandinavian, is a proper governor. Since the complementizer also assigns Case to the subject, there must be no intermediate trace in (101): the Case-marked subject trace must be locally bound by the operator wh. The structure of (101) is (102)

(102) vem: (s, sa (s, du (v, att (s, e; hade sett oss))))

There are other possible accounts of (101): It could be that in the B-dialects att is not a Case-assigner, or an optional Case-assigner, i.e. equivalent to the empty complementizer in English and standard Swedish. In that case the structure of (101) would be = (100), with att instead of c. According to the latter hypothesis att is, as it were, a weaker element in the B-dialects than in the A-dialects. Under the former hypothesis att is a stronger element in the B-dialects than in the A-dialects.

The hypothesis that att is a stronger element in the B-dialects is supported by the following facts:

(103) a. *Vem är du glad inte kunde komma? (Standard Swedish)
    who are you glad not could come
    b. Vem är du glad att inte kunde komma. (Finland-Swedish)
    c. *Den artikeln är jag säker inte blir refuserad. (SSw.)
    that paper am I sure not will-be turned down
    d. Den artikeln är jag säker att inte blir refuserad. (FSw.)
    e. ?*Vilken teori är det troligt är oriktig (SSw.)
    which theory is it probable is wrong
    f. Vilken teori är det troligt att är oriktig? (FSw.)

(According to T.A.Afarli (p.c.) similar data can be found in Norwegian B-dialects.) The (a,c,e) sentences are ill formed because the matrix predicate is (arguably) not a proper governor and (clearly) not a Case-assigner. Hence the intermediate trace t will not be properly governed (in violation of the ECP) and/or not Case-marked (in violation of the Case Filter, since the chain (t,e) will lack Case.

(104) Vem: är du (AP glad (s, t, (s, (s, e; kunde komma)))

In the (b,d,f) sentences there is no need for an intermediate trace if att can govern the subject trace properly, and assign Case to it. If att were a weaker sort of element in Finland-Swedish and similar dialects, which does not assign case, or only does so optionally, the facts in (103) are not predicted.7

One of the problems encountered by this analysis of the that-trace effect
has to do with the for-complementizer. For is subject to the that-trace, or rather Comp-trace, effect, although the effect is weaker than with that:

(105) Who do you want *(for) to win.

This is predicted if for, like the other complementizers in English, is not a proper governor. If the structure is (106a), the subject trace will be Case-marked and locally bound by wh, but it will not be properly governed. The marginal acceptability of (105) with overt for (more obvious with prefer than with want) I assume is due to for, presumably on account of its prepositional character, being a stronger governor than e.g. that. Hence (105) is almost acceptable with the structure (106a):

(106)a. whi ... want (s, for (s e1 ...))
   b. whi ... want (s''ti (s, for (s e1 ...)))
   c. whi ... want (s''ti (s, c (s e1 ...)))

The structure (106b) is ruled out because e is Case-marked by overt for, and hence cannot form a chain with t. There will be two chains, t and e, but only one θ-role and only one binder. But (106c) is well formed, since empty for can remain C-invisible.

The problem arises when we consider the structures in (107):

(107)a. I want very much *(for) John to be my roommate.
   b. Who do you want very much (*for) to be you roommate?

We said earlier that for must be overt in (107a) because the embedded clause, hence its head C, is not properly governed or Case-marked by want, and hence empty for cannot be C-visible. We correctly exclude (107b) with overt for, just as we exclude (106a,b). We would, however, expect (107b) to be ill formed with empty for as well, i.e. with a structure like (106c), because t would not be properly governed, and especially not Case-marked, by want, due to the intervening very much. But of course (107b) is perfectly well formed without for. I will leave this problem unresolved.

6.5.6. Empty som

Consider another case of empty C: the complementizers som, found in relatives and embedded questions in Swedish and Norwegian. In relatives som is optional when a non-subject is relativized, obligatory when the subject is relativized.

(108)a. boken (s, (som) (s jag köpte e ))
   the book that I bought
   b. boken (s, *(som) (s e försvann))
the book that disappeared

Taraldsen (1986b) notes that this looks like a typical ECP effect: in (108a) the subject is overt, hence need not be properly governed. In (b) it is empty and must be properly governed, which it is if som is a proper governor. Taraldsen implies that som is actually absent when not overtly realized. However, why could a phonetically empty som not properly govern the subject trace, in a case like (108b)? The account in terms of ECP is incomplete unless we postulate that ECs, or at least some instances of ECs, among them empty som in constructions like (108b), cannot govern properly.

Another problem is: how is Case assigned to the subject in (108a) when som is phonetically empty. This is a problem only given the assumption made earlier that nominative Case is always assigned from C in the mainland Scandinavian languages. In (108a) the subject need not be properly governed, but it must be Case-marked. Hence phonetically empty som must be at least C-visible in (108a).

I propose that the empty som is made visible by Case-marking "inherited" from the EC in S which it binds. Following Taraldsen (1986b) I assume som is the operator which binds the object EC in (108a). That is to say, som has a dual function: it is the complementizer and head of S', but also an operator which binds a variable in S. The indexing is then as in (109):

(109) \( \text{\textsc{np}} \text{\textsc{nj bokeni} (} \text{\textsc{s} somi} (} \text{\textsc{s} jag köpte ei})) \)

The EC is assigned Case by the governing verb. If Case assigned to an EC is in some sense inherited by the operator binding it (as suggested in LGB (173)), then som has Case. By assumption this is sufficient to make som visible, and a possible Case-assigner even in the absence of a phonetic matrix. In (108b), on the other hand, the EC gets Case from C. But if C is empty it cannot assign Case unless it it is made visible by virtue of being properly governed or Case-marked, where Case-marking can be effected by Case-inheritance from a trace. The empty som in (108b) is not properly governed, and does not bind a Case-marked trace, hence (108b) cannot satisfy the Case Filter.8

The idea that Case can make a head visible is related to the well known observation that Case can make an EC visible for phonological processes. The most famous example of this is the impossibility of wanna-contraction in cases like the man I want ei to come. Contraction to wanna is here prevented by the intervening Case-marked trace (cf. Jaeggli (1980), LGB (181f.)). That is to say, Case has the same effect as phonetic features as regards contraction. It is not implausible, then, that Case might have the same effect as phonetic features also for the Case-assigner: a phonetically empty Case-assigning category is made visible if its projection is Case-marked, in which case the head inherits Case from its projection (by "feature-trickle"), or if it can inherit Case in some other way, e.g. by binding a Case-marked variable, as in the case of som.

In the case of embedded questions the facts are similar but not identical.
(110)a. ...vilken bok (*som)( du köpte e )
   which book that you bought
b. ...vilken bok *(som) ( e försvann)
disappeared

The difference is that som is not just optional but impossible in the non-subject question (subject to dialectal variation, though, at least in Swedish). See Taraldsen (1986b) for a possible explanation. I assume there is no phonetically empty som in a well formed non-subject question, but instead the wh-phrase has restructured with empty C, just like in English embedded questions (see section 5.5). The wh-phrase thus provides the phonetic features making subject Case-marking possible.

6.5.7. A note on the verb trace in Spanish

Torrego (1984) argues that the trace left by verb movement such as found Spanish wh-questions is not a proper governor. Hence (111) (with Torrego's structural description) is ill formed because the trace e is not properly governed.

(111) (S (que diccionario) i no sabias (S (a quien) i (habia devuelto
(S (Celia (VP e1 e2))))))

(which would mean "What dictionary didn't you know to whom Celia had returned"). According to Torrego this follows from a general condition that proper governors must be "lexical" in the sense "phonetically overt". We cannot accept such a condition, since it would rule out masses of well formed structures where a verb trace in the Scandinavian and the other V2 languages governs an empty category. If it is the case that Spanish verb traces do not govern properly while e.g. Swedish verb traces do, this may be due to the way these verb traces are themselves governed and thus made visible. The fronted verb (note that it can also be an auxiliary + a main verb, as in (111), where the antecedent of v is habia devuelto) does not land in C in Spanish, judging from the fact that it applies just as well in embedded as in main clauses. According to Torrego it is adjoined to S. This may indeed be the crucial difference: The verb trace in I in e.g. Swedish is undoubtedly governed properly by its antecedent in C, as discussed, and hence it is perfectly visible for all grammatical processes (with the proviso that it can optionally remain invisible). The Spanish verb trace is governed by its antecedent, too, and made visible for certain processes, notably Case marking (otherwise there would be no well formed structures with moved verbs in Spanish). However it is conceivable that the government exerted by the verbal constituent adjoined to S is somehow not strong enough to make the verb trace a proper governor of an EC. This might explain why the verb trace in main clauses apparently does govern an EC
properly, as in

(112) Que (le) dijo Maria v e: a Juan?

\[ \text{what \ CL \ said \ M.} \ \text{to J} \]

In main clauses the fronted verb may land in C, hence properly governing its trace, just like in the V2 languages. (This explanation does not directly carry over to cases of well formed verb fronting in embedded clauses in Spanish, though, such as discussed in Torrego(1984).

6.5.8. Ha-deletion

Finally consider yet another case of an empty head, mentioned earlier: the Swedish auxiliary ha. The relevant data are given in (113):

(113)a. Jag tror att han (har) varit sjuk.

\[ \text{I think that he has been ill} \]

b. Han måste (ha) varit sjuk.

\[ \text{he must have been ill} \]

c. Han *(har) varit sjuk.

The auxiliary ha can be deleted anywhere except when it is the finite verb of a main clause. Platzack(1986a) formulated the following rule:

(114) Delete auxiliary ha except when in C.

We now have an explanation for the except-condition in (114). Nominative Case is assigned from C, either to the XP-position, by coindexation of Infl and the NP in the XP-position (subject-first main clauses), or by virtue of government of the subject position by a (-N)-marked C. In either case, if C is phonetically empty and is not made visible by proper government or Case-marking it can assign no Case, by principle (44). The C of a main clause is ungoverned. Hence if ha is deleted, i.e. phonetically empty when in C it will be invisible, and the Case Filter will be violated. We can therefore simplify (114) to "Delete auxiliary ha", or, as I prefer to put it:

(115) The phonetic matrix of auxiliary ha is optional.

We have to assume ha is present in some form in the s-structure of (113a,b). For one thing, in (113a) the Predicate Principle will be violated if at least the feature (+V) of ha is not present in Infl. If there is deletion of ha in the PF component there is no reason why it should ever lead to a Case Filter violation, as Case is assigned in s-structure. This implies that ha is not deleted, but rather may remain phonetically empty throughout the derivation.
The unless-clause in Platzack's rule (114) could be explained by the standard formulation of the ECP as well, since the C of a main clause is obviously not properly governed. However the ECP would seem to exclude (113b) as well: Here empty ha is governed only by the complementizer att. As discussed in section 6.5.4 and 6.5.5 att is not a proper governor in (standard) Swedish. Att may still be a strong enough governor to make empty ha F-visible. Given that att is a Case-assinger, as we have assumed, empty ha would even be C-visible -- possibly redundantly.

Auxiliary ha cannot be empty in control infinitivals, a fact which is not accounted for by Platzack's rule (114):

(116) Det är bra (att PRO *(ha) läst den).
it is good to have read it

This follows given that the infinitival clause complementizer is not a governor -- as it could not be since it allows PRO in the subject position (cf. section 5.6). Hence empty ha in Infl will not be F-visible (an account of empty ha in terms of the ECP will have the same effect).

In raising and AcI constructions ha can be empty:

(117)a. Johan verkar (e inte (ha) slagit sej)
J. seems not have hurt himself
b. Jag anser honom (ha) varit för passiv.
I consider him have been too passive

This is consistent, on the whole, with the findings of section 5.6: Raising and AcI-infinitivals fall together and contrast with PRO-infinitivals. In (117a,b) I assume empty ha is licit by virtue of being effectively the head of the embedded predicate, and as such being governed by the matrix verb: as discussed in section 5.6 the embedded subject position is governed by the matrix verb, hence the embedded S, the predicate of S, and ultimately the head of the predicate is (S being a projection of its predicate). The snag is that, by assumption, raising and AcI infinitivals contain Infl, but without V-to-I --since if they had V-to-I the entire constructions would be (+V). We have to assume the empty Infl does not block government of the head of VP.
6.6. Other structures ruled out by the "phonetic adjacency condition"

6.6.1 Object Shift across a preposition

Let us go back to Object Shift, to explain the remaining cases of structures ruled out by the "phonetic adjacency condition", now derived from our theory of empty heads. Consider first (118) = (3):

(118)a. Jag tror inte på det.
   *I believe not in it
b. *Jag tror det inte på.

Below are a few additional examples exemplifying the result when the object of a preposition is Object-shifted:

(119)a. Sara tittar sällan på mej.
   S. looks seldom at me
b. *Sara tittar mej sällan på.
   c. Hon dansade ibland med honom.
      she danced sometimes with him
d. *Hon dansade honom ibland med.
   e. Dom skrattar alla åt oss.
      they laugh all at us
f. *Dom skrattar oss alla åt.

The explanation is by now obvious: the overt preposition Case-marks the trace of the shifted object pronoun, and hence the trace and the pronoun cannot form a chain. The relevant part of the structure of (118b) is (120):

(120) \( (I, \text{det}; (I, \text{inte}; (I, v; (pp \text{ på } e_i )))) \)

In this structure there will be two chains, \( \text{det} \) and \( e \), where the former has no \( \theta \)-role and the latter is an unbound variable. (118) is a particularly illustrative example, because \( \text{tro} \) "believe" can also be construed without a preposition with (almost) no change in meaning, in which case Object Shift is possible:

(121) Jag tror det inte.

Conceivably (121) contains an empty preposition, which might even assign a \( \theta \)-role to the object. This is predicted to be possible by our theory, since an empty preposition may be \( \theta \)-visible but yet remain Case-invisible.
6.6.2. Object Shift across a particle

Consider now (122) = (4a,b):

(122)a. Jag skrev faktiskt upp det.
       *Jag skrev det faktiskt upp.

A "verb–particle", that is an intransitive preposition (for convenience I shall continue using the traditional term "particle"), between the verb trace and the object position also blocks Object Shift. Below are a few additional examples:

(123)a. Han lämnade inte in den i tid.
   \hspace{1cm} he handed not in it on time
   "He didn’t hand it in on time."
   b. *Han lämnade den inte i tid.
   c. Nyström spelade helt enkelt ut honom.
     \hspace{1cm} N. played quite simply out him
     "N. quite simply outplayed him."
   d. *Nyström spelade honom helt enkelt ut.
   e. Hon gjorde aldrig bort sej.
      \hspace{1cm} she did never away self
      "She never made a fool of herself."
   f. *Hon gjorde sej aldrig bort.

As mentioned shifting the object of a V+particle construction is perfectly possible in all the other Scandinavian languages. Compare for instance 104b) and the Danish equivalent (124):

(124) Jeg skrev det faktisk op.

This is quite simply because the particle need not, and in fact, when the object is a pronoun, cannot, intervene between the verb (trace) and the object position in all the Scandinavian languages except Swedish. In Swedish the particle must intervene between the verb and the object. Compare the Danish (125) and the Swedish (126):

(125)a. Jeg skrev det op.
       \hspace{1cm} b. *Jeg skrev op det.
(126)a. *Jag skrev det upp.
       \hspace{1cm} b. Jag skrev upp det.

Hence the structure of the relevant part of the Danish (124) will be roughly (127), where the structure satisfies the "phonetic adjacency condition", that is the trace of the shifted object is governed by an empty verb:
Following Kayne (1985) I assume that NP and particle in the V-NP-particle construction make up a small clause, headed by the particle. This analysis implies that the particle assigns a θ-role to the NP, which quite clearly it does: hence the difference in the role assigned to NP in e.g put NP down vs. put NP off. Presumably the θ-role is assigned compositionally by the particle and the verb; cf. Afarli (1985) for an argument to this effect, and Guérin (1986) for arguments that the particle construction is a small clause in s-structure but not in d-structure, where V+particle would form a complex verb of sorts, assigning a compositional θ-role to the object NP. In Danish the word order V-particle-NP does not occur at all. Norwegian and Icelandic are roughly like English in that the word order V-particle-NP is possible basically as long as the NP is not a simple, weakly stressed pronoun: give up smoking/*give up it. In (standard) Swedish the subcategory of the object makes no difference: V-particle-NP is the only possible word order, except if the particle is complex, in which case the NP may precede the particle phrase, as in (128a), and must not follow the entire particle phrase, as in (128b). (128c) is also possible.

(128)a. Vi kastade den ut genom fönstret.
    *We through it out through the window
    b. *Vi kastade ut genom fönstret den.
    c. Vi kastade ut den genom fönstret.

Given that (128a) is OK we expect Object Shift to be possible, which it is.²

(129)a. Vi kastade den genast ut genom fönstret.
    at once

The ill formed result when Object Shift is applied across a particle, as in (122b), will be explained as follows: First we will establish that V+particle form a complex verb, the particle being incorporated in the verb. Verb movement breaks up this complex verb, moving only the head of the complex verb, leaving the particle behind. The structure of the relevant part of (122b) will then be (130), where the leftmost v is the trace in Infl left by V-to-C, the rightmost v the trace after V-to-I.

(130)  (I, det, (I, genast (I, v (VP(v upp) e))))

The verb governing the object position in this construction does not qualify as empty, due to the phonetic features provided by the particle. Hence it cannot be Case-invisible, and hence the structure is ruled out just like (118b): the
shifted pronoun and the trace e cannot form a chain, because e is obligatorily Case-marked, in (130) by the complex verb consisting of a verb trace and an overt particle.

This is another piece of evidence that a category with an empty head is not an EC for the principles of grammar if some part of it is phonetically realized; cf. discussion in section 6.5.4.

We need not here take a definite stand on the question how the word order V-particle-NP word order is formed in English, Norwegian, and Icelandic. Kayne(1985) proposes (for English, but the analysis can be extended to Norwegian and Icelandic) that it is formed from the SC structure V (NP particle) by rightwards movement of the NP. This would explain why the word order V-particle-NP is ruled out when the NP is a light pronoun: you can never move such pronouns rightwards (rightwards movement of NPs always have the nature of Heavy NP Shift). Afarli(1985) proposes that V-particle-NP is formed from V-NP-particle by movement leftwards of the particle. An analysis related to Afarli's, but more in the spirit of Baker(1985), is that it is a case of movement--and--incorporation of the particle in the verb. The incorporation analysis would account for why V-particle-NP is not allowed when the particle is complex: *We threw out the window the books. This would follow from a general prohibition against incorporating phrases in words. On the other hand the incorporation analysis does not explain, in any obvious way, why the putative complex word consisting of V and particle cannot take light pronouns as object -- this is not expected if V+particle is a word. As shown by Baker(1985) it seems generally to be the case that words formed by incorporation (he discusses N--incorporation, V--incorporation, and P--incorporation) take exactly the same range of objects as the items incorporated do before incorporation.

What is relevant in the present context is that the Swedish V+particle construction behaves just like a word in that it takes light pronouns as well as heavier NPs as object, as the examples in (123) show. Moreover, as shown by (128b), the particle must not be phrasal, as expected if it is to be incorporated in the verb. Afarli(1985) argues that V+particle is not a word on the grounds that (a) it does not have the complement + head structure typical of words in the Scandinavian languages (and English) nor (b) the typical stress pattern of words, and (c) the particle is left behind when the verb is fronted, as shown in (131):

(131)a. Skrev Johan upp numret?
   wrote J. up the number
b. *Skrev upp Johan numret?

However the properties (b) and (c) are probably consequences of property (a), the exceptional phrase--like structure of the complex word consisting of a verb and a particle. We do not necessarily expect a word with this exceptional
structure to have a regular word-like stress pattern. As for the fact that the particle is left behind under movement, there are other examples of words with this exceptional structure, and they tend to behave in the same way with respect to verb movement. Let us look at two examples:

Baker (1985), developing the theory of Hornstein and Weinberg (1981), claims that the prepositional passive (in English) is formed by movement-and-incorporation of the preposition in the verb. The structure of e.g. *John was laughed at* would be (131):

\[
(131) \quad (S \quad \text{John} \quad (I \quad \text{was} \quad (\text{VP} \quad \text{laughed at}_j \quad p_j \quad e_i)))
\]

This analysis is compatible with our theory of empty heads: the trace of the preposition, being properly governed by the moved preposition, can be 0-visible but remain Case-invisible, making possible formation of the chain (*John, e*). Swedish, too, allows prepositional passives to some extent with the s-passive as well as the periphrastic passive. In the present context the s-passive is the interesting case:

\[
(132) \quad (?)\text{Johan skrattades åt.} \quad J. \quad \text{laugh-PASS at}
\]

If Baker’s analysis is extended to Swedish, as seems entirely natural, *skrattades åt* in (132) is a complex verb. Yet the preposition is obligatorily left behind by verb movement,

(133)a. *Varför skrattades Johan åt?*  
   why  
   b. *Varför skrattades åt Johan?*

The following is another case of V-to-C breaking up a complex verb: As argued in Holmberg (1983c, 1984b) the simple reflexive *sej* in construction with so called reflexive verbs is a clitic in Swedish. This shows very clearly in that the reflexive may follow the verb under movement: compare e.g. the embedded clause structure (134a) and the main clause structure (b):

(134)a. att Sara uppförde *sej illa.*  
   that S. behaved self badly  
   b. *Varför uppförde *sej Sara illa?*  
   why

The structure of (134a) would be roughly (135a), and that of (134b), roughly (135b):
Constructions with reflexive verbs are, in this view, structurally very similar to passive (in particular s-passive) constructions: the reflexive functions as a "passivizing morpheme", absorbing the Case assigned to the object position and the θ-role assigned to the subject position (cf. Holmberg(1984b); cf. Everaert(1986) for a fuller theory of reflexive verbs roughly along these lines). The clitic status of the reflexive also shows in e.g. the construction (136):

(136)a. *Maria påstår honom vara konstnär.
M. claims him (to) be an artist
b. Maria påstår sej vara konstnär.

self

There are a number of verbs in Swedish, including påstå "claim", säga "say", tro "believe", tycka "think", which allow an ACl complement, but only with a reflexive as the "accusative". (There are only two verbs, anse and finna, which can take ACl with a non-reflexive accusative.) The problem is, conceivably, that verbs like påstå, etc. are not quite strong enough to Case-mark the subject of the complement clause. Hence (136a) is ruled out by the Case Filter. In (136b) Case-marking is not a problem: the reflexive is a clitic on the verb, and hence gets the Case assigned by the verb the way object clitics always do. The structure (abstracting away from verb movement) will be (137a), a construction very much like the raising construction (137b) ("Maria is claimed to be an artist"). In both cases there is a chain headed by the matrix subject, tailed by the embedded subject. Following the analysis in section 5.6 I assume the complement is S' with empty C but this is not crucial: it could be a bare S, as in LGB.

(137)a. Maria; (VP (§påstår sej;) (S, c (S e; vara konstnär)))

b. Maria; (VP (§påstås) (S, c (S e; vara konstnär)))))

However, although the reflexive clitic can always move along with the verb in Swedish it need not do so: it can optionally be left behind, as in the even-lettered examples below:

(138)a. Varför rakar sej Christer inte?
why shaves self C. not
b. Varför rakar Christer sej inte?
c. Denna gång ändrade sej regeringen.
this time changed self the government
"This time the government changed their minds"

d. Denna gång ändrade regeringen sej.

e. Slog sej Sara?
   hurt self Sara

f. Slog Sara sej?

(In (138b) Object Shift has applied to the reflexive left behind.) The construction has exactly the same thematic properties whether the reflexive is moved along or not. Moreover, the AcI-like constructions with påstå, etc. will have the same status whether the reflexive is moved along or not: compare e.g. (139a) where it is moved along with the verb, and (139b) where it is left behind.

(139a) (Påstår sej) Maria vara konstnär?
   b. Påstår Maria sej vara konstnär.

This implies strongly that the reflexive is a clitic also when left behind: otherwise it could not be Case-marked in (139b). That is to say, Swedish reflexive verbs provide another case of a complex word-like unit with a phrase-like internal structure, where the non-head part can be left behind by verb movement.

I take it to be established that V+particle forms a complex word in Swedish. We do not need to establish here whether the word is formed in the syntax, by movement and incorporation of the particle, or whether it is formed in the lexicon. In either case the result of Object Shift will be as shown in (130): the object of the complex verb will never be governed by a completely empty verb, since the particle is always left behind by verb movement. Hence a trace in the object position will obligatorily be Case-marked, and thus Object Shift cannot apply successfully.

6.6.3. Object Shift across a dative object

Consider finally (120) = (6):

(140)a. (?)Jag gav slutligen Sara den.
   I gave finally S. it
   
   b. *Jag gav den slutligen Sara.

(140a) has a somewhat marginal status (although it seems better than the English corresponding structure I gave Sara it). (140b), where the direct object pronoun has shifted leftwards, is, however, clearly worse. The d-structure of the relevant part of (140) will be (141a) -- as discussed in sections 2.9 and 6.5.2 the double object construction is a SC with a PP headed by a empty preposition as subject. The structure of the relevant part after verb movement and Object Shift will be (141b)
(141)a. \((I,\text{slutl.} (I,\text{Infl} (\_P \text{gav} (SC(PP^p \text{Sara}) \text{den}))))\)

\(b. (I,\text{den;} (I,\text{slutl.} (I,\_v (SC(PP^p \text{Sara}) e_i ))))\)

The structure \((b)\) is ill formed for the following reason: Either \(v\) is Case-visible, thus making \(p\) Case-visible, as required in order for the dative object Sara to be Case-marked. But in that case \(v\) cannot avoid assigning Case to the direct object position. The trace will then be Case-marked, and the structure is excluded for the same reason as \((138b)\) and \((142b)\): the shifted object and the trace cannot form a chain. Alternatively \(v\) chooses to remain Case-invisible. In that case the direct object trace will not be Case-marked, and the chain \((\text{den}, e)\) can be formed. But now \(p\) is not made visible, hence the dative object is not Case-marked, and the structure is ruled out by the Case Filter.

To my ear \((140b)\) is more acceptable than \((118b)\) (Object Shift across a preposition) and \((122b)\) (Object Shift across a particle). This is compatible with our theory: \((140b)\) has an analysis where it only violates the Case Filter while \((118b)\) and \((122b)\) violate both the \(\theta\)-criterion (they contain an NP without a \(\theta\)-role) and the prohibition against unbound variables. Moreover Case Filter violations are often not that severe: Compare for instance \(I\) want very much John to win, which is almost acceptable although it violates the Case Filter as the empty complementizer for is not made properly visible, very much like in \((140b)\) on the analysis where \(v\) remains Case-invisible.

If both objects are pronouns the dative object can be shifted alone, or else both pronouns are shifted leftwards: \((142a)\) shows the embedded clause (= d-structure) word order, \((142b,c)\) show the main clause word orders, where in \((b)\) the dative object, and in \((c)\) both objects are shifted around S-adv.

\[(142)a. \text{att jag inte gav henne den.} \]
  \(\text{that I not gave her it}\)

\(b. \text{Jag gav henne inte den.} \)

\(c. \text{Jag gav henne den inte.} \)

The structure of \((142b)\) is \((143)\):

\[(143) (I,\text{henne;i} (I,\text{inte} (I,v (SC(PP^p \text{e_i }) \text{den}))))\]

The verb trace must be Case-visible, to Case-mark the direct object, but \(p\) may remain Case-invisible, in which case the chain \((\text{henne}, e)\) is well formed. \((142c)\) is probably not a case of movement of the whole SC. In particular Case considerations make it improbable that such a movement could take place. The structure is rather as in \((144)\):
Here the verb trace remains Case-invisible, hence \( p \) is also Case-invisible. Neither \( e \) nor \( e \) will be Case-marked, so the chains (henne, \( e \)) and (den, \( e \)) are both well formed. We have assumed no general principle which would guarantee that the shifted objects retain the base order dative object – direct object. In fact the reverse order is not totally unacceptable:

(145) (?)Jag gav den henne inte.

6.7. Why Object Shift applies only to pronouns in Swedish

In the introduction to the section on Object Shift I listed three properties in need of explanation: (1) the phonetic adjacency condition, (2) the fact that Object Shift applies only to unexpanded and weakly stressed pronouns in Swedish (Danish, Norwegian), but to all kinds of nominal categories in Icelandic, and (3) the (near-) obligatory nature of Object Shift. So far we have explained property (1), the phonetic adjacency condition. In this subsection I shall propose an explanation of property (2). I will argue that the property which unexpanded, weakly stressed pronouns have, which other nominal categories do not have in Swedish (Danish, Norwegian), which is crucial to Object Shift is morphological case. Icelandic, on the other hand, has morphological case on all nominal categories.

6.7.1. Object Shift and Case-marking

Consider the Swedish Object Shift construction (146a), with the structural description (b):

(146)a. Köpte Johan den inte?
   bought J. it not

   b. köpte (S, Johan (I, deni (I, inte (I, v e_i ))))

In this structure the shifted pronoun is governed by the fronted verb, given our definition of government (there being no \( X^0 \) "closer" to it than the fronted verb), but it is probably not Case-marked by the fronted verb -- although this is open to discussion. If the verb is to assign objective Case to the shifted object we must postulate some mechanism which prevents the verb from assigning the objective Case to the closest NP, the subject. Any such mechanism would seem to be ad hoc. One possibility would be stipulating that nominative Case has priority: the subject would get marked nominative, and the objective Case assigned by the verb would have to go to the second closest NP,
the shifted object. I do not know any independent motivation for such a principle, though. In fact I have assumed rather the opposite to be the case: NP can be marked nominative only if it is not marked by any other Case; cf. section 2, fn.4, and especially section 4.4.5.

I will assume that the verb in C does not assign objective Case. This implies that the verb in C has left behind not only its θ-marking capacity (it does not assign a θ-role from the position in C) but also its Case-marking capacity. In terms of categorial features it is not (-N) but only (+V). The question then is: how does the shifted pronoun satisfy the Case Filter? I propose it does so by virtue of its case morphology. Pronouns are the only items which have case morphology in the mainland Scandinavian languages (disregarding genitive, which is not morphological case in the same sense; cf. Piva (1985a,b)) and below, and pronouns are the only items which are moved by Object Shift. I claim that this correlation is not accidental. Let us put aside for the moment the exact implementation of the idea that case morphology can serve to satisfy the Case Filter, and consider some consequences of this hypothesis.

First, it predicts correctly that not only pronouns but other NPs as well can be moved by Object Shift in Icelandic, since in Icelandic all nouns have morphological Case (henceforth "m-case"). There are four m-cases in Icelandic: nominative, accusative, dative, and genitive, exemplified in (147) by the Icelandic word for "hat":

(147)  
Nominative: hattur
Accusative: hatt
Dative: hatti
Genitive: hatts

We shall deal with Icelandic Object Shift in some detail in a separate subsection. Here I only give a couple of examples of Object Shift involving a non-pronominal category:

(148)a. Keypti Jón ekki bókina?/ Keypti Jón bókina ekki?  
bought J. not the book
b. Sigga setur aldrei hlutina á réttan stað./ Sigga setur  
S. puts never the things in the right place
hlutina aldrei á réttan stað.

Second, given an additional, but well motivated assumption, it will account for why only unexpanded pronouns are moved by Object Shift in Swedish (Danish and Norwegian). As shown in (149), a modified pronoun (as in (a)), a pronoun with a complement (as in (b)), or coordinated pronouns (as in (c)) cannot be moved by Object Shift.
(149)a. Hon känner inte er två. */Hon känner er två inte.
   you two

b. Jag föredrar nog henne med handväskan. */Jag föredrar henne
   I prefer actually her with the handbag
   med handväskan nog.

c. Dom godkänner aldrig dej och mej som scoutledare.*/Dom godkänner dej och mej aldrig som scoutledare.
   they accept never you and me as scout masters.

At first sight the fact that complex expressions headed by pronouns do not undergo Object Shift may seem to falsify the hypothesis that case morphology is crucial: a projection normally shares (specified) features with its head, and the heads in this case have m-case. However there is good reason to believe that the m-case feature carried by pronouns in Swedish (Danish and Norwegian) is a "degenerate syntactic feature" in the sense that it does not percolate. Hence the expressions er två "you two", henne med handväskan "her with the handbag", and dej och mej "you and me" will have the following feature distribution (omitting irrelevant details; OBJ = objective m-case, NmP = name phrase):¹¹

(150)a. NmP
   [−V
    [+]N
   ]

   Nm
   [−V
    [+]N
    [+]OBJ
   ]

   er

   två

b. NmP
   [−V
    [+]N
   ]

   Nm
   [−V
    [+]N
    [+]OBJ
   ]

   henne

   med

   handväskan

c. Nm
   [−V
    [+]N
   ]

   Nm
   [−V
    [+]N
    [+]OBJ
   ]

   dej

   och

   mej

If so, the fact that expanded or coordinated pronouns do not undergo Object Shift is just what the theory predicts.

In the following I will give three arguments that expanded or coordinated pronouns do not behave as if they bore the Case feature carried by their head. (From now on I will use "expanded" to mean "expanded or coordinated").

1. Taraldsen(1981) proposes that the ill-formedness of (151a), as opposed to (151b) is due to a Case-conflict.
(151)a. *Vi har Erik sagt är odugliga.
we has E. said are useless
b. Oss har Erik sagt att man borde avskeda.
us has E. said that you ought to fire

The topicalized embedded subject in (151a) moves via the embedded XP-position, where it is subject to government and Case-marking from the matrix verb. The Case assigned is objective, hence the Case-conflict, since the subject is morphologically nominative.

(152) vii har Erik sagt (S^n t_i (S_s c (S_e i är odugliga)))

In (151b) no Case-conflict will result even if the topicalized object pronoun moves via the embedded XP-position; in fact we have assumed that it need not, and even cannot do so: if it did the intermediate trace in the XP-position would have to be an operator, since otherwise the object trace would be an anaphor not bound in its GC. I assume that an intermediate trace cannot be a operator.

However, (151a) is significantly improved if the topicalized subject is an expanded pronoun.

(153)a. Vi tre har Erik sagt är odugliga.
we three has E. said are useless
b. Vi med vår brist på erfarenhet har Erik sagt är odugliga.
we with our lack of experience
c. Vi och våra medhjälpare har Erik sagt är odugliga.
we and our assistants

This follows if the topicalized phrases do not have the m-case feature although their heads do.

2. Discussing the Norwegian genitive construction Per sin bil, lit. "Peter his(REFL) car", Fiva(1985a,b) notes that it is ill formed if the first element is a pronoun:

(154)a. Per sin bil
P. his car ("Peter's car")
b. *han sin bil
he his car

She accounts for this by the principle, proposed by Kayne(1983a), excluding chains in which more than one member has m-case. In (154a), the structure of which is (Per_i (sin_i bil_e_i)), there is a chain (Per, sin, e) which satisfies Kayne's principle since only the possessive reflexive has m-case. But in (154b) the principle is violated, since both han and sin have m-case. Fiva notes that if
the first pronoun is stressed or expanded the construction is acceptable:

(155) HAN derre der sin bil.

he there his car

This follows if the expression han derre der does not have m-case even though the head pronoun does.

3. Possessive pronouns usually occur in pre-head position in standard Swedish. However, in Norwegian as well as in many Swedish dialects they may follow the head noun (the examples are Swedish):

(156)a. min bok / boken min

my book the book my

b. ditt nya hus / det nya huset ditt
    your new house the new house your

c. våran son / sonen våran
    our son the son our

This is true only of possessive pronouns. Other genitive phrases are excluded in post-head position:

(157)a. Johans bok / *boken Johans

b. prästens nya hus / *det nya huset prästens
    the vicar’s new house

c. Kinas framsteg / *framstegen Kinas
    China’s progress

I propose (following Holmberg(1985a)) that the possessive pronouns are possible in post-head position by virtue of their case morphology, which makes it possible for the pronouns to occur in a non-Case marked position, such as the post-head position of an NP, without violating the Case Filter. Only possessive pronouns have "real" genitive m-case. The genitive -s is not an m-case inflection, in the ordinary sense: it is a nominal clitic, base-generated in the pre-head determiner position), and cliticized to an NP adjoined to NP, to the left of -s, as argued by Fiva(1985a,b). That genitive -s is not a case-inflection shows in that it does not attach to the head of NP, the way a regular case-inflection would do, but instead attaches outside NP.12

(158)a. *mannen-s med skägget hus

the man’s with the beard house

b. mannen med skägget-s hus

However, crucially the possessive pronouns in post-head position must be unexpanded, as predicted if the m-case feature does not percolate. (This can
only be tested with respect to coordination and the expansion min/din/etc. 
egen -- since possessive pronouns cannot be expanded in any other way.)

(159)a. min och din bok / *boken min och din
       b. ditt och hennes nya hus / *det nya huset ditt och hennes
       c. vår an egen son / *sonen vår an egen

We may conclude that if the crucial condition for a nominal category to 
undergo Object Shift is that it should have m-case, then we do not expect 
expanded pronouns to undergo Object Shift.13

The following is another argument in support of the hypothesis that a 
nominal category needs m-case to undergo Object Shift successfully: There is a 
dialect in the north of Sweden which does not make the standard morphological 
distinction between subject and object pronouns, in certain contexts. Instead 
the standard subject form is used in object as well as subject position. That is 
to say, the m-case distinction is neutralized for pronouns (in these contexts), 
in this dialect (cf. Holmberg(1986)).

(160) Maria ville kyssa jag / du / han / vi / etc.
       M. wanted (to) kiss I you he we
       (standard Swedish: ...kyssa mej / dej / honom / oss /etc.

We predict that these pronouns should not undergo Object Shift, since they do 
not have m-case -- a correct prediction.

(161) Maria kysste inte jag. / *Maria kysste jag inte. (jag object)

The dialect in question has Object Shift, but the shifted pronouns have 
morphological objective form: Maria kysste mej inte is well formed in this 
dialect, as well as in standard Swedish.

There is yet another empirical datum which may be construed as an 
argument in favour of the hypothesis that case morphology is crucial for 
Object Shift to be successful. There is one exception to the generalization that 
only (unexpanded) pronouns may undergo Object Shift in Swedish (Danish, 
Norwegian): the "dative" object in the double object construction may undergo 
Object Shift, more or less marginally, depending on dialect, and certain badly 
understood contextual conditions.

(162)a. Han gav inte Sara boken. / ?Han gav Sara inte boken.
       he gave not S. the book
       b. Jag visar gärna barnen mina skivor. / (?)Jag visar barnen
           I show gladly the kids my records
           gärna mina skivor.
On the face of it this is incompatible with the hypothesis that only m-case-marked items can be successfully moved by Object Shift. Clearly (162a,b) are exceptional, given this hypothesis. However it is not hard to see why precisely the dative object should be an exception: It is in a sense exceptional anyway, with regard to the Case Filter, not being Case-marked in the "ordinary" manner by the governing verb. There is some sort of "invisible case-morphology" associated with the dative object, and this invisible case-morphology may substitute for real m-case also in the Object Shift construction. We have argued, following Kayne (1984:ch.9) that the dative object is a covert PP headed by an empty Case-assigning preposition. Now assume the shifted dative object in (162) is the whole PP. The structure, omitting irrelevant details, would be (163).

(163)  \( S_i, gav \quad S_j e_j \quad I_1^{(PP)}_p Sara;_i \quad I_1^{(inte \quad v \quad e_1 \quad boken)}) \)

The crucial condition for the empty preposition to be licit is that it be properly governed or be in a Case-marked position. In the Object Shift construction it is, indeed, governed by the verb in C, as discussed above. Whether it is properly governed or in a "Case-marked position" is a moot point. Possibly the marginal and variable status of the Object Shift construction with a shifted (non-pronominal) dative object is a consequence of the marginal status of the fronted verb as a proper governor. Alternatively, since PP cannot in general be moved by Object Shift (*Den låg på bordet inte "It lay on the table not"), the marginal status of (162) is due to the marginal possibility of analyzing the "dative PP" as an NP, albeit an NP containing an empty Case-marking preposition.

6.7.2. Morphological case and the Case Filter

The idea that case morphology may serve to satisfy the Case Filter is not new. You could even say it has been implicit in Case Theory from the start, in the very notion "Case". The traditional view on case morphology is that it serves to identify grammatical relations (subject, object, oblique), and, in languages with more complex case systems, thematic/semantic relations (locative, instrumental, benefactive, etc.). The implicit idea conveyed by the use of the notion "Case" as in modern Case Theory is that some languages use structural (and possibly linear) configuration to identify these relations instead of using case morphology. In for instance English an argument is identifiable as the object of a verb not by its morphology, but by occurring in a particular structural relation to the verb: governed and possibly adjacent to it. In this and only this position it receives (abstract) Case from the verb, in the terms of Case Theory. The traditional view on case morphology can be, and has been, integrated in Case Theory by assuming that the case morphology (in languages where case morphology systematically distinguishes at least the primary
grammatical relations) assigns Case to the NP, much like prepositions do in e.g. English. Hence e.g. an NP with object m-case would not be dependent on occurring in a particular structural relation to the verb; cf. e.g. Stowell(1981: 122ff.), Manzini(1983: 59f.). This would explain the well-known generalization that languages with rich case morphology have "free word order".

In English, as in the mainland Scandinavian languages, pronouns are the only nominal elements which have case morphology (again not counting genitive -s as "real" case morphology). Given the traditional view of case morphology we might expect pronouns to be less restricted than other nominals in their structural distribution; not to be dependent on adjacency to verbs etc. This does not generally seem to be the case, though. In fact the opposite often seems to be more true: for instance (164b) is worse than (164a):

(164)a. She saw yesterday John and Bill.
   b. *She saw yesterday them.

However this may be primarily an effect of another requirement on pronouns, a requirement of, at least in part, prosodic nature: pronouns are "light" elements, and as such tend to be prosodically dependent on "heavier" sentence constituents. They can therefore not be moved about as freely as non-pronominal NPs. (In fact their "lightness" is probably not primarily prosodic, but rather is a function of their "non-lexical" nature — pronouns being composed of only grammatical features.) Although pronouns in English and Swedish are not syntactically clitics, they are, or tend to be phonetically cliticized, typically onto verbs, and in Swedish also to complementizers.

The prediction is then that provided the "prosodic requirement" can be satisfied, pronouns will have a freer distribution than non-pronominal NPs. As discussed in Holmberg(1985a), this seems to be correct, judging from contrasts such as in (165):

(165)a. boken min / *boken flickan(s)
      the book my the girl('s)
   b. Köpte Johan den inte? / *Köpte Johan boken inte?
      bought J. it not the book
   c. Hon var honom trogen. / ?Hon var Erik trogen.
      she was him faithful
      "She was faithful to him."

The post-head position within NP is not a Case-marked position. As discussed earlier a pronoun may appear in this position. The position left-adjoined to the predicate is also not a Case-marked position (as argued above), and only pronouns can occur in this position. The position to the left of a "transitive adjective" is also not a Case-marked position, and pronouns tend to be preferable to non-pronominal NPs in this position. As for English we could
mention a case like (166); there are speakers who will reject (166a) but accept (166b).

(166)a. The book was given John.
     b. The book was given him.

The reason why (166a) is ruled out is, conceivably, that the dative object is not assigned Case; the passive participle cannot make the empty preposition governing the dative object C-visible, in our terms. (166b) is OK since (for these speakers) the case morphology is sufficient to satisfy the Case Filter.

As discussed in Holmberg(1985a) (cf. also Holmberg(1985b)) the generalization that languages with rich case morphology have free word order is at least not universally true. Icelandic word order is not obviously freer than e.g. Swedish word order, although Icelandic does but Swedish does not have rich case morphology. Arguments in Icelandic, just as in Swedish, have to be governed by a Case-assigning category (and be adjacent to it, although this may be but a consequence of the government requirement in a binary branching framework, as noted by Kayne(1984: intr.). Consider for instance (167):

     d. *Jón hefur sýnt rýkilega Guðmundi bókasafnið.
     e. Hefur Jón raunverulega leitið þessa bók?
     f. *Hefur raunverulega Jón leitið þessa bók?

An adverbial inserted between a verb and its complement (as in (167b,d) or between a fronted verb and the subject (between C and S) gives an ill formed result. This is a typical effect of the "adjacency condition on Case assignment". In a binary branching framework it prevents government of the complement or subject. The case morphology (accusative in (167b), dative in (167d), and nominative in (167f)) apparently does not help.

To accommodate these facts I propose the following theory of m-case: In languages with rich case morphology, like Icelandic, nominal categories have in their feature matrix, as one of the values of (+N), a feature (a case), where α takes different values depending on the context, subject to cross-linguistic variation. The following rules hold for Icelandic:

(168)a. α is ACC when governed by (+ACC),
      DAT when governed by (+DAT),
      GEN when governed by (+GEN).
b. Goal $\rightarrow$ $\alpha$ is DAT.

c. $\alpha$ is NOM when coindexed with Infl, 
   ACC when governed by (-N),
   GEN when governed by N.

The rules under (168a,b) apply in d-structure, or perhaps more correctly in 
the lexicon. We may call them "lexical cases", or, to distinguish between (168a,b) 
we may, call the former "lexical case" and the latter "thematic case" (cf. 
Vainikka(1985)). The rules in (168a) express the fact that the cases ACC, DAT, 
and GEN are assigned to the subcategorized arguments of certain verbs and 
prepositions (and possibly certain adjectives): these verbs and prepositions 
have a feature (+ACC), (+DAT), or (+GEN) as part of their lexical 
subcategorization. The rule (168b) is a default rule: for a Goal argument not 
assigned a lexical case the m-case feature is realized as DAT. The cases under 
(167c) are structural. Structural case is assigned anywhere in the syntax, but 
no NP assigned lexical case takes structural case. A realized (a case) feature is 
carried along under movement, cannot change in the course of a derivation, 
and is phonetically realized as a case inflection.

In Swedish only pronouns have the feature (a case). The rules for 
realization of (a case) are the following:

(169) $\alpha$ is NOM if coindexed with Infl or if governed by C, defined (-N), 
       OBJ if governed by V or P defined (-N), 
       GEN if governed by N.

The genitive rule accounts for forms like broken min. (-N) also assigns Case (in 
the sense "abstract case") in s-structure. Let us call a realized (a case) feature 
"m-case". Let CASE stand for m-case and Case. We now state the Case Filter as 
follows:

(170) All and only heads of chains have CASE (except if they are PRO).

(We may define CASE so as to include the "inherent case of PRO", and thus get 
rid of the except-condition in (170); cf. section 2, fn. 6 and 10.) In Icelandic, 
since all nominals have the (a case) feature, Case is irrelevant. In Swedish, on 
the other hand, only pronouns can satisfy the Case Filter by virtue of m-case, 
while all other NPs have to do so by virtue of Case, that is, they must be 
governed by (-N) or coindexed with Infl in s-structure.

This theory accounts for why, on the one hand morphologically case-marked 
nominals have a greater freedom of distribution in that they can occur in 
positions which are not Case-marked (in s-structure), but why, on the other 
hand they, too, must be associated with positions governed by a lexical head,
either by occurring in the position or via a chain.

Now consider Swedish Object Shift:

(171)a. \( S, C(S, Johan(I, inte(I, Infl(\_VP, köpte \_den)))) \)

b. \( S, köpte(S, Johan(I, den(I, inte(I, V, e_i)))) \)

The \( (a \text{ case}) \) feature of the pronoun is realized as \( (OBJ) \) in \( d \)-structure (171a). In this form it follows the pronoun through the derivation (V-to-I, VP-pruning, V-to-C, and Object Shift) to \( s \)-structure. The Case Filter, applying, we assume, to \( s \)-structure, is satisfied by virtue of the \( m \)-case.

6.3. Object Shift in Icelandic

As mentioned, Object Shift in Danish and Norwegian is pretty well indistinguishable from Object Shift in Swedish. In Icelandic, too, there is Object Shift, but, as discussed, Icelandic Object Shift differs from mainland Scandinavian Object Shift in that not only pronouns but all NPs can be moved, which we explained as a consequence of the fact that not only pronouns, but all nominals have \( m \)-case in Icelandic. Icelandic Object Shift differs from mainland Object Shift in another respect, too: it applies in embedded as well as in main clauses. Below are a few examples:

(172)a. Jón keypti ekki bókina.
   J. bought not the book

b. Jón keypti bókina ekki.

c. þáð var gott að hann keypti ekki bókina.
   it was good that

d. þáð var gott að hann keypti bókina ekki.

(173)a. Sigga setur aldrei hlutina á réttan stað.
   S. puts never the things in the right place

b. Sigga setur hlutina aldrei á réttan stað.

c. Eg veit ekki hvers vegna Sigga setur aldrei hlutina á
   I know not why
   réttan stað.

d. Eg veit ekki hvers vegna Sigga setur hlutina aldrei á
   réttan stad.

It will be shown here that this property follows directly from the theory of Icelandic sentence structure outlined in section 4.2, and the theory of Object Shift and empty heads outlined above.
6. Object Shift in embedded clauses

As discussed in section 4.2, Icelandic differs from the mainland Scandinavian languages in that Infl occurs to the left instead of on the right of S-adv -- which is to say, S-adv is adjoined to VP in Icelandic, to I' in the mainland Scandinavian languages. This entails that V-to-I has to move the verb across S-adv in Icelandic. The structure of for instance (172c) will be (174) following V-to-I:

\[(174) \ \_að (S, Jón (I, keypti (VP, ekki (VP, bókina)))\)

There can be no pruning of VP following V-to-I in Icelandic, since this would lead to a multiply branching I'; cf. Holmberg(1985b). In this structure the structural condition for Object Shift is satisfied: the object position is governed by an empty verb. Hence the following structure is well formed:

\[(175) \ (I, keypti (VP, bókina; (VP, ekki (VP, v, e;))))\]

The object is left-adjointed to VP, binding a trace in the object position. If the verb trace remains C-invisible the chain \((bókina, e)\) is well formed. (175) is the structure of the relevant part of (172d).

An auxiliary verb will block Object Shift in Icelandic just as in Swedish:

\[(176)a. \ að Jón hefur ekki keypt bókina.
  \hspace{1cm} \text{that J. has not bought the book}
  \hspace{1cm} \text{b. *að Jón hefur bókina ekki keypt.}
\]

The structure of (176b) will be (177), ill formed because the verb \textit{keypt} assigns Case to the trace, hence cannot form a chain with \textit{bókina}, so that the structure contains two chains, \textit{bókina} and \(e\), one of which has no \(\theta\)-role and the other is an unbound variable.

\[(177) \ að (S, Jón (I, hefur (VP, bókina; (VP, ekki (VP, (VP, keypt e;))))))\]

Incidentally, we can now see why the fact, mentioned in section 5.6.1, that Object Shift applies in control infinitivals is evidence that V-to-I applies in these infinitivals.

\[(178)a. \ Jón lofaði að lesa ekki bókina.
  \hspace{1cm} J. promised to read not the book
  \hspace{1cm} \text{b. Jón lofaði að lesa bókina ekki.}
\]
The structure of the infinitival clause in (178b) is (179) (cf. section 5.6.), parallel to (175).

\[(179) \; (S, a\delta (S PRO (I, lesa (VP bókina (VP ekki (VP v e)))))))\]

Crucially Object Shift adjoins the moved NP to VP, not to I' in Icelandic, since (180) is not well formed:

\[(180) \; *a\delta \; hann \; bókina \; keypti \; ekki\]

It follows from our theory of empty heads plus general theoretical assumptions that the object must adjoin to VP, the projection of the governor of the trace: The verb trace is not C-visible, hence it is not PG-visible either. The trace of the object can therefore be properly governed only by antecedent government. This requires that the antecedent stays within VP. Consider clause (c) of the definition of government, given in (99): In (175) the antecedent of e is within the maximal projection of the lexical governor of e, the verb trace. The structure (181), one possible analysis of (180), will be ruled out by the ECP, since e is not properly governed, neither by its antecedent nor by its lexical governor.

\[(181) \; a\delta \; Jón (I, bókina (I, keypti (VP ekki (VP v e))))\]

If v remains C-invisible, it will be PG-invisible as well, and since the antecedent is too far away, the trace e will not be properly governed. Alternatively v is C-visible and PG-visible, in which case e will be the head of a chain, and the structure will contain two chains, bókina and e, where the former has no θ-role and the latter is an unbound variable.

On the other hand the ECP will not rule out the following analysis of (180):

\[(182) \; a\delta \; Jón (I, bókina (I, keypti (VP ti ekki (VP v e))))\]

In this structure e is properly antecedent governed by the intermediate trace t.

Note that the Icelandic Object Shift construction differs from the Swedish one in that the shifted object is adjacent to the verb in Infl; compare for instance (175) and (171b). Hence if the verb in Infl retains Case-marking capacity, it will automatically assign Case to the shifted object (there is no problem caused by an intervening subject, as in Swedish). Assuming a verb moved to Infl does retain Case-marking capacity, the structure (182) will be ruled out as containing two chains, bókina and (t,e), the former lacking a θ-role and the latter lacking an operator to bind it.

However this would mean that the Case Filter is satisfied in the Icelandic Object Shift construction, e.g. (175), in two ways: the shifted object has
m-case and is assigned Case in s-structure. Such redundancy, although perhaps not ruled out on principled grounds, is unwelcome. The assumption that Case-marking capacity (the feature (-N)) can be brought along under V-to-I, but not under V-to-C is not especially attractive. Possibly the "Case-like" relation between the verb in Infl in (182) and the trace t is sufficient to exclude an analysis of the latter as an anaphor, even if the verb does not actually assign Case. Alternatively there is a general prohibition against adjunction to I' in Icelandic, a prohibition which does not hold in Swedish, for some reason; cf. section 4, fn. 16.

6.8.2. Raising to Object in Icelandic

This subchapter essentially duplicates the content of Holmberg (1984a) (excluding sect on 7 of that work), except that it is now embedded in a more complete theory of Object Shift.

There is a long-standing debate within generative grammar concerning the Acl construction as in I believe John to be a spy. The problem concerns how to represent correctly the dual nature of the "accusative": it is the subject of (to be) a spy, but behaves like an object of believe with respect to various syntactic processes, for instance case marking and passivization: I believe him/the to be..., John is believed to be a spy. Within Standard Theory (the "Aspects-model") the construction was usually analyzed as involving a transformation raising the subject of an embedded infinitival clause to the object position of the matrix verb. This type of analysis has been defended at length in Postal (1974). The derivation would be roughly as in (183), when embedded in a theory assuming traces and an S' level (unlike Standard Theory in these respects):

(183)a. I (\text{VP} \text{believe} (s_s, \text{John to be a spy})) (d-structure)

(183)b. I (\text{VP} \text{believe} \text{John} (s_s, \text{e to be a spy})) (s-structure)

Within GB theory this type of analysis cannot be assumed without modification of some of the central theoretical assumptions of the theory. Believe is a dyadic verb, taking a propositional object, i.e. it is subcategorized (\_ S'), where S' may be finite or infinitival. It assigns a \&-role to the complement S', and the VP headed by believe assigns a \&-role to the subject, I in (183a). The subject of the complement clause, John in (183a) is assigned a \&-role by the predicate of the complement clause (to be) a spy. However, if so, the putative s-structure (183b) violates the Projection Principle and the \&-criterion. The former requires that lexical properties, among them subcategorization properties, are preserved at all levels of representation. The \&-criterion requires that all arguments be assigned one and only one \&-role. In (183b) believe has two objects, John and S', in spite of being subcategorized only for S', in violation of the Projection Principle. If believe assigns a \&-role to the derived object
argument John this argument will have two \( \theta \)-roles, in violation of the \( \theta \)-criterion.

Bresnan(1982) proposes that believe-type verbs take two objects, NP and S', where NP is not assigned a \( \theta \)-role. Raising of the embedded subject to this NP position would then not violate the \( \theta \)-criterion, anymore than raising to the subject position of seem-type verbs. (If the complement is finite the NP position is optionally realized as it: I believe it that John is a spy.) This analysis is incompatible with a theory which identifies subcategorization by a lexical/thematic category such as typically verbs with \( \theta \)-role assignment, as in standard GB theory. In such a theory there can be no category subcategorized by a verb, which is not assigned a \( \theta \)-role.

Chomsky(1980, LGB) proposes that believe-type verbs have the exceptional property of being able to govern and Case-mark down into an infinitival complement clause (in LGB via "S'-deletion", which deletes the S'-boundary of an infinitival complement). Versions of this hypothesis are found in Stowell(1981) and Kayne(1981b). Hence (183a) (possibly minus the S'-boundary) will be the s- as well as the d-structure of I believe John to be a spy. The Projection Principle and the \( \theta \)-criterion are observed. The fact that the embedded subject behaves like an object of believe with respect to case-marking, passivization, etc. is a consequence of the subject being governed by believe. Within GB theory this analysis has been nearly universally accepted. However Marantz(1984), basically a GB-type theory, argues for a raising-type analysis of the AcI construction (cf. ibid.: 91ff.); see also Koster(1984).

It has been noted on several occasions (e.g. Stowell(1983)) that there are constituency tests which support the analysis according to which the AcI construction is a clause in s-structure, in English. Consider in particular (184a): if the structure were believe NP S', as in (183b), we would expect it to be acceptable, on a par with (184b) -- which it is not.

(184)a. *I believe John myself to be a spy.

b. I persuaded John myself to become a spy.

However, Thráinsson(1979) noted that precisely this constituency test seems to indicate that the structure V NP S' is correct for Icelandic believe-type verbs. Thráinsson's example was (185):

(185) Jón telur míg, i barnaskap sinum, hafa étið hákarlinn.

J. believes me in foolishness his(REFL) have eaten the shark

"In his foolishness John thinks I have eaten the shark."

In this sentence míg, the subject of the embedded AcI construction míg hafa étið hákarlinn occurs to the left of the adverbial i barnaskap sinum, which is a constituent of the matrix clause. Hence míg must be in the matrix clause, raised
across the matrix clause adverbial. This has been interpreted as strong evidence that raising to object is a rule-type provided by UG; cf. Andrews (1981); cf. also Marantz (1984: 315).

However, in the light of the preceding section it is clear that the movement rule raising the embedded subject in (185) is not the classical "Raising to Object", but Object Shift. This means that the structure (185) does not provide any kind of evidence that the basic principles of GB theory need to be modified or abandoned. Object Shift does not violate the Projection Principle or the θ-criterion since the moved NP does not land in an argument position, but is adjoined to VP. The structure of the relevant portion of (185) after movement is (186); for ease of exposition we regard it as an embedded sentence, and we assume Chomsky's hypothesis that the AcI is a reduced clause, lacking C and S'.

(186) (I, telur (VP migi (VP PP barnaskap simum) (VP v (S ei hafa etið hákarlinn))))

That the raising rule involved is Object Shift is particularly obvious when we compare the corresponding Swedish construction: the differences with regard to how the raising rule behaves are just those we would expect if the rule in question is Object Shift.

1. In Swedish it only applies successfully when the raised nominal is an unexpanded pronoun, while it applies to all NPs in Icelandic.

(187)a. Dom anser honom alla vara dum.  
   they consider him all be stupid
   "They all consider him to be stupid."
   b. *Dom anser Gunnar alla vara dum.
   c. *Dom anser henne där alla vara dum.  
   her there

(188)a. þeir telja hann allir vera heimskan.  
   they consider him all be stupid
   b. þeir telja Gunnar allir vera heimskan.
   c. þeir telja hana barna allir vera heimskan.14

2. In Swedish the raising cannot apply if the matrix clause is embedded, in Icelandic it can:

(189)a. *Jag vet inte om dom anser honom alla vara dum.
   I know not if they consider him all be stupid
   b. Jag vet inte om dom alla anser honom vara dum.

(190) Eg veit ekki hvort þeir telja hann allir vera heimskan.
I know not whether they consider him all be stupid

3. In Swedish the subject of the AcI can be left unraised if it is a pronoun, and it must be, if it is anything but an unexpanded, unstressed pronoun (compare (187)). In Icelandic it can always be left in situ, except if it is an unexpanded, unstressed pronoun.

(191)a. Dom anser alla honom vara dum.
   b. Dom anser alla Gunnar vara dum.
   c. Dom anser alla honom där vara dum.
   d. Dom anser alla HONOM vara dum.

(192)a. ßpeir telja allir hann vera heimskan.
   b. ßpeir telja allir Gunnar vera heimskan.
   c. ßpeir telja allir hann barna vera heimskan.
   d. ßpeir telja allir HANN vera heimskan.

This parallels the possibilities for Object Shift in a construction like for instance (193) and (194):

(193)a. (?)Dom känner alla honom.
       they know all him
   b. Dom känner alla Gunnar/ honom där/ HONOM.
   c. Dom känner honom alla.

(194)a. ßpeir þekkja allir hann.
       they know all him
   b. ßpeir þekkja allir Gunnar/ hann barna/ HANN.¹⁵

Note that the possibility of leaving the subject of the AcI unraised is strong evidence that the rule in question is not the classical Raising to Object, since the latter is a typical obligatory rule -- the case-marking and the syntactic behaviour of the subject of the AcI depended on the application of Raising to Object, in that theory.

Another language reported to show "strong evidence" of Raising to Object similar to the alleged evidence from Icelandic is Quechua (cf. Cole and Hermon(1981)). However, Lefebvre and Muysken(1982) argue that the rule in question is not Raising to Object, but a rule which, like Object Shift, does not violate any of the fundamental principles of GB theory. In fact the rule they formulate shows at least some formal similarities with Object Shift: it is dependent on the moved category bearing case (the rule is even formulated as "Move CASE"), it is optional, and the landing site is not an argument position (They postulate a "non-Ø position" in VP as the landing site. From their
examples it looks like adjunction to VP or I').

As shown by Bennis and Hoekstra (1985) Dutch has a rule very similar to Object Shift -- this is the topic of the next subsection. This rule can also raise the subject of an AcI clause, giving the impression of Raising to Object, an impression which they show to be false.\footnote{16}

All in all it seems that the case for Raising to Object is not particularly strong at the moment -- or to put it more carefully, there does not seem to be much by way of hard and fast empirical evidence against Chomsky's hypothesis that the AcI construction is a (clausal) constituent in s-structure as well as in d-structure.

6.9. Object Shift in Dutch and the typology of ECs

Bennis and Hoekstra (1985) (henceforth BH) claim that a rule similar to Object Shift is responsible for the word order contrast between (195a,b):

(195)a. dat Jan in Amsterdam zijn vriendin ontmoette
    that J. in A. his girlfriend met
  b. dat Jan zijn vriendin in Amsterdam ontmoette

(195a) would be the d-structure word order, while in (195b) the object zijn vriendin has shifted leftwards, around the adverbial. The structural description of (195b) would thus be roughly (196):

(196) [\( \bar{S} \bar{V}_P \bar{P}_V \bar{P}_P \bar{P}_E \)]

The principal advantage of this analysis, as compared with an analysis where the object in (175b) is base-generated in VP-initial position, is that the structure does not violate the "adjacency condition on Case-marking". Hence no special mechanisms need be assumed to ensure that the object NP is Case-marked (such as the "abstract VP-initial Case-marker" postulated in Koopman (1984)). Object Case-marking operates in Dutch just like in English and the Scandinavian languages, except that the direction of Case-marking is leftwards in Dutch, in the case of verbs (while prepositions assign Case rightwards), hence the OV word order. Case is assigned under "strict government", that is government based on "first-branching-node c-command", in BH just like in the present work. Given binary branching (assumed by BH) this entails adjacency in the case of ordinary Case-marking. Thus objective Case is assigned in (196) by the verb to its sister trace. We may add that object \( \theta \)-role-assignment, too, can proceed as usual, subject to the usual sisterhood condition, given the analysis in (196). We can thus maintain that sisterhood is a universal condition on \( \theta \)-role-assignment.

Note at this point that Dutch Object Shift differs from the Scandinavian rule
in that the trace is assigned Case as well as θ-role. This difference, I claim, accounts for certain other important differences between the two rules/constructions: (a) Object Shift is not restricted to moving pronouns in Dutch, although Dutch is like the mainland Scandinavian languages in that basically only pronouns have m-case, (b) it is not restricted to main clauses in Dutch, the way it is in mainland Scandinavian, and (c) the trace of Object Shift can license a parasitic gap in Dutch, but not in Scandinavian.

Consider first the fact that Dutch Object Shift is not restricted to moving pronouns: If the trace is assigned Case it should be the head of a chain, given our assumptions. The shifted object and the trace do not then form a chain in the sense "A-chain", but an A-bar-chain, that is an operator-variable type of binding relation -- and consequently the shifted object is not subject to the Case Filter. Second, Object Shift was restricted to main clauses in mainland Scandinavian because it crucially required that the main verb was moved, in order for the trace of Object Shift not to be Case-marked. Since Dutch Object Shift is compatible with a Case-marked trace, it may well apply in embedded as well as in main clauses.

The third distinguishing property is the most interesting one: If the trace of Object Shift in Dutch is the head of a chain, and the object-trace relation an operator-variable type relation, the trace is predicted to have certain other properties. BH show that the trace does appear to exhibit at least one typical property of variables: it licenses a parasitic gap. This is seen in constructions like (197a,b,c):

(197)a. Jan heeft die boeken (zonder e te bekijken) weggelegd.
   J. has those books without to inspect away put
   "John put those books away without inspecting them"

b. Ik ben mijn oom (na e jaren niet gezien te hebben) gisteren weer tegen komen.
   I am my uncle after years not seem to have yesterday again against come

c. Ik heb deze scriptie (alvorens definitief e te beoordelen)
   eerst aan Jan voorgelgd.
   I have this term paper before definitively to judge
   first to J. shown

These constructions contain an adverbial clause with a gap, represented as e in the examples. This gap is like a parasitic gap in every respect -- in particular it is Case-marked, and it can be substituted by an overt pronoun, for instance in (197a) ze "it" -- except that there is no obvious real gap with a binder licensing the putative parasitic gap. However, given that the structures all involve Dutch Object Shift there will be a real gap and a binder for the parasitic gap. The structure of e.g. (197a) will be roughly (198), prior to V-to-C:
(198)a. Jan \( \text{VP die boeken} \) \( \text{VP} \) \( \text{S} \), zonder PRO ei te bekijken\( \)
\( \text{VP t weggelegd heeft} \))

In this structure the "real gap" \( t \) and the parasitic gap \( e \) do not c-command each other, and both are bound by the NP \( \text{die boeken} \). That is to say, the structure satisfies the conditions on the parasitic gap construction as described in Chomsky (1982), provided that the real gap \( t \) is a variable: an NP-trace does not license a parasitic gap, as discussed in section 6.3.

In section 6.3, we saw that the trace left by Object Shift in Swedish/Scandinavian exhibits none of the properties associated with variables: it does not license a parasitic gap, it must be bound in its governing category, it does not give rise to a cross-over effect, and, given the theory of empty heads sketched in section 6.5, it does not have Case. The trace left by Dutch Object Shift does appear to license a parasitic gap, and does appear to have Case. On the other hand it does not give rise to a cross-over effect (cf. BH: fn.12), and it appears that it must be bound in its governing category, as indicated by the examples in (199): the subject of a finite clause cannot be moved by Object Shift, but the subject of a small clause can, since in the latter case the trace is bound in its GC, the matrix \( S \):

(199)a. Ik zag met een verrekijker dat iemand het eiland aftuurde.
\[ I \text{ saw with binoculars that someone the island along peered} \]

b. Ik zag \text{iemand:} met een verrekijker \( \text{S}, \text{dat ei het eiland aantuured} \)
c. Ik zag \text{iemand:} met een verrekijker \( \text{SC}, \text{ei het eiland aantuuren} \).

Dutch permits "that-trace filter violations", so (199b) should not be ill formed on this account. The string \( \text{Ik zag iemand met een verrekijker het eiland aantuuren} \) is ambiguous: the adverbial \( \text{met een verrekijker} \) may qualify the main clause or the subordinate clause. On the former reading the structure must be as in (199c), the SC subject being raised across the matrix adverbial; cf. discussion of (186) above.

In section 6.3, we accounted for the fact that the trace of Swedish/Scandinavian Object Shift does not exhibit the properties of a variable by adopting a contextual definition of ECs based on inherent properties of the binder (an EC bound by an operator is a variable, an EC bound by a non-operator is an anaphor), rather than in terms of the structural position of the binder. The shifted object in the Object Shift construction is not intrinsically operator-like, nor is it focused, hence the EC bound by it is an anaphor -- that was the argument. BH, on the other hand, account for the (partly) variable-like behaviour of the trace of Dutch Object Shift by recourse
to the contextual definition of ECs based on structural position of the binder: the binder, i.e. the shifted NP, is adjoined to VP (or I'), an A-bar position, and therefore the NP bound by it is a variable, according to this definition. On the other hand the trace of Dutch Object Shift does not exhibit all the properties typical of "canonical variables", such as wh-traces.

This suggests a modification of the theory of nominal ECs along the following lines: The standard classification of non-pronominal ECs into anaphors and variables is too coarse: there is at least one additional class of non-pronominal ECs, call them "semi-variables", which are like variables in that they have Case but like NP-trace in that they are non-operator-bound. For the sake of presentation, assume the two binary features (+/-Case) and (+/-O-bound). We then have the following classification of non-pronominal ECs (where "O-bound" = "locally operator-bound"):

(200)1. (+Case, +O-bound), i.e. variables, for instance wh-trace,
2. (+Case, -O-bound), i.e. semi-variables, for instance the trace of Dutch Object Shift,
3. (-Case, -O-bound), i.e. anaphors, for instance the trace in the passive construction or the trace of Scandinavian Object Shift.

The fourth logically possible type, (-Case, +O-bound), is presumably always excluded by the Case Filter, not being member of a chain with Case. Variables and semi-variables both license parasitic gaps. That is to say, this property is dependent on the feature (+Case). Only variables give rise to the cross-over effect, and only variables need not be bound in their GC. These properties, then, depend on the feature (+O-bound).

In a sense this theory resolves the question whether ECs are defined contextually (in terms of the nature of the binder or the binding relation) or by intrinsic features, in particular Case: certain properties of ECs depend on the intrinsic feature (+/-Case), other properties depend on the nature of the binder.

BH point out that the trace of Heavy NP Shift (HNPS) (in English, but it holds true of the SScandinavian languages as well) seems to have the same properties as the trace of Dutch Object Shift, i.e. it would be another semi-variable: It licenses parasitic gaps (as noted by Engdahl (1983)); cf. (201a) but does not give rise to a cross-over effect (cf. (201b)), and it cannot be bound outside its governing category, (201c):

(201)a. John offended t, by not recognizing e immediately, his favourite uncle from Cleveland.
   b. I introduced to John his new teacher.
   c. *I ordered John to return e to the library, because it's my duty, all the books on Icelandic grammar.
The theory of non-pronominal ECs in (200) should be taken as a suggestion. In the present context it raises as many questions as it solves. In particular we would have to explain why e.g. (202) is not well formed with the object EC a semi-variable:

(202) *Har Johan böken inte läst er?

This extends to all the structures discussed in section 6.7, involving Object Shift across a preposition, or a particle, etc., all of which we ruled out by the binding principles on the assumption that the trace had to be an anaphor.

BH pose the question (cf. their fn. 12) why there is HNPS in English but not in Dutch, and why there is Object Shift in Dutch but not in English, and they suggest it may have to do with the direction of branching. English being VO and Dutch being OV, HNPS (of the object) in Dutch, and Object Shift in English would both have to move an object across the verb, and that may be ruled out for some reason. On the other hand the Scandinavian languages show that Object Shift is possible in a VO language -- provided there is verb movement, or more generally, provided there is a way to prevent Case-assignment to the trace of Object Shift, for instance by verb movement, as in the Scandinavian languages. But the Object Shift construction will have different properties in such a case: it will be dependent on m-case, and it will not license a parasitic gap. It holds for English, then, that it cannot have "Dutch Object Shift" because it is VO, and it cannot have "Scandinavian Object Shift" because it does not have verb movement (of the right sort, that is movement of main verbs), What needs to be explained is why there should be a "crossing prohibition" on Dutch Object Shift and HNPS, that is on semi-variable-binding, in terms of (200). If a plausible explanation can be found, the theory in (200) would be strengthened, and the theories of Dutch Object Shift in BH and Scandinavian Object Shift in the present work would be fully compatible and mutually supportive.

6.10. Why is Object Shift (near-) obligatory?

The final property of Object Shift which we set out to explain was why Object Shift is obligatory in certain cases (and dialects) but not in other cases (and dialects). The data which will be considered here are the following:

In Swedish Object Shift is anything from optional through preferred to obligatory, depending on dialect/idialect, when the pronoun is weakly stressed. If the pronoun is stressed Object Shift is impossible. Thus speakers vary somewhat in their judgement of a sentence like (183) (where the object is weakly stressed):
(203)  Jag såg inte dej.
    I saw not you

In Danish (at least standard Danish) Object Shift seems to be rather more obligatory than in standard Swedish. In Norwegian there is more variation (cf. Faarlund(1977)).

Other factors which, more peripherally, may affect the obligatoriness of Object Shift, again subject to dialectal/idiomatic variation, are the choice of S-adv and the choice of pronoun. Object Shift may be slightly less obligatory in sentences with a "light" (cliticizable?) S-adv such as typically the negation inte than in sentences with a "heavier" S-adv such as egentligen "actually", möjligen "possibly", etc. In my own dialect Object Shift is slightly less obligatory with the two-syllable pronouns honom "him" and henne "her" than with mej "me" and dej "you" and especially den/det "it". Thus to me (204a) seems as good as (204b), contrasting with (204c,d). However the difference seems to be only "stylistic".

(204)a.  Jag såg inte honom genast.
    I saw not him at once
    b.  Jag såg honom inte genast.
    c.  (?)Jag såg inte den genast.
        I saw not it at once
    d.  ?Jag såg faktiskt den genast.
        actually

In Icelandic Object Shift is pretty well obligatory when the object is a weakly stressed pronoun, but optional otherwise. The only case where Object Shift is excluded is when the object is "very heavy". This is exemplified in (205):

(205)a.  *Jón keypti ekki hann.
        J. bought not it
    b.  Jón keypti hann ekki.
    c.  Jón keypti ekki bök Chomskys
        J. bought not Chomsky's book
    d.  Jón keypti bök Chomskys ekki
    e.  Jón keypti ekki HANN.
    f.  Jón keypti HANN ekki.
    g.  Jón keypti ekki bökina sem var með gölluðu kapunni.
        J. bought not the book which had a frayed cover
    h.  *Jón keypti bökina sem var með gölluðu kapunni ekki.

Object Shift of pronouns has something in common with cliticization of object pronouns as found in many languages of the world (including the
Romance, the Slavonic, the Semitic and many other languages). The pronouns moved by Object Shift have (almost) exactly the same properties as e.g. the object clitics in French, as studied in Kayne(1975): They cannot be stressed, they cannot be modified, and they cannot be conjoined. Compare French (206) and Swedish (207):

\[(206)a. \text{Je vous connais.} \]
\[ I \ you \ know \]
\[ "I \ know \ you." \]
\[ b. \text{*Je vous deux connais.} \]
\[ you \ two \]
\[ c. \text{Je le et la connais.} \]
\[ him \ and \ her \]

\[(207)a. \text{Jag känner er inte.} \]
\[ I \ know \ you \ not \]
\[ b. \text{*Jag känner er två inte.} \]
\[ you \ two \]
\[ c. \text{*Jag känner honom och henne inte.} \]
\[ him \ and \ her \]

The shifted pronouns are not, however, clitics in the same syntactic sense as e.g. the French weak object pronouns me, le, etc. The latter always occur attached to a verb, as shown most clearly by the fact that they move with the verb, as in (208), analyzed as a case of V-to-C, following den Besten(1977/1983), Kayne(1983a):

\[(208)a. \text{Pourquoi le cachaient-ils?} \]
\[ why \ it \ hid \ they \]

The weak object pronouns in Scandinavian are not necessarily even adjacent to the verb (that is when the subject remains in situ), and they do not move with the verb, except in some cases, notably that of weak reflexives in Swedish. As argued in Holmberg(1983c, 1984a; cf. also discussion of examples (134-136) above) the latter are, indeed clitics (cf. also Taraldsen(1984)). Thus we have the word order contrast in (209), in Swedish:

\[(209)a. \text{*Varför gömde honom barnen?} \]
\[ why \ hid \ him \ the \ children \]
\[ b. \text{Varför gömde sej barnen?} \]
\[ why \ hid \ self \ the \ children \]

In spite of this difference between the weak object pronouns in Scandinavian and e.g. French, it may be that the reason why (210a,b) are ill
formed is basically the same (assuming now for the sake of argument a dialect where (210b) is ill formed)

(210)a. *Je connais la.
   b. *Jag köpte inte den.

The reason, I propose, is that the weak pronoun forms are not capable of occurring in argument positions; they are somehow not capable of being arguments, on their own. The present framework offers a fairly elegant way of expressing this defective nature of weak pronouns: they are only (+N), unmarked for (V). This distinguishes them from other pronouns (more generally Names). We also need to distinguish weak pronouns from common nouns. We can do this by postulating the feature (+/-max), where (+max) means "inherently maximal": weak pronouns, unlike common nouns are (+max), they have no projection, they take no complement or specifier. Hence weak pronouns cannot be made (–V) by the help of a determiner.

Since the weak pronouns are only (+N), they cannot make a chain on their own, but only through binding a (–V) category, in the case of the Scandinavian and French weak object pronouns an EC in the object position. The distribution of features in the French clitic construction and the Scandinavian Object Shift construction is as shown in (211):

(211)a. \( \text{vp}'(v \text{ la connait) e }) \)
   \( [+N] [+V] [-V] \)
   
   b. \( (I', \text{ den (I', inte (I', v e )))} \)
   \( [+N] [+V] [-V] \)

The weak pronoun and the EC form a chain which is (–V,+N), hence capable of bearing Case (by virtue of (+N)) and θ-role (by virtue of (–V)). I have tentatively assumed that the object EC is unmarked for (N). It may be the case that it cannot be (+N), if this means that it must be Case-marked. The (–N) feature of the verb is satisfied by the weak pronoun, hence a (+N)-marked object EC would violate the Case Filter (in French and the Scandinavian languages, but apparently not necessarily in languages permitting clitic doubling, such as Spanish; cf. e.g. Jaeggli(1982)). (In the French clitic construction the clitic "absorbs" the Case feature of the verb so that the verb (la connait) is just (+V). (How the shifted object in the Scandinavian Object Shift construction satisfies the (–N) feature of the verb was discussed in section 6.7)).

The property of being or not being a clitic, distinguishing between the French and the Scandinavian weak pronouns, could be expressed in terms of a subcategorization feature (.–V), which the French forms have but the Scandinavian forms do not have. On the other hand we need to distinguish clitics from (derivational) affixes. A derivational affix is the head of the
category made up by the affix and its sister root -- since the affix, not the root, determines the categorial status of this category (cf. e.g. Trommelen and Zonneveld(1986) and references there). Affixes are also assumed to be subcategorized for a particular category, e.g. English -ing would be subcategorized (+V,+L_), in our feature framework, and the property of being a head is related to the property of having a subcategorization feature. A clitic is crucially not a head in this sense: the category immediately dominating the clitic and its host verb is a verb. Hence we need some additional feature, distinguishing clitics from affixes. We may postulate a feature (+/-aff) for this purpose.

We thus have the following classes of pronominal elements:

(212) strong form       weak non-clitic form   weak clitic form

\[
\begin{align*}
+\text{N} & & +\text{N} & & +\text{N} \\
-\text{V} & & \%\text{V} & & \%\text{V} \\
\ & & +\text{max} & & -+\text{V}
\end{align*}
\]

We thus account for why non-pronominal NPs are shifted only optionally, while weakly stressed, unexpanded pronouns are shifted obligatorily in languages such as Icelandic, where non-pronominal NPs can be shifted at all. The former, but not the latter are complete arguments, i.e. they are (+N, -V), and hence may occupy argument positions. Also expanded pronouns are shifted only optionally in Icelandic. This is because they are strong form pronouns, i.e. complete arguments. Expanded pronouns could not be weak form pronouns if the latter are necessarily inherently maximal, as indicated by the feature (+max) in (212). As discussed in section 6.7.1, in mainland Scandinavian expanded pronouns cannot be shifted at all, because the m-case feature is a "degenerate", non-percolating feature in these languages, and hence a shifted expanded pronoun cannot satisfy the Case Filter.

We can now address the question why stressed pronouns cannot be shifted at all in mainland Scandinavian, while they are shifted optionally in Icelandic. Weak form pronouns are incapable of bearing stress. Now it seems generally correct to say that focal stress is not assigned to words but to phrases (although the stress is ultimately born by a syllable). This may be because only (maximal) phrases, not words, can be focused. Whatever the ultimate reason, we may postulate the redundancy rule (213):

(213) \[X^0 \rightarrow -focal\ stress\]

This excludes the possibility that a weak pronoun bears focal stress, because weak pronouns are inherently maximal \(X^0\) elements. Therefore a stressed pronoun cannot be (+max), i.e. it cannot be a weak pronoun, but must be a strong pronoun, which entails that it is shifted optionally in Icelandic, and not shifted at all in mainland Scandinavian.
The reason why a weakly stressed, unexpanded pronoun can be left in situ in many Scandinavian dialects, I propose, is that in these dialects even a weakly stressed and unexpanded pronoun can be analyzed as a strong form pronoun. It is not unexpected to find a lot of dialectal and idiolectal variation on this point. It is also not unexpected to find dialects where some pronouns but not others can be analyzed as either strong or weak, if they are weakly stressed and unexpanded — as in the case of the dialect referred to above where honom and henne can be left in situ (i.e. can be analyzed as strong forms) but not den/det.

The hypothesis that weakly stressed and unexpanded pronouns which are not shifted are really strong forms is virtually untestable in dialects which do not make a phonetic distinction between weak and strong forms (e.g. in standard educated Swedish). But in many dialects the weak and the strong form is phonetically clearly distinct. For instance in some Swedish dialects there is a weak form na vs. the strong forms honom/henne "him/her". We predict that a pronoun left in situ can never have the weak form. This prediction is correct.

(214)a. Såg du na faktiskt?
   saw you him actually
b. *Såg du faktiskt na?

(The form na is clearly phonetically a clitic; for instance, you cannot separate it from the preceding word by a pause. This does not necessarily mean that it is a clitic in the syntactic sense (in the sense of (213)). The fact that it is cliticized outside the subject pronoun in a case like (214a) may indicate that it is not a syntactic clitic.) We would have a stronger confirmation of our hypothesis if we found that the strong forms honom/henne, even when weakly stressed, must be left in situ, in this dialect. However the informants I have consulted do not seem to use the forms honom/henne except when stressed. They also tend to accept shifting weakly stressed honom/henne, but this may be because they are also familiar with standard (and written) Swedish, where these forms are shifted.

One consequence of this account of the near-obligatoriness of Object Shift is that Object Shift should apply irrespective of the presence of S-adv, i.e. whether or not the movement affects the string. That is to say, the structure of (216a) is (b) (in particular in dialects which do not really permit analysis of a weakly stressed, simple pronoun as a strong form):

(216)a. Jag köpte den.
   I bought it
b. $(S^n\text{Jag} (S\text{köpte} (S e (I^i\text{den} (I^v e^i))))))$

This is harmless (except that it presupposes the possibility of string-vacuous
movement, a possibility which some linguists have preferred to exclude; cf. Chomsky (1986a). However we also have to assume movement of a weak object pronoun in cases where the main verb is left in situ, as in (217) (in the case of dialects which do not permit analyzing a weakly stressed, unexpanded pronoun as a strong form):

(217)a. att jag inte köpte den
  *that I not bought it*
  b. Jag har inte köpt den.
     *I have not bought it*
  c. Litar du inte på mej?
     *rely you not on me*
  d. Jag kastade ut den.
     *I threw out it*

I assume the pronoun in this case is cliticized to the adjacent head. The structure of for instance the relevant portion of (217) will then be (218):

(218)  \( I, \text{inte} (I, v (\text{köp} \text{t den} i) \text{e} \text{i})) \)

This requires some modification of the typology of pronominal elements in (212) and generally the "standard theory" of clitics. Den and other weak pronouns are not clitics in the sense of (212), as shown by the fact that they do not follow the verb under movement to C (cf. (209)), yet they do cliticize to the adjacent head, if the possibility of Object Shift is blocked as in (218). According to the theory of clitics which may be called "standard" (within GB theory) there is cliticization in the syntax and cliticization in PF.\(^{17}\) The former is commonly taken to be base-generation of the clitic in clitic position (Borer (1984: 34ff.) and esp. Jaeggli (1982: 15ff.) and references there) -- let us say, by virtue of the subcategorization feature of the clitics. Cliticization in PF is not described in the works mentioned, but cf. Zwicky (1982). It is a phonological process, which perhaps requires adjacency between the clitic and the host, like contraction. I propose that there is, in addition, cliticization of weak pronouns by movement in the syntax. (218) would be an example of this. The cliticization in (218) must take place in the syntax, before PF, being forced by the binding principles, the same principles which force Object Shift. In fact we may refer to base-generation of clitics in clitic position as "cliticization in the lexicon", in which case we have cliticization in three components, the lexicon, the syntax (of which (218) would be an example), and PF.

We have to ensure, however, that the pronouns which cliticize to the verb in the syntax, as in (218), do not follow the verb under movement to C. We could do this by extrinsic ordering, for instance by stipulating that cliticization always follows Move a. There may be more interesting solutions, however. The question is why for instance (218a) or (219), where the object pronoun has
followed the verb to C, are ill formed:

(219) *Känner dej Sara?

\begin{verbatim}
knows you S.
\end{verbatim}

I suggest, essentially following Holmberg(1984a) and Taraldsen(1984), that the reason is that the trace of the pronoun is not properly identified. Assume, following Taraldsen(1984), that the index of a "lexical clitic" such as the French object clitic percolates to the V-node dominating it, as shown in (220):

\begin{verbatim}
(220) \( \begin{array}{c}
\text{VP} \\
V_i \\
\end{array} \begin{array}{c}
\text{CL}_1 \\
V \\
e_i \end{array} \) 
\end{verbatim}

In this way the clitic is able to c-command, and hence bind an EC. Movement of the verb with the clitic will leave a verb trace bearing the index of the clitic. This means that the verb may in principle be moved out of the governing category of the EC associated with the clitic, since the EC is bound by the index on the verb trace. This is how a structure like (220), the structure of (208), manages to satisfy principle A of the binding theory.

(221) Pourquoi (1e_i cachaient) (\begin{array}{c}
S \\
ils \\
v_i \\
e_i \end{array} )

The clitic itself and its host verb is outside S, the governing category of the object EC, but that it is permitted since the EC is bound by the indexed verb trace.

Assume now that the index of a "syntactic clitic", such as the object pronoun in (218), does not percolate to the dominating V-node (the syntactic clitic is even less affix-like than the lexical clitic). How, then, can Principle A be satisfied. Let us (somewhat in the spirit of Bouchard(1984)) say that an anaphoric trace which satisfies Principle A is "properly identified" (by its antecedent). One way (the "standard way") an EC can be properly identified is by being bound in its GC. But in (218) the object EC is properly identified even though the clitic (or rather its index) does not strictly c-command the EC. Let us say the EC is properly identified by virtue of the adjacency relation between the clitic and the EC (together with lexical government by the verb). This means that the verb and the clitic can at most move string-vacuously (as in the case of V-to-I in e.g. Swedish), since otherwise the object EC will not be properly identified. The structure of e.g. (189a) will be (222), where the object EC violates Principle A (or, if you like, the "proper identification condition").

(222) Varför (gömde homoni) (\begin{array}{c}
S \\
barnen \\
v \\
e_i \end{array} )
As discussed in Holmberg (1983c, 1984a) and Taraldsen (1984) this is compatible with an analysis of the Swedish weak reflexives as the same kind of clitic as weak object pronouns (as a syntactic clitic in our current terminology), even though the reflexives can be moved along with the verb, in Swedish. This is because in this case there is another binder of the object EC available in the sentence, namely the subject (on the well-motivated assumption that the reflexive verb construction is essentially like a passive or unaccusative construction with regard to binding relations; cf. also Everaert (1986)). The structure of e.g. (209b) will be (223):

(223) Varför (gömde sej) (s barnen v e)

Why movement of the weak reflexive to C is possible only in Swedish, among the Scandinavian languages is a question I will not go into here (cf. Taraldsen (1984) for a proposal).

There is another set of facts, highly pertinent in this connection, but which I will not go into here in any detail. As mentioned briefly in Holmberg (1984a) and discussed in Henningsson (1985) weak object pronouns may in fact be moved along with the verb to C in certain constructions in Swedish (again in contrast with the other Scandinavian languages). Many Swedish speakers, although they reject (208a) and (219), will accept for instance (224):

(224)a. Varför gör mej Helge alltid så irriterad?  
why makes me H. always so irritated

b. I går kallade mej farsan för tjockskalle.  
yesterday called me daddy for blockhead  
"Yesterday daddy called me blockhead."

c. Ansåg dej inte lärarna alltför uppkäftigt?  
considered you not the teachers too impertinent  
"Didn’t the teachers consider you too impertinent?"

d. Gav dej snuten körkortet tillbaka?  
gave you the cops the driving license back  
"Did the cops give you back your driving license?"

In these constructions the object pronoun precedes the subject, apparently as a result of having followed the verb under V-to-C. This shows that weak object pronouns can cliticize to the verb. In this sense (224) can be taken to support the analysis (218), and the hypothesis that weak object pronouns can be "syntactic clitics". On the other hand (224) requires some modification of the explanation just proposed of (219) and similar structures. Note that in all the structures in (224) the object pronoun is a SC subject (the double object construction, too, is a SC, as discussed). This appears to be a necessary condition for the pronoun to be able to follow the verb to C, hence the contrast between (225a,b):
(225)a. *Såg dej Erik?
   saw you E.
   "Did Eric see you?"

b. ?Såg dej Erik komma?
   come

A possible explanation would draw on the fact that a SC subject EC is "better identified" than an object EC, being governed not only by the governing verb (trace), but also, in some sense, by the SC predicate. It seems that the extra identification/government provided by the SC predicate is sufficient to (somewhat marginally) license an EC in (226), even though the EC, following our discussion above, is not properly bound by the (index of) the cliticized weak pronoun, and is not adjacent to the weak pronoun.

(226) (såg dej₁) (S Erik v (SC₁ komma))

However, this requires certain modifications of notions like government and identification of ECs, a task which I prefer to leave for future research.18

Footnotes to section 6

1. As will be discussed below there are certain constraints on objects in pre-adjetival position. Typically pronouns are better than non-pronominal NPs.

2. Chomsky(1986a) presents an alternative theory of parasitic gaps, in which the parasitic gap is taken to be bound not by the binder of the real gap but by an empty operator (see also Contreras(1984)). He also adduces some examples which (appear to) violate the anti-c-command condition (31b). This is of no consequence in the present context, since condition (31c) holds in the new theory as well: the real gap must be a variable.

3. This means that the trace in (i) is not properly governed by destruction, but by its antecedent (cf. section 2.5, fn. 11).

   (i) (NP the city's₁ (N₁ destruction e₁))

4. Alternatively the structure is (i) (closely following Fiva(1985a,b)):

   (i) (NP Mary₁ (NP ←s (N₁ n e₁)))
5. The subject can be a PP in this case because the SC is a "possessive" as opposed to a "predicative" SC: cf. the Russian construction *Ivans kniga*, literally "With Ivan a book", i.e. "Ivan has a book", discussed by Kayne(1981d): such possessive clausal constructions are found in many languages, including, if Kayne is right concerning the double object construction, English and, I assume, the Scandinavian languages.

6. Assuming an analysis of NP along the lines of Hellan(1986) or Abney(1986) expressions like Mary's, etc. actually contain an empty maximal category, the structure being roughly (i):

\[
(i) \quad \text{DP} \text{Mary (D,} -s \text{ (NP e ))}
\]

A case like the Swedish (ii) would be a case of an empty head in their theories, too, unless the analysis (iiib) is assumed rather than (iiia):

\[
(ii) \quad \text{Jag gillar inte Saras röda stövlar, men Anna} gula är snygg.
\]

\[
I \text{ like not S}'s \text{ red boots but A's yellow are pretty}
\]

\[
(iii) a. \quad \text{DP} \text{Anna (D,} -s \text{ (NP } gula \text{ e ))}
\]

\[
b. \quad \text{DP} \text{Anna (D,} -s \text{ (NP AF } gula\text{))}
\]

7. In this theory we cannot uphold the assumption, made e.g. in LGB, that variables only occur in A-positions. The intermediate trace in the XP-position in a case like (100) is locally bound by the operator wh, hence a variable by our definitions. Moreover it is Case-marked.

8. Another possibility is that empty *som* is made C-visible but not PG-visible by virtue of coindexation with the head nominal. This would entail a modification of the C-visibility conditions.

Case-inheritance via an A-bar chain must somehow be blocked in a case like (i). Otherwise we would expect the empty that to be made visible by virtue of the Case inherited from the trace in S.

\[
(i) \quad (c \text{ she is intelligent); I am well aware of e).}
\]

9. In Finland-Swedish the word order V-NP-particle is allowed when the particle has enough independent content (usually locative). Thus (ia,b) are well formed in this dialect, while (ic) is not.

\[
(i) \quad a. \quad \text{Torka tårarna/ dem bort.}
\]

\[
\text{wipe the tears/ them away}
\]

\[
b. \quad \text{Vi tog fotbollen/ den med.}
\]

\[
\text{we brought the football/ it along}
\]

\[
c. \quad \text{*Vi skrev numret/ det opp.}
\]

\[
\text{we wrote the number it up (i.e. "down")}
\]

As expected (iiia,b) are well formed, while (iic) is not:

\[
(ii) a. \quad \text{Torka dem genast bort.}
\]

\[
at once
\]

\[
b. \quad \text{Vi tog den alltid med.}
\]

\[
c. \quad \text{*Vi skrev det inte opp.}
\]
10. I have no explanation why, in the case of V-particle and
V-preposition verb movement must leave behind the non-head part, while in
the case of the reflexive verbs, the non-head part is only optionally
left behind.

11. With respect to er två it is not obvious which constituent is
the head; however, given the percolation conventions assumed in this work
this does not matter: Presumably the pronoun and the numeral do not have
conflicting features, which means that the node dominating the two will
be characterized by the union of the features of the pronoun and the
numeral.

12. Older normative grammars of Swedish required genitive -s on the
head noun. It is still found in very formal texts.

13. Some English dialects permit the construction exemplified in (i)
(i) together with he and his dog
They were staring at I and Mary.
In these dialects the case feature of the conjuncts obviously does not
percolate, since that would cause a Case conflict. Moreover the objective
Case assigned by the preposition does not trickle down to the conjuncts,
and hence pronominal conjuncts are nominative by default. In Swedish,
too, (iia) is better than (iia).
(ii)a. *tillsammans med jag
together with I
b. *tillsammans med jag och Maria
(There is, in fact, a Swedish dialect in which (iia) (as well as (b)) is
well formed; see below.) For those who do not accept (iib) I would say
that the Case assigned by the preposition does trickle down to the
conjuncts, requiring matching Case morphology on pronominal conjuncts.

14. It is possibly the case that (187b,c) are not quite as bad as
standard cases of Object Shift such as in (i):
(i)a. *Dom känner Gunnar alla.
b. *Dom känner honom där alla.
By comparison (187b,c) should perhaps be ? or ?? . This difference is not
predicted by anything we have said so far. However, although it may be a
relevant datum for determining the true nature of Object Shift it does
not affect the principal claim made in the present subsection: that the
raising process involved in sentences like (185), (187), etc. is not
Raising to Object but Object Shift. First, the alternative hypothesis
that the rule involved is Raising to Object, whether in the classical
version or in Bresnan's(1982) version, does not predict any difference at
all between pronouns and other nominals. Second, by a different choice of
AcI subject we can make the raising construction at least as ill formed as
(i,a,b):
(i) *Dom anser någon lärande alla vara dum.
they consider some teacher all be stupid

15. As indicated in the examples, leaving a pronoun in situ is more
acceptable in the AcI construction than in an ordinary object position,
both in Swedish and in Icelandic. This probably has to do with "weight": There is a general and well known tendency not to leave prosodically light elements in sentence-final position. As we have seen, e.g. hann parna, heavier by virtue of the complement parna, can be left in sentence-final position. It seems that the predicate of the AcI construction has, or can have, a prosodic effect similar to that of a complement to the AcI subject, making it (marginally in Icelandic) possible to leave it in situ even when it is a simple pronoun.

16. Bennis and Hoekstra's rule is probably responsible for the data which Koster(1984) takes to be evidence of a raising to-object-like rule: see his examples (84).

18. For instance Kayne(1983a) suggests that French object clitics are cliticized in the syntax, while the subject clitics are cliticized in PF. This accounts for the order of the clitics, among other things: the subject clitic always attaches outside the object clitic.

19. Henningsson(1985) has even observed a contrast between (ia,b):
   (i)a. *Såg dej Erik?  
       b. Såg dej Erik inte?  
       not
Other people do not seem to accept (ib), as Henningsson apparently does. However there does seem to be a slight difference even between (ia,b). This indicates that even the negation may help to identify the EC associated with the cliticized-and-moved pronoun. In fact the implication is that the problem in (ia) and similar structures is not binding/antecedent-government, but lexical government: the SC predicate presumably cannot substitute for antecedent-government, it cannot identify the content of the EC, but it certainly helps to identify its position. Even the negation can conceivably help to identify the position of the EC.
7. Concluding words

This work can be seen as an exploration of the consequences of a particular set of theoretical assumptions for, in particular, the theory of sentential structure in the Scandinavian languages. The thesis falls into two main parts, the first part (sections 4 and 5) dealing with problems relating to verb movement, and the second part (section 6) dealing with problems relating to Object Shift. The crucial theoretical assumptions in the first part are, in addition to those of, roughly, standard GB-theory:

(a) The lexical categories are composed of syntactic distinctive features grouping verbs into a natural class defined (+V), arguments into another natural class defined (-V), and "modifiers" (typically projections of A and P) into a natural class defined (%V) (i.e. "neutral for (+/-V)");

(b) percolation of a specified (=non-neutral) feature (F) from a non-head constituent β is possible provided that the head with which β is in construction is neutral with respect to (F);

(c) there is a principle which requires predicates to be (+V), which explains verb movement, auxiliary insertion, and insertion of a verbal copula in (main) clauses where the predicate is not headed by a verb;

(d) C and Infl are interdependent in the following way: Unless both are lexically filled C and Infl have the same feature value (in particular with respect to the feature (V)); when C is lexically filled it is the head of S', selecting Infl;

(e) the default specification of Infl is (-V) in the Scandinavian languages, but (+V) in English, and the default specification of C is (-V) in the Scandinavian languages but = the specification of Infl in English, i.e. generally (+V).

Part of the work consists of motivations for these assumptions. The rest is an investigation of their consequences for, in particular the description of finite sentences in the Scandinavian languages (in particular Swedish and Icelandic, although with respect to the problems discussed Swedish can be seen as largely representative of the mainland Scandinavian languages), and the explanation of the properties of such constructions, the most interesting property being the obligatory placement of a verb in Infl and in C (the latter being the so-called "V2 phenomenon"). In addition it is shown that the theory incorporating (a)-(e) can account also for certain intriguing properties of infinitival constructions, and for the evolution of English from a "V2 language" to the kind of "non-V2-language" it is today.

The most important assumptions in the second part are:

(a) the (old but not uncontroversial) assumption that A-bound traces cannot be Case-marked: only heads of A-chains can, and must, bear Case;

(b) empty lexical heads can "remain invisible" with respect to certain functions, for instance with respect to Case-marking;

(c) morphological case may satisfy the Case Filter in the sense that a
morphologically Case-marked nominal may head a chain from a non-Case-marked position (this idea, too, is not new, but it is implemented in a particular way in the present work).

The theory of verb movement developed in the first part is a prerequisite for the theory of Object Shift developed in the second part in that the structural conditions on Object Shift make crucial reference to the notion of a verb trace. In other words, the theory of Object Shift presupposes verb movement of the sort argued in the first part to operate in the Scandinavian languages. Hence the Object Shift construction provides additional support for the description of clauses in the first part.

Let us return to the list of word order variants of a Swedish sentence which we started out with:

(1)a. Johan köpte inte den.
   b. Johan köpte den inte.
   c. Den köpte Johan inte.
   d. Den köpte inte Johan.
   e. Inte köpte Johan den.
   f. att Johan inte köpte den
   g. att inte Johan köpte den
   h. Därför köpte Johan inte den.
   i. Därför köpte Johan den inte.
   j. Därför köpte inte Johan den.

We have established that the variation is a result mainly of verb movement (V-to-I plus V-to-C), XP-fronting, and Object Shift: V-to-I plus V-to-C accounts for the difference between main and embedded clause structures, i.e. the obligatory placement of the (finite) verb in second position in the main clauses, XP-fronting puts a (maximal) constituent in the sentence-initial "XP-position" in the main clauses, and Object Shift accounts for the contrast between (1a,b) and between (1h,i). All of the movements are instances of Move a, which is to say that all their properties follow from more general properties of the grammar. We get some additional variants due to the possibility of placing a sentence adverbial between C and the subject, as in (1d,g,j); this is something we have not discussed in any depth in the present work.

Let us conclude by a comparison with English: Taking a sentence such as in (2), containing a negation and (hence) an auxiliary, we have no more than four word order variants (including the marginal VP-fronting construction (2c); we have five variants if we include the formal Did John not buy the book).

(2)a. John didn’t buy the book.
   b. The book John didn’t buy.
   c. ?Buy the book John didn’t.
c. Didn’t John buy the book?

If we take a sentence containing a single verb we only have three variants (not counting the variant where the adverbial is sentence final: this possibility you also have in Swedish with "heavier" adverbs such as faktiskt "actually").

(3)a. John actually bought the book.
   c. Actually John bought the book.

The corresponding embedded clauses can only have the same word order as (2a) and (3a):

(4)a. that John didn’t buy the book
   b. that John actually bought the book

That is to say, English has much less freedom of word order than Swedish. On the descriptive level the main difference is that English does not have verb movement of the sort Swedish has (general V-to-I and V-to-C), and does not have Object Shift. On the other hand English does have some verb movement (auxiliary verb movement), hence the possibility of (2d), but it does not apply under the same conditions as Swedish verb movement: not, for instance, in connection with topicalization.

We can now explain these differences between English and Swedish in terms of a difference with respect to two parameters of UG: (a) In Swedish the default specification of Infl is (-V), in English it is (+V) (on this point English represents the more marked alternative), and (b) in Swedish, as in all V2 languages, the default specification of C is (-V), while in English it is + the specification of Infl, which is always (+V) in finite clauses. On this point Swedish represents the marked alternative. Since English has Infl specified (+V) by default, it does not have V-to-I, i.e. general verb movement to Infl (but it has auxiliary insertion in Infl), and since it does not have C specified (-V) by default, it does not have verb movement to C in all the configurations where this is required in e.g. Swedish. The parameters are furthermore related in the sense that a language with Infl marked (+V) by default (like English) and C marked (-V) by default (like Swedish), although representing a possible alternative, would be very highly marked. Hence we predict that such languages are are uncommon among the world’s languages (a prediction I have not even attempted to verify). Finally, since English does not have V-to-I, it does not have Object Shift.

The theory elaborated in this work has various consequences in addition to those I have taken up. No doubt there are consequences which I have not even noticed, but there are also some which I am aware of, but which I have chosen not to discuss in the context of this work. So, for instance, the theory of
section 5, incorporating the "functional principles" (a predicate must be (+V), etc.) has consequences for the issue to what extent grammatical relations are defined by configuration rather than by intrinsic properties of categories, and the related question how much "invisible structure" we have to assume. The question is, for instance, what is the structure of (6a), compared with (6b)?

(6)a. He left on Thursday.
   b. He left his wife on Thursday.

Do we have to assume a two-level VP where the adverbial is a sister of V' in (6a) as well as in (6b)? Given the functional principles of section 5 the phrase on Thursday is identifiable as a modifier regardless whether it is a sister of V' or V, which suggests that (6a) may have a simpler structural analysis than (6b), with only one VP-level. However, in this connection the various counterexamples to the functional principles mentioned but only cursorily discussed in section 5 become important. Clearly the issue is much more complicated than indicated by the example (6) -- which is why I have preferred to leave it for future research.
REFERENCES


References


Emonds, J. (1972) Evidence that indirect object movement is a structure-preserving rule. Foundations of Language 8, 546-561.


Holmberg, A. (1986) The distribution of case-neutral pronouns in a Swedish
References


References

Grammatical representation. Foris, Dordrecht.


References


