# WORKING PAPERS IN SCANDINAVIAN SYNTAX 82

# The position of adjectives and double definiteness

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In this paper we present a new way to analyze the development of double definiteness in Norwegian. Instead of analyzing the emergence of double definiteness as a change of the status of the definite marker, we propose that double definiteness emerges due to a different ordering of adjectives in Old Norse and Modern Norwegian respectively. This, we claim, has several advantages, among others because it allows us to account for certain movement differences between Old Norse and Modern Norwegian, which have proven difficult to handle. It also means that the change in question can be reconciled with a formal approach to grammaticalization, where this change represents an instance of the Late Merge Principle.

## 1.    Introduction[*]

Recently there has been a lot of discussion in the literature of how to account for the development of double definiteness in Norwegian (Roehrs 2006, Abraham and Leiss 2007, Faarlund 2007, Lohndal 2007, van Gelderen 2007; see Börjars 1998 for Swedish). Two main views are found in the literature: Faarlund and Lohndal claim that this change is an instance of "downward" grammaticalization, whereas Abraham and van Gelderen claim that the change adheres to the view which says that all instances of grammaticalizations are "upward" grammaticalizations (Roberts and Roussou 2003, van Gelderen 2004, 2007). All agree that the definite marker is a clitic in Old Norse, as shown in (1) and (2) with *-inn*, whereas its successor *-en* in (3) and (4) is a suffix in Modern Norwegian.

(1)    sá  inn  gamli hestr                                          (Old Norse)
       that DEF old    horse
       'the old horse'
(2)    hestrinn
       horse.DEF
       'the horse'

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(3)    den gamle hesten                                           (Modern Norwegian)
          that old    horse.DEF
          'the old horse'

(4)    hesten
          horse.DEF
          'the horse'

The disagreement is twofold: On the one hand people do not agree on the ontology of language change and on the other hand they have different views on the phrase structure in Old Norse and Modern Norwegian. In this paper we will provide a fresh take on this issue, and suggest that we have not looked in the right place when trying to explain how double definiteness emerged.[1] We will argue that instead of trying to accommodate the suffix/clitic distinction, we should look at the position of adjectives in the two languages. The change from clitic to suffix does not explain why there are different orders of adjectives and nouns in Old Norse and Modern Norwegian, whereas an account of the movement patterns will be shown also to account for double definiteness.
In short, we will propose that (both weak and strong) adjectives are base generated very low in Old Norse, whereas they are higher in Modern Norwegian. This means that a grammaticalization of the adjective has taken place (given the view of *syntactic* grammaticalization in Roberts and Roussou 2003 and van Gelderen 2004), which we also claim explains why the definite affix changed from a clitic to an inflectional affix.

      The paper is organized as follows. In section 2, we present the data showing the change from Old Norse to Modern Norwegian, and the essence of the proposals put forward in the literature as to how to account for the change. Section 3 discusses the data more in depth, and argues that the change in question involves a reordering of adjectives internal to the nominal phrase.[2] Section 4 shows how this fits a formal theory of grammaticalization. Section 5 summarizes and concludes the paper.

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[1] In this paper we will not be concerned with the grammaticalization of the definite articles from the demonstrative. See van Gelderen (2007) for a suggestion compatible with the present one.
[2] Since we are not discussing islands in this paper, we will not have anything to say about the fact that left branch extraction in Old Norse is possible (i).
(i)      góðan eigum vér konung
        good  have  we king
        'We have a good king'               (Platzack 2008: 357)
See Platzack (2008) for discussion.

## 2. The development of double definiteness

In this section we will present what appears to be the common and accepted analysis of how double definiteness developed from Old Norse to Modern Norwegian.[3] We will focus on the syntactic properties (for semantic considerations, see e.g. Lundeby 1965 and Dyvik 1979) and use Faarlund (2007) and (Lohndal 2007), who both argue that the development of double definiteness is an instance of what they call "downward grammaticalization" which occurred due to the grammaticalization of the suffix from a clitic to an inflectional affix (though see also e.g. Roehrs 2006, Abraham and Leiss 2007 and Laake 2007). There are several ways to test whether the suffix is a clitic or an affix; see Faarlund (2007) for a comprehensive discussion.

Both Faarlund (2007) and Lohndal (2007) argue that what happened from Old Norse to Modern Norwegian was that the clitic in e.g. (2) became an inflectional affix in (4) by moving down from the D head and into a lower functional projection (into an $n$P, following Julien 2005). We can illustrate this change as in (5) (the structure is taken from Julien 2005: 281).

(5)     $[_{DP}$ D $[_{PossP}$ Poss $[_{CardP}$ Card $[_{\alpha P}$ $\alpha$ $[_{nP}$ $n$ $[_{NumP}$ Num $[_{NP}$ N$]]]]]]]]$
        |_____clitic > affix_____↑

The problem with (5), as Abraham (2007b) points out, is that it goes against almost all formalist implementations of grammaticalization (Longobardi 2001, Roberts and Roussou 2003, van Gelderen 2004, 2007; though see Faarlund 2008 for a different view), where grammaticalization is interpreted as economy. As a consequence of this perspective, all grammaticalizations literally go "upwards" in the syntactic trees. Two relevant economy principles are (6) and (7).

(6)     **Head Preference Principle (HPP)**
        Be a head, rather than a phrase
(7)     **Late Merge Principle (LMP)**
        Merge as late as possible

These are assumed to be principles (or 'third factors' in e.g. Chomsky 2007) guiding the child in acquisition, that is, if the primary linguistic data allow the child to use either (6) or (7), it will. Both these principles can in fact be collapsed into one more general principle, namely (8) (van Gelderen 2007).

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[3] Nygaard (1906: 33, 54) claims that (2) above is infrequent in Old Norse. However, we do not think that this bears any significance to the diachronic analysis we are suggesting.

(8)    **Economy of Features**
       Minimize the interpretable features in the derivation

This principle entails that it is preferable to decrease the interpretable features in a derivation. Uninterpretable features can often replace the interpretable features (van Gelderen 2007). Uninterpretable features are located on heads, and as such, (8) is a reinterpretation of (6). The LMP principle follows from considerations of derivational economy. Move or remerge is more costly than just Merge, even if they are both an instance of Merge (Chomsky 2004). The reason is that you have to Merge twice instead of once, which arguably requires more effort on the grammar.

Summarizing, there are theoretical problems with the proposals in Faarlund (2007) and Lohndal (2007). Furthermore, there are also some important differences between the internal structure of the Old Norse and the Modern Norwegian DP. In the next section we will consider some of these and we will propose that an account of the difference in adjective placement can also account for the change in the status of the definite article. Before we can proceed to that, there is another change we need to discuss first, namely the emergence of the new prenominal article.

The Modern Norwegian prenominal article *den* is the contemporary descendent of the Old Norse demonstrative *sá*, a variant of which appears as *þau* in (9). In (later) Old Norse it was possible to have both a demonstrative and a definite article, as shown in (9) and (10).

(9)    þau  in   stóru skip                              (Old Norse)
       those DEF big   ships
       'those big ships' (Hkr I.437.13)          (Faarlund 2004: 82)
(10)   þeir  hinir íslenzku  menn
       those DEF   Icelandic menn
       'those Icelandic men'      (Hkr II.281.6)          (Faarlund 2007)

Faarlund (2007) argues that the demonstrative is a head in a separate phrase above the DP. The main argument is empirical: There are examples where an element has moved to what Faarlund takes to be SpecDP. A couple of examples are provided in (11) and (12) where *kvistr* and *fé* have been preposed.

(11)  kvistr sá  inn  fagri                                        (Old Norse)
      twig   that DEF beautiful
      'that beautiful twig' (Bárð 3.8)
(12)  fé      þat  it  mikla ok  it   góða
      money that DEF big    and  DEF good
      'that great sum of money' (Nj 97.25)                (Faarlund 2007b)

Faarlund also assumes that the definiteness marker is in D, which then
necessitates two specifiers for both the demonstrative and the fronted noun.
However, van Gelderen (2007) argues that the demonstrative can be both a head
and a specifier because of examples such as (10) and (12), and that the definite
marker is lower in the *n*P.

  We have seen that the definite article (e.g. *inn* in (1)) changes from a clitic
in (2) to an inflectional affix in (3) and (4) between Old Norse and Modern
Norwegian, and that the demonstrative (e.g. *sá* in (1)) grammaticalized into an
article. In the next section we will take a close look at the internal make-up of
the nominal phrases in Old Norse and Modern Norwegian.
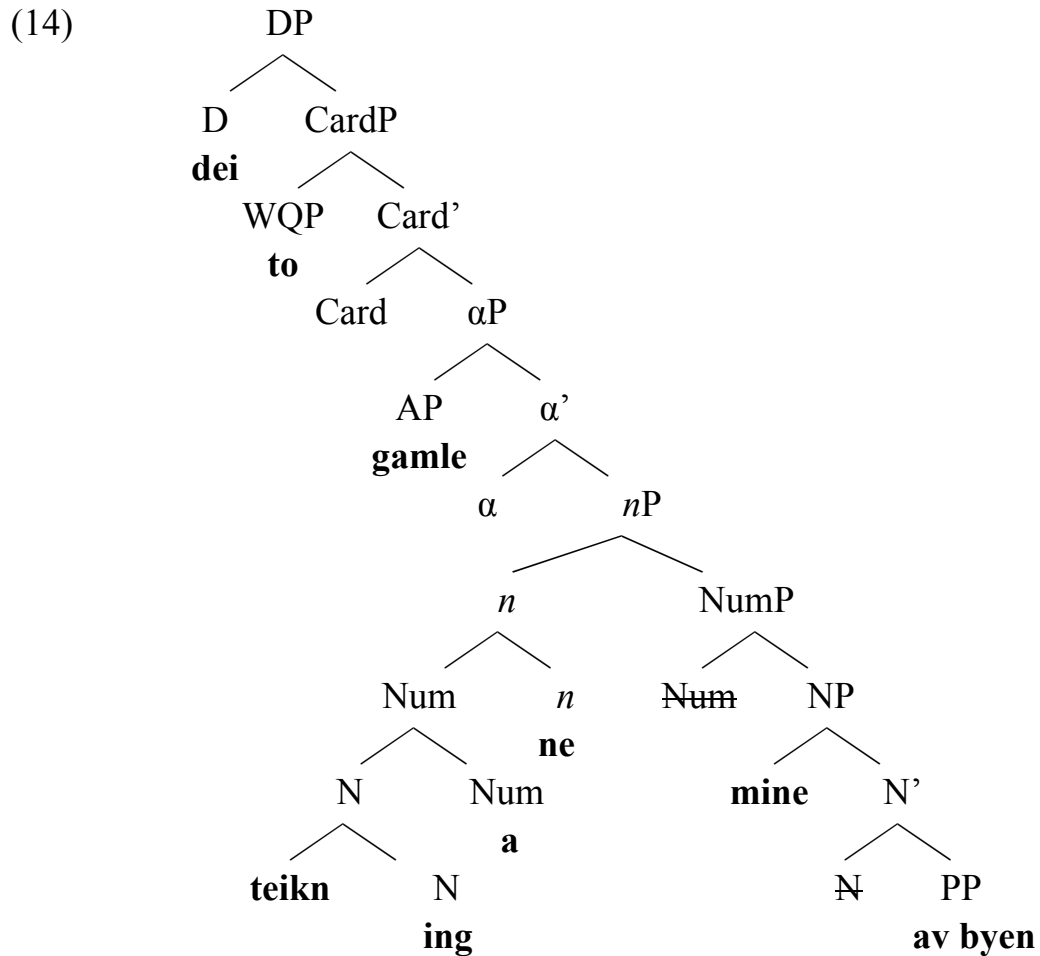
## 3.    Reordering of adjectives

In the previous section we presented the traditional account of how double
definiteness developed from Old Norse to Modern Norwegian. Now we will
consider some ordering differences internal to nominal phrases, and we will see
that there is a crucial difference between Old Norse and Modern Norwegian.
Section 4 goes on to argue how a proper understanding of this difference also
makes the clitic to affix change crop out.

  As our starting point, we will take Julien's (2005) comprehensive study of
nominal phrases in Norwegian.[4] Julien adopts a strong formulation of the
nonlexical approach to morphology (cf. Baker 1988, Marantz 1997, Cinque
1999, Julien 2002), and proposes that the Modern Norwegian nominal phrase in
(13) has the structure in (14).

(13)  dei    to   gaml-e teikning-a-ne    mine  av by-en
      DEF.PL two  old-W   drawing-PL-DEF my.PL of  town-DEF.MASC.SG[5]
      'my two old drawings of the town'

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[4] There are a number of different proposals in the literature that we cannot review here; see
e.g. Taraldsen (1990), Delsing (1993), Kester (1993), Santelman (1993), Sandström &
Holmberg (1994), Vangsnes (1999, 2004), Zamparelli (2000), Giusti (2002), Vangsnes,
Holmberg & Delsing (2003), Anderssen (2005), Doehrs (2006), Svenonius (2006).
[5] This sentence is glossed according to the glosses in Julien. W = weak inflection. We assume
the other glosses to be self evident.

(14)

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                        DP
                   ┌─────┴─────┐
                   D          CardP
                  dei       ┌───┴───┐
                          WQP     Card'
                           to   ┌───┴───┐
                              Card      αP
                                    ┌────┴────┐
                                   AP         α'
                                 gamle     ┌──┴──┐
                                          α      nP
                                         ┌───────┴───────┐
                                         n             NumP
                                      ┌──┴──┐        ┌───┴───┐
                                    Num    n        N̶u̶m̶     NP
                                          ne               ┌──┴──┐
                                   ┌───┴───┐             mine   N'
                                   N      Num                ┌──┴──┐
                                          a                  N̶     PP
                                 ┌──┴──┐                          av byen
                               teikn    N
                                       ing
```

Many researchers have argued that there is a close parallel between the clause and the DP, which also was one of the main motivations behind the DP-hypothesis at the outset (see in particular Szabolcsi 1983, 1987; for recent research see amongst others Kayne 1994, Koopman 2005, Giusti 2006 and Alexiadou, Haegeman and Stavrou 2007 for much valuable discussion). This is partially implemented in the structure in (14), and it is reasonable to see *n*P as the nominal counterpart of *v*P. Julien also builds on the assumption that there is a semantic difference between the *n*P and the DP. We would like to think of this as a distinction between specificity and definiteness (cf. Ihsane and Puskás 2001, Abraham 2007a, though see Julien 2005 and Roehrs 2006: 73 for slightly different implementations), where *n*P encodes specificity and DP definiteness.

Concerning definiteness, Julien (2005: 28) assumes that a Modern Norwegian nominal phrase like (15) has the structure in (16).

(15)   skjort-a                                    (Modern Norwegian)
       shirt-DEF.FEM.SG
       'the shirt'

(16)
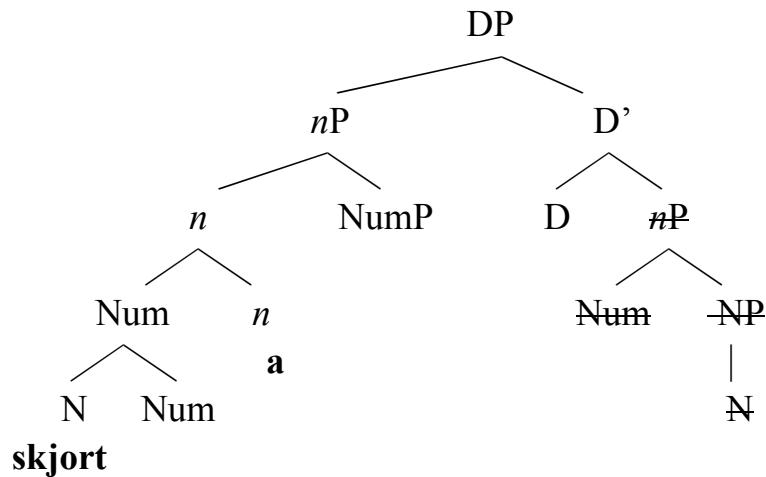


In other words, the *n*P moves to SpecDP where, she argues, the D agrees with the *n*.[6] As Julien points out, this is in accordance with the Agree system of Chomsky (2000, 2001, 2004, 2005, 2007) where Move can be part of Agree. Julien's way of deriving the ban on moving the inflected noun across the adjective, as in (17), is by saying that an AP merged in SpecαP will agree with α, which in turn agrees with *n*.

(17)   *teikningane    gamle                              (Modern Norwegian)
        drawings.DEF  old

This means that when an AP is present, this AP will be a closer goal for D, thus the Probe cannot look past this Goal (Julien 2005: 29). The impossibility of *n*P moving above AP is thereby derived.

Having presented the structure of the DP that we will be assuming for Modern Norwegian, let us now turn to Old Norse. Structures such as (17) are possible in Old Norse and are crucial for an understanding of the difference between Old and Modern varieties. Above we have implicitly assumed that all adjectives are prenominal in Modern Norwegian. There are two exceptions that need to be mentioned (cf. Laake 2007: 54-55). One is where we have a proprium and an adjective, as in (18).

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[6] Julien assumes that the DP projection needs to be identified (cf. Giusti 1997, Roberts and Roussou 1999a, Vangsnes 1999), hence the projection cannot be phonologically empty.

(18)  Olav den hellige                                      (Modern Norwegian)
      Olav DEF holy
      'the holy Olav'

The other exception is where an adjective has its own complement:

(19)  en bok full av eksempler                              (Modern Norwegian)
      a book full of examples
      'a book full of examples'

These examples are construction-specific, and especially examples like (18) are
infrequent. For Modern Norwegian, we assume these to be historical relicts, i.e.
constructions that no longer are productive. Importantly, we find both of these
constructions in Old Norse (as well as (17). (20) contains the same pattern as in
(18), and (21) - (22) have the same structure as in (19).

(20)  Óláfr *digri*                                         (Old Norse)
      Olaf   stout.DEF
      'Olaf the stout' (Hkr II.85.15)                       (Faarlund 2004: 68)
(21)  þar   fylgði    segl *stafat   með  vendi*
      there followed sail adorned with  stripe
      'a striped sail came with it' (Hkr II.244.9)          (Faarlund 2004: 71)

Some further examples of postnominal adjectives are provided in (22) to (26).

(22)  á Orminum    langa                                    (Old Norse)
      on Serpent.DEF  long.DEF
      'on board "The Long Serpent"' (Hkr I.414.10)    (Faarlund 2004: 71)
(23)  í eilífri dýrð fǫður ok  sonar ok  andans   helga
      in eternal glory father and son   and  spirit.DEF holy.DEF
      'in the eternal glory of the Father, the Son, and the holy Spirit'
                             (Hóm 31.23) (Faarlund 2004: 71)
(24)  þá   fann  hann Vinland it    góða
      then found he    Vinland DEF good
      'then he found Vinland the good' (Hkr I.428.3)    (Faarlund 2004: 70)
(25)  Hákonar jarls ins  ríka
      Hakon    earl  DEF mighty
      'of Earl Hakon the mighty' (Hkr I.4.18)          (Faarlund 2004: 70)

(26) engi maðr mátti nefna   hann annan veg, en   jarl inn  illa
     no   man  could  mention him  other  way  than earl DEF evil
     'nobody was allowed to referto him in any other way as "the evil earl"'
                                     (Hkr I.355.16) (Faarlund 2004: 70)

(27) ok  mintisk            á  ævi sína ina  fyrri
     and remembered.REFL on time his  DEF former.DEF
     'and remembered his former life' (Hkr II.146.23)   (Faarlund 2004: 71)

(28) Hrafnkell lét gera  hof            mikit
     Hrafnkell let make pagan.temple big
     'Hrafnkell let it be made a big pagan temple' (HS 145) (Laake 2007: 53)

Given that both possibilities exist in Old Norse and only the prenominal one in
Modern Norwegian, there is obviously a difference between these two
languages. If the internal structures of the DP in Old Norse and Modern
Norwegian were identical, it would be difficult to come up with a good
explanation of this difference. Another way would be to say that adjectives
simply are not interveners in Old Norse but that would threaten the entire
syntactic structure for nominal phrases, because that would imply that there no
longer is agreement between the D head and the adjective. There is, however,
adjectival agreement in ON, as illustrated in (29) where we have weak (definite)
declension and in (30) where we have strong (indefinite) declension.

(29) ok  gaf at eta inum     sárum            mannum
     and gave to eat DEF.DAT wounded.DEF.DAT men.DAT
     'and gave (it) to the wounded men to eat' (Hkr II.503.13)
                                          (Faarlund 2004: 67)

(30) ok  sá  þar  mikinn  her
     and saw there big.ACC army.ACC
     'and saw a big army there' (Hkr II.229.7)     (Faarlund 2004: 68)

We think these data provide evidence against treating the DP in Old Norse and
Modern Norwegian as identical. Instead we will propose a different way to
accommodate these data in the next section.

## 4.    Formalizing the change

Section 3 showed some differences between the Old Norse and the Modern
Norwegian nominal. In particular we looked at the position of adjectives. We
will now provide some suggestions concerning the internal make-up of the DPs

in these two languages, and furthermore suggest a formal implementation of the development of double definiteness and the reordering of adjectives.

We will assume what Alexiadou, Haegeman and Stavrou (2007: 290) call a "separationist" (as opposed to a "reductionist") view regarding the position of adjectives cross-linguistically:

> Reductionist proposals reduce two different superficial positions of the adjectives, pronominal and postnominal, to a single underlying position of the adjectives, deriving the variation in position by movement […] Separationist proposals assume different underlying positions at the basis of the different surface positions of the adjectives.

A reductionist view would e.g. be the view advocated by Cinque (1994, 2005, in press). We will first provide some background on Cinque's theory and then show that this theory does not work for Old Norse and Old English. Cinque describes adjectival positions in Romance and Germanic and notes that they display some mirror effects:

> In English (Germanic) the prenominal position is systematically ambiguous between the two values of each property [stage-level and individual-level, etc], while the postnominal one (when available) has only one value: stage-level, restrictive, implicit relative clause, and intersective readings [...] In Italian (Romance), instead, it is the postnominal position that is systematically ambiguous between the two values of each property, while the prenominal one only has the individual-level, nonrestrictive, modal, nonintersective, absolute, absolute with superlatives, specific, evaluative, and NP dependent, readings (Cinque in press: chapter 2).

The differences can be expressed in (31) and (32) (RC stands for Relative Clause).

(31)  English (Germanic)
      AP from reduced RC > "direct modification" AP  > N > AP from reduced RC
(32)  Italian (Romance)
      "direct modification" AP  > N >  "direct modification" AP  > AP from reduced RC

Some properties related to reduced relative clauses are a stage-level interpretation and discourse anaphoric characteristics. In the examples from English in (33) and (34) provided by Cinque, the capitalized adjective is the reduced relative clause one, and is paraphrasable as `that is currently visible'.

(33)     Every VISIBLE visible star
(34)      Every visible star VISIBLE

The adjective immediately preceding the N in (33) and (34) is the one with the individual-level interpretation and cannot appear postnominally. This direct-modification AP can be further divided, as in (35).

(35)   Asize > Acolor > Anationality   > N

Cinque's analysis for the two kinds of APs is to propose the same underlying structure for Germanic and Romance, with the reduced RC merged high. In Romance, the NP could move before the direct modification AP but the AP and NP could also snowball in front of the Reduced RC AP. In Germanic, either the original order as in (33a) remains or the AP and N move to a position before the Reduced RC, as in (33b).

For Romance, Cinque says that "the entire constituent made up of the NP and its direct modification adjectives […] has (obligatorily) raised above the indirect modification AP found in the reduced RC" (Cinque in press: ch. 7). Below, we adopt the basic intuition behind Cinque's proposal for Old Norse, namely that the two types of adjectives have different positions.

Laake (2007: 59-62) proposes to analyze the difference between Old Norse and Modern Norwegian in terms of a Split-IP parameter (cf. Thráinsson 1996, Bobaljik and Thráinsson 1998). In her analysis, Old Norse has what corresponds to a double $n$P (IP for Laake, as she assumes a DP-IP-NP structure) in the structure we are assuming. The adjective is an adjunct in Laake's opinion, and adjoined to the $n$P. There are two important problems with Laake's analysis. First, adjectives seem in fact merged as specifiers of functional projections (cf. Cinque 2005, Julien 2005, Cinque in press). Julien presents several empirical arguments in favor of this for Scandinavian. Building on Delsing (1993), she mentions that there are some dialects of Northern Swedish where indefinite articles may appear after prenominal adjectives. This is also marginally possible in Norwegian (cf. Vannebo 1972), as illustrated in (36).

(36) ?eit    stor-t  eit    styg-t  eit    hus
      INDEF big-N   INDEF ugly-N   INDEF house.N
     'a big ugly house'

These articles do not represent the adjectival agreement since the adjectival agreement is spelled out by the suffixes on the adjectives. Hence Julien concludes that these articles are realizations of functional heads that have the adjectival phrases in their specifiers, i.e. they lexicalize the α heads.

A second problem with Laake's Split-IP parameter is that it is empirically problematic. Researchers have sought for correlations between morphology and syntactic processes for years without too much success. It seems to be clear that the strong version of what Bobaljik (2003) dubs the Rich Agreement Hypothesis fails (see van Gelderen 2000, chapter 4). Instead, Thráinsson (2003: 159) argues in favor of a weaker condition, stated in (37) (see also Thráinsson and Angantýsson 2007).

(37)   If a language has rich verbal inflection […] it has V-to-I movement in
       embedded clauses. The converse does not necessarily hold, however.

However, many questions still remain unanswered. We will therefore remain skeptical about the claim concerning correlations between morphology and syntax until further convincing evidence is presented.

For these reasons, we think that it is necessary to provide a different account of the change from Old Norse to Modern Norwegian, avoiding these problematic assumptions. Following van Gelderen (2007), we assume that the definite marker is merged as head of the *n*P, not the DP. In this paper, we emphasize the position of the adjective in Old Norse. The inspiration for this comes from Spamer (1979) and more recently Fischer (2000, 2006):

> in Old English the weak adjectives are used attributively and come closer to the nominal category (it could be said that adjective and noun together form a kind of compound), while the strong adjectives are used predicatively, and hence closer to the verbal category. It follows in both cases that these noun- and verb-like adjectives cannot be stacked, just as one cannot stack nouns or full verbs (Fischer 2006: 268).

We adopt this proposal since it also seems to work for Old Norse. There is for example no stacking of adjectives in Old Norse, unlike in Modern Norwegian. This implies that the base order for the nominal phrase in Old Norse was one where the adjective followed the noun, i.e. [N + weak adjective] and [N + strong adjective], not [adjective + N] as argued by Faarlund (2004).[7] Although we have seen that the order of adjectives in Old Norse apparently is optionally pre- or postnominal, according to Faarlund (2004: 69), when the adjective is emphasized or focused, it precedes the noun. If this is true, one can then easily assume that this order is due to a feature triggering the movement of the adjective to the pronominal position. However, this is an area for further work since focus with adjectives is a little unclear.

Before providing an analysis for adjectives, let's briefly review weak and strong inflection on the adjectives. Strong adjectives are used when there is no definiteness marker or a demonstrative; weak ones are used when there are definiteness markers. The strong form is therefore also called the indefinite and the weak one the definite. Examples of weak adjectives can be found, for instance, in (9) to (12) above, and (38). They are most often prenominal and can be seen as individual level adjectives, e.g. in (38).

(38)   hold  ok  hjarta var  mér  in   horska  mær
       body and heart  was me  the wise     maiden
       'My life was the wise maiden' (Hav. 96, from Nygaard 1906: 48)

Nygaard (1906: 48) formulates the individual-level character of the weak adjective as "[a]djektivet betegner da en bekjendt egenskab ... eller en egenskap, der tillhører gjenstanden efter dens natur og væsen" ('the adjective denotes a known characteristic … or a characteristic that belongs to the thing according to its nature').

Strong adjectives have been shown above to be both pre- and postnominal in Old Norse. If strong adjectives are prenominal, they are often generic, as in (39), or predicate-like, as in (40)-(42), i.e. stage-level and not individual-level, which weak adjectives often are.

(39)   Ósnotr maðr ef eignaz getr fé
       unwise man  if own    gets money ...
       `The unwise man, if he gets money ... for himself, ...' (Hav. 79)

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[7] Although it is hard to rely too much on how the situation in Proto-Nordic is assumed to have been, it is interesting to note that Antonsen (1981) argues that there are no examples of adjective-noun in the runic inscriptions, only noun-adjective has been found.

(40)   auðgom manni       fyrir
       wealthy man-DAT before
       `before a wealthy man' (Hav 70)

(41)   Gefendr heilir
       givers   healthy
       `Safe hosts' (Hav 2)

(42)   hof  stor
       seas big
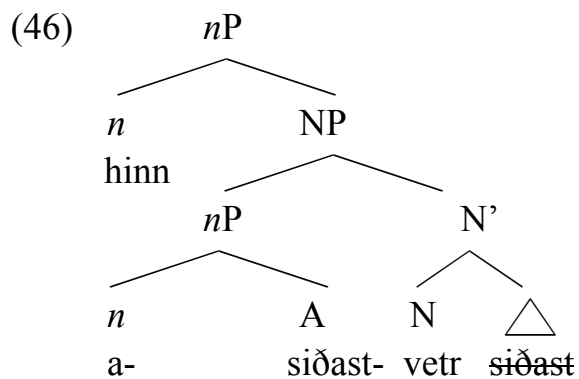       `big seas'                                    (Faarlund 2004: 68)

As expected under the analysis we provide, the strong form is also used
predicatively, as in (43):

(43)   At hyggiandi sinni scylit maðr hrœsinn vera
       In thought his should-not man boastful be
       `A man shouldn't be boastful in his thought'. (Hav 6)

       Based on Spamer, Fischer and more recently Cinque (in press), we
propose that the structure of a simple noun phrase with a weak adjective as in
(44) or (45) should look like (46).

(44)   inn vari          gestr
       the knowing-W guest
       `The knowing guest' (Edda, *Hávamál* 7)

(45)   hinn siðasta vetr
       DEF last    winter
       'the last winter'          (Gordon 1956)

(46)          *n*P
           ╱        ╲
       *n*           NP
       hinn      ╱        ╲
             *n*P          N'
          ╱      ╲       ╱    ╲
       *n*        A     N     △
       a-      siðast- vetr  s̶i̶ð̶a̶s̶t̶

In (46), the adjective *siðast* merges with its weak definiteness marker *a*. The definiteness marker works like a nominalizer, which we have labeled *n*P following the convention in the literature. The two *n*Ps appear in different positions, and thereby perform different functions. Assuming that the adjective head-moves to *n*, we get *siðasta*.

For post-nominal adjectives, as in (42), the structure would look like (47) with the structure of the relative clause depending on one's favorite theory.

(47)
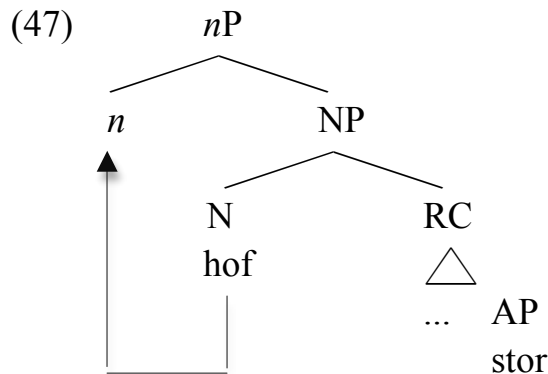

For prenominal strong adjectives, we suggest a movement of the AP into a higher position and this position is then grammaticalized in Modern Norwegian as in (5).

In addition to these straightforward patterns, we also noticed some cases where a noun moves above the definiteness marker without cliticizing onto it ((24)-(26)). A reduced version of example (26) is repeated here as (48).

(48)  jarl inn  illa
　　　 earl DEF evil
　　　 'the evil earl' (Hkr I.355.16)　　　　　　　　　　　　　　　　(=(26))

We stated above that this is movement to a specifier position, because we also find entire phrases preceding the article.

(49)  Hákonar　　 jarls　 ins　 ríka
　　　 Hakon　　　 earl　 DEF mighty
　　　 'of Earl Hakon the mighty' (Hkr I.4.18)　　　　　　　　　　　(= (25))

Summarizing, we argue that (46) and (47) represent the correct DP structures for Old Norse. Compare that to Modern Norwegian, as in (14) above, repeated here as (50) without the movement.

(50)

```
                    DP
                   /  \
                  D   CardP
                      /  \
                   Card   αP
                         /  \
                       AP    α'
                            /  \
                           α    nP
                               /  \
                              n   NumP
                                   /  \
                                      NP
```
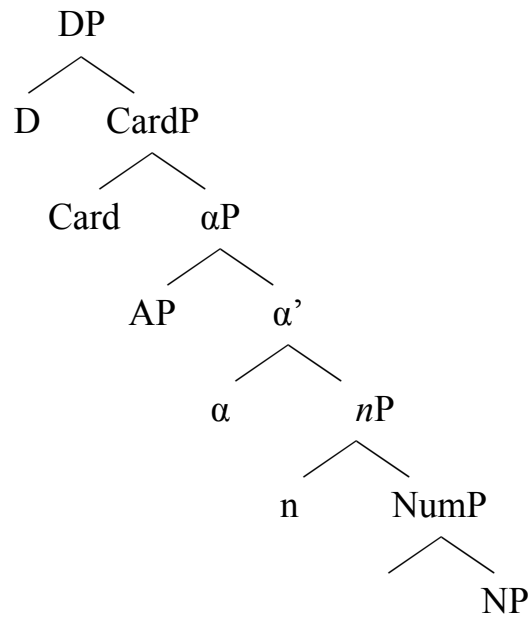
The crucial difference between these two stages is the position of the adjectives. In Old Norse, adjectives are either noun-like when they are weak, that is, the noun and the adjective together form a compound, or verb-like when they are strong, that is, they are base-generated post-nominally and are more predicative. In Modern Norwegian adjectives are base generated much higher; they are merged as a specifier of a functional head, as in (50). In other words, we see a change conforming to the Late Merge Principle. It seems reasonable to view the loss of the older system in relation to the loss of inflection that happened from Old Norse to Modern Norwegian (cf. Fischer 2006 for English). We hypothesize that when the noun and adjective inflection were almost gone, the adjective was analyzed as a pure adjective and no longer a nominalized (in (46)) or verbalized (in (47)) form. Furthermore, we have seen that the location of the definiteness marker has not changed; it is merged as the head of *n*P in both Old Norse and Modern Norwegian. The only change that has happened is a lexical change: the marker has changed from being a head to being a suffix.

In this section, we have seen that assuming the definiteness marker in Old Norse to be merged in *n* instead of D makes it possible to view the change from a clitic to a suffix in relation to the change from having both prenominal and postnominal adjectives in Old Norse to only having prenominal adjectives in Modern Norwegian. We have suggested that adjectives have different Merge sites in the two languages. The change is thus an instance of the Late Merge Principle in van Gelderen's theory of grammaticalization, whereby adjectives are merged higher in Modern Norwegian than in Old Norse.

# 5.    Conclusion

The aim of this paper has been to take a fresh look at the current debate concerning the emergence of double definiteness in Modern Norwegian. We have argued that one's perspective on the structure of the DP is an important issue when interpreting the change, and more importantly, that it is important and necessary to look at other DP-internal properties in Old Norse and Modern Norwegian. Looking at changes in adjective ordering, we have argued that it is possible to relate the development of double definiteness to the reordering of adjectives that happens between Old Norse and Modern Norwegian. Specifically, building on work by Spamer, Fischer, and Cinque, we have argued that adjectives in Old Norse were more nominal and that they actually enter into a compound-like configuration together with the noun.

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# The structure of copular clauses in Norwegian

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*Abstract*
In this paper we investigate how copulas are to be analyzed within a framework assuming a predication phrase (PrP). It is discussed in the literature whether copulas move from a verb phrase to the predication phrase, or whether they are directly merged in the predication phrase. We present arguments in favor of both views and conclude that both options have to be allowed by Universal Grammar. We discuss the claim that copulas have semantic content in relation to our analysis, and we further discuss the consequences for our analysis of an important difference between predication mediated by copulas and "pure" non-verbal predication as to the licensing of argument positions.

## 1. Introduction[•]

Stowell (1981, 1983) proposed that non-finite subject – predicate relations should be analyzed as small clauses, not only semantically, but also syntactically, i.e. non-finite subject – predicate relations should be analysed as clausal constituents configurationally. Thus, the bracketed portions in (1) show adjectival, prepositional, nominal, and verbal small clauses that each consists of a syntactic small clause subject and a syntactic small clause predicate, as indicated.

(1)  a. John finds [AP Bill [ absolutely crazy]]          (Stowell 1983)

 b. I expect [PP that man [ off my ship]]          (Stowell 1983)

 c. I consider [NP him [ a perfect partner]]

 d. Mary had [VP her brother [ open the door]]          (Stowell 1983)

Bowers (1993, 2001) developed the small clause analysis proposing that the subject – predicate relation is mediated by a predication projection, PrP, with the small clause subject in the <Spec, PrP> position. The Pr head contains a

---

predication operator that turns a property phrase in the complement position of Pr (the property phrase corresponds to Stowell's small clause predicate) into a predicate. Thus, all small clauses have a uniform structure, as shown in (2), where the property phrase XP is AP, PP, NP, or VP, cf. (3) (Bowers 1993: 596-597).

(2)    PrP

       /  \

     SU   Pr'      (= the predicate)

          /   \

        Pr     XP  (= the property phrase)
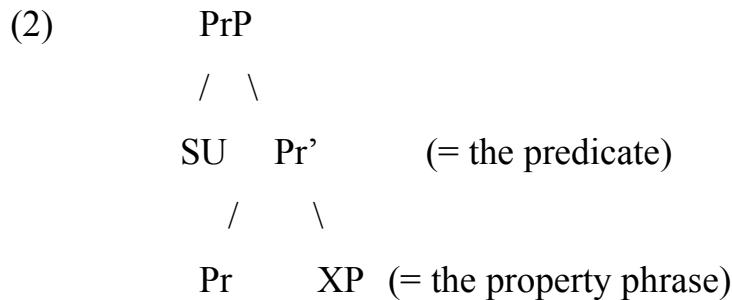
(3)  a. [$_{PrP}$ SU [Pr + AP]]    →    [$_{PrP}$ Bill  [[$_{Pr}$ Ø]  [$_{AP}$ absolutely crazy] ]]
     b. [$_{PrP}$ SU [Pr + PP]]    →    [$_{PrP}$ that man  [[$_{Pr}$ Ø]  [$_{PP}$ off my ship] ]]
     c. [$_{PrP}$ SU [Pr + NP]]    →    [$_{PrP}$ him  [[$_{Pr}$ Ø]  [$_{NP}$ a perfect partner] ]]
     d. [$_{PrP}$ SU [Pr + VP]]    →    [$_{PrP}$ her brother [[$_{Pr}$ Ø] [$_{VP}$ open the door]]][1]

One of the more striking arguments in Bowers (1993) is that the PrP-analysis readily accommodates predication particles, like English *as* or Norwegian *som* 'as', that sometimes pop up between the small clause subject and the rest of the small clause (Eide 1996; Eide & Åfarli 1999), cf. (4).

(4)    a. Jeg anser lånet **som** stort

          'I consider the loan as big.'

       b. Jeg regner sofaen **som** kostbar

          'I count the sofa as expensive.'

In Stowell's analysis, these particles are not easily explained, but in the PrP-analysis they are naturally explained as lexicalizations of the Pr head, as indicated in (5) for the small clause in (4a).

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[1] We will assume in section 2 that when the property phrase is headed by a finite V, the verb is raised to the Pr head. That is probably the case for non-finite V as in (3d), as well.

(5)           PrP
            /   \
        SU     Pr'
      lånet   /     \
            Pr      AP
          som     stort
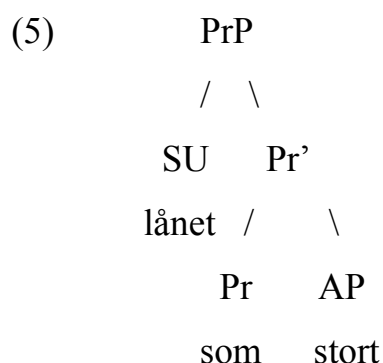

Assuming the syntactic small clause analysis and in particular Bowers' development of it, the problem that we will deal with in this article is how copular constructions in Norwegian should be analysed given the PrP analysis. In particular, should the copula be analysed as a Pr element, like the predication particle *som* 'as', or should it be analysed as a verb heading a VP and subsequently raised to Pr?

The article is organized as follows. Section 2 discusses whether the copula raises to the head of the predication phrase or whether it is merged directly, concluding by supporting the latter alternative. Section 3 then presents possible arguments in favor of the raising analysis, which we nevertheless argue are compatible with the direct insertion analysis. In section 4 we discuss case alternations on the predicate, and we also show that copulas differ crucially from predication particles as to the licensing of (non-subject) arguments, arguing that a raising analysis must be assumed for a subset of copula constructions. Section 5 concludes the paper.

## 2. The copula: Raising to Pr or insertion in Pr?

In non-finite small clauses, the Pr head remains empty or is filled by a predication particle like *som* in Norwegian or *as* in English. In full clauses, the main verb raises from V to Pr (and further to T and sometimes to C), cf. Bowers (1993, 2001), Åfarli (2008). However, among researchers adopting the PrP analysis, there is some controversy over the proper analysis of copular constructions. Specifically, should the copula be generated under a V-projection and then be raised to Pr (like other main verbs), or should it be directly inserted in Pr (similarly to predication particles) so that copular constructions lack a VP? The two options are sketched in (6) for the copular clause *the pavement is*

*slippery*. Notice that PrP in finite clauses is embedded as a complement of a T-projection, not shown here or later.

(6)  a.  PrP                          b.  PrP
         /  \                              /  \
   the pavement  Pr'               the pavement  Pr'
              /    \                            /  \
           Pr    VP                         Pr  AP
           is $_i$  /  \                     is  slippery
                 V   AP
                 t $_i$  slippery
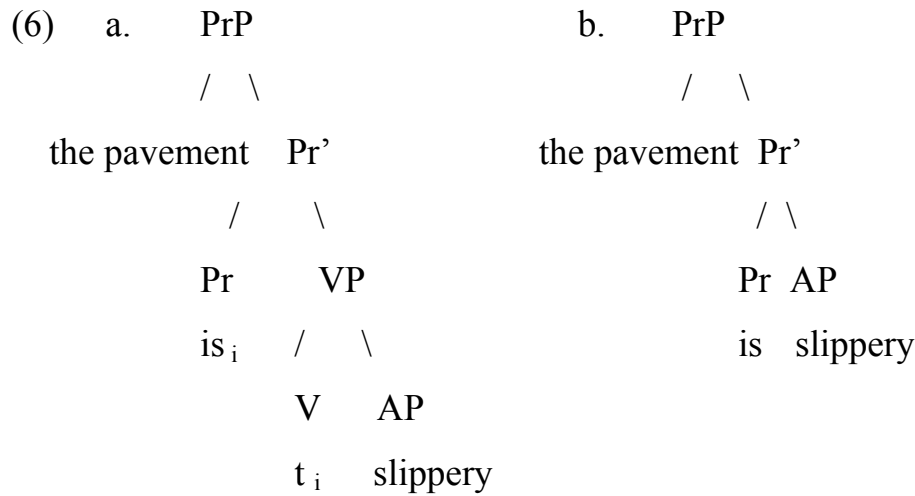
We shall argue that (6b) is the unmarked option (see e.g. Baker 2003, Bailyn 2001). One reason for this is that it contains less structure and therefore it is the more economical alternative. On the assumption that copulas do not require (non-subject) arguments, no VP is required (VP being the locus of the display of non-subject arguments), and the possibility of generating the copula directly in Pr is available and therefore allowed, and even required given economy. However, we will not assume a rigid economy metric, and therefore we do not consider the option in (6a) to be excluded in principle. In fact, in section 4, we will show empirical evidence that the more elaborate structure (6a) must be allowed in certain cases.

What are the arguments for adopting (6b), apart from economy considerations? Notice first that it is commonly assumed that full verbs raise to the functional Pr head, and thus the Pr head accommodates verbs in the first place. As for direct generation of verbs in functional heads, it is commonly assumed that English modals and supporting verbs like English *do* are directly inserted in the T head. Thus, there is nothing that prohibits direct insertion of verbs into functional head positions.

A consideration of the distribution of copulas among different languages seems to lend support to the direct insertion structure in (6b). Pustet (2003) is a study of copular constructions in some 160 languages worldwide. She divides languages into groups according to which types of property phrases (AP, NP or VP; Pustet does not discuss PP) co-occur with a copula (Pustet 2003: 64). Thus,

Tagalog does not have copulas at all, i.e. not with AP, NP, or with VP. Burmese uses copulas only with NPs, but not with APs or VPs. German (like e.g. English and Norwegian) uses copulas with both AP and NP, but not with VP. Last, Bambara uses copulas with all three: AP, NP, and VP. The German type (copula only with AP and NP) is the most common type worldwide, but the Tagalog and Burmese types (non-copularizing and NP-copularizing types, respectively) are also very common. The Bambara type (fully copularizing) is, however, quite rare (Pustet 2003: 72).

Crucially however, even though this fully copularizing type is rare, it is attested, and it is quite interesting in the context of determining between the structures (6a) and (6b). In languages like Bambara, even main verbs require a copula. An example is shown in (7).

(7)  ne  bɛ  taa.

 1SG COP leave

 'I am leaving.'               (Pustet 2003: 65)

Then, assuming that copulas are generated in V and raise to Pr, i.e. as in the structure (6a), we either find the structure PrP+VP+PrP+VP or the structures PrP+VP+VP/VP+PrP+VP, where the first VP is the copular VP, and the second VP is the main verb VP. Of these representations, the former is the more likely, since presumably both the copula and the main verb require a PrP, given the assumptions made earlier. Now, these structures are quite complex, and thus they are dubious on economical grounds, given that there is a simpler structure available. And a simpler structure is of course available, namely (6b). According to (6b), the structure of Bambara clauses with copula and main verb is PrP+VP, with the copula directly inserted in Pr and the main verb generated in V.

Besides being simpler, this structure also has the great advantage of being completely parallel to clauses with copularizing NP and AP. Thus, the general structure of copular constructions in a fully copularizing language like Bambara is PrP+XP, where X = A, N, V, as shown in (8) (PP should also be included, but is not shown here since Pustet does not take it into account).

(8)          PrP

           /  \

              Pr'

           /     \

         Pr       AP/NP/VP
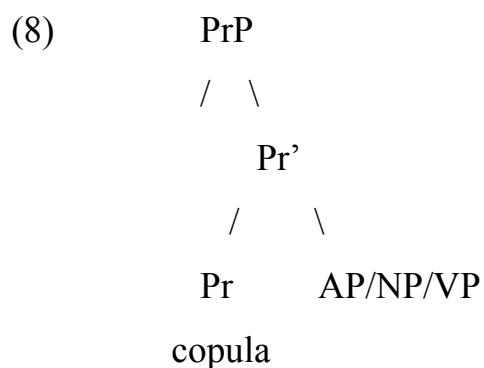
       copula

This analysis now sets the stage for a simple analysis of the difference between languages with and without copularizing VP. A language with copularizing VP (like Bambara) lexicalizes Pr by inserting a copula, whereas a language without copularizing VP (like Norwegian and English) lexicalizes Pr by verb raising. This is shown in (9a,b), respectively.

(9)   a.    PrP                     b.    PrP

         / \                          /  \

            Pr'                            Pr'

          /   \                        /   \

        Pr     VP                Pr    VP

     copula  verb …           verb$_i$   t$_i$ …
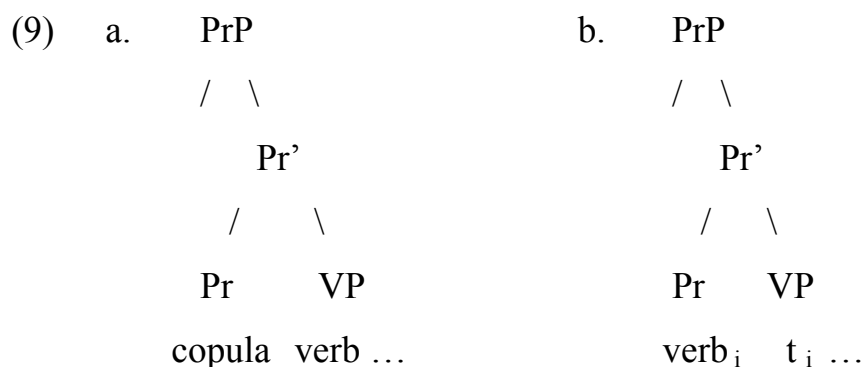
In other words, whereas (9b) is the correct structure for languages like Norwegian and English that do not have a copularizing VP, (10) is the correct structure for copularizing AP, PP, and NP in such languages.

(10)         PrP

           /  \

              Pr'

           /     \

        Pr      AP/NP
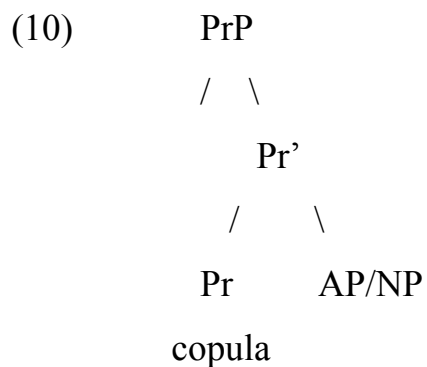
   copula

That is, a natural approach to cross-linguistic copular phenomena suggests that the copula is directly inserted in Pr, i.e. option (6b) above.[2]

To wrap up this section, if we turn the non-finite small clauses in (1) into finite copular main clauses, we get the following:

(11)  a. [$_{PrP}$ Bill [$_{Pr'}$ [$_{Pr}$ **is**] [$_{AP}$ absolutely crazy]]

b. [$_{PrP}$ That man [$_{Pr'}$ [$_{Pr}$ **is**] [$_{PP}$ off my ship]]]

d. [$_{PrP}$ He [$_{Pr'}$ [$_{Pr}$ **is**] [$_{NP}$ a perfect partner]]]

c. [$_{PrP}$ Her brother [$_{Pr'}$ [$_{Pr}$ **opens$_i$**] [$_{VP}$ t$_i$ the door]]]

## 3. Semantic considerations

There are arguments in the literature that indicate that the copula has semantic content. The assumption then seems to be that this shows that the copula must be generated as an independent verb, i.e. heading a V-projection. In effect, these arguments are taken as motivation that the raising structure (6a) should be preferred over the direct insertion structure (6b). For instance, Bowers (2001: note 4) argues against the structure in (6b), claiming that it would make it difficult to account for the difference in meaning between pairs such as *I made John a good teacher/I made John be a good teacher*, and he refers to Rothstein (1997) for arguments that the copula makes an identifiable semantic contribution to the meaning of sentences, and hence cannot be merely a semantically empty realization of the category Pr. However, even though evidence may support the claim that copulas have semantic content, we argue in this section that that contention is compatible with the direct insertion analysis of the copula.

Rothstein (1999) presents several arguments in favor of the claim that copulas are not semantically empty. Here we will focus on four puzzles for the view that the copula does not add any meaning to a structure that it occurs in.

The first argument is that there is a semantic difference between (12a) and (12b).

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[2] Another possible argument in favor of the copula being base-generated in Pr comes from historical data. Full verbs may develop into copulas, which can be analyzed as the result of a process where the verb changes its merge position from V to Pr. See Lohndal (to appear) for details and illustration.

(12)   a. Mary considers Jane very clever.

      b. Mary considers Jane to be very clever.

Rothstein (1999: 349) remarks that "it has often been commented that small clauses like [(12a)] 'feel' more 'individual level', inherent, or general than their inflected verbal counterparts in [(12b)]". She further points out that this cannot be due to the stage/individual-level distinction itself. (13a) shows that a temporary stage-level property is predicated of the subject in a bare small clause, whereas in (13b) the inflected form is used to make an individual-level predication.

(13)   a. The doctor considers Mary quite sick/very fluish.

      b. I believe Mt. Everest to be the highest mountain in the world.

Rothstein's second argument is that if *be* expresses just function application, we should be able to either add it freely (14a), or delete it (14b). Neither is possible.

(14)   a. Mary considered Jane (*be) polite.

      b. Mary let Bill *(be) rude.

The third argument is that there is a clear semantic difference between (15a) and (15b).

(15)   a. Mary made Jane polite.

      b. Mary made Jane be polite.

(15b) strongly implies that Jane is an agent, whereas this is not the case in (15a).

    Fourthly, and finally, *be* in the progressive can only have certain predicates as its complement (Lakoff 1970 proposed that only non-stative complements are allowed).

(16)   a. Mary is being noisy/mean/*awake/*healthy.

   b. John is being a nuisance/*a murderer.

Partee (1977) also pointed out that these sentences depend on the subject having a [+animate] feature, cf. (17).

(17)   a. John is noisy/is being noisy.

   b. The river is noisy/*is being noisy.

Notice, however, that generally there is no restriction on animate subjects occurring with verbs in the progressive.

(18)   a. John makes/is making a lot of noise.

   b. The river makes/is making a lot of noise.

Thus, the difference must be related to the copula.

    Rothstein (1999, 2001) concludes on the basis of the three first properties that *be* denotes a packaging function, i.e. a function that maps from the mass domain to the count domain. The verb introduces a Davidsonian eventuality argument, but it gives no property of the eventuality and introduces no thematic roles. Rothstein's proposal is based on the hypothesis that there is a basic difference in the kinds of entities that adjectives and verbs denote. She argues that the domain of eventualities is divided into two, analogously to the division of the nominal domain into count and mass entities. The domain of adjectives, in this analysis, is a set of non-atomic, mass, state-like eventualities. Verbs, on the other hand, denote properties ranging over atomic, count-like eventualities. Rothstein (1999: 363) then argues that the verb *be* denotes a function from the domain of mass-states to the domain of Davidsonian eventualities, and has the effect of "packaging" a non-atomic mass-state into an atomic eventuality. We can illustrate this, as Rothstein does, with *be* combining with an AP, e.g. *be polite*. Here *be* introduces the eventuality argument and *polite* expresses a property of that eventuality. In other words: "The AP *polite* denotes the politeness property, and the VP expression *be polite* denotes the set of eventualities that instantiate the politeness property" (Rothstein 1999: 363). We

will not discuss the theoretical aspects of Rothstein's proposal, mainly because we think that her claim that the copula introduces no thematic roles is not completely correct, see the next section.

However, Rothstein's data clearly indicate that the copula has semantic content. The point we want to make here is that this fact does not at all exclude the direct insertion structure (6b). The direct insertion of English modals under T is a comparable case. The fact that each modal verb has individual semantic content does not require that it is generated under a V-projection. Independent semantic content is compatible with direct insertion under a functional projection. Therefore, the meaning differences between small clauses with and without a copula verb that are discussed by Bowers and Rothstein, are readily accounted for given the direct insertion structure in (6b). Thus, the possibility that the copula has a semantic contribution of its own, does not particularly favor generation under V as opposed to Pr, as long as this semantic contribution does not imply specific argument positions, in which case a VP is required to accommodate those positions. The take-home message at this point is that the fact that copulas have semantic content does not require a raising analysis. However, there are cases that we are unable to analyze if we do not assume the raising analysis. In the next section, we will see a number of such examples.


## 4. The complex structure of copular clauses

Assuming the direct insertion in Pr approach to copular constructions, Norwegian copular constructions like those in (19) have the (partial) structures in (20).


(19)   a. Jon er flink.

      'Jon is clever.'

    b. Jon er skreddar.

      'Jon is a tailor.'

(20)  a.  PrP                          b.  PrP
          /  \                             /  \
      Jon    Pr'                       Jon    Pr'
           /   \                            /   \
        Pr    AP                        Pr    NP
        er    flink                     er    skreddar

However, there are some problems with the direct insertion approach which we now turn to. One problem has to do with equative predicatives with a pronoun in the post-copular position. Typically, the post-copular pronoun is in the accusative, cf. (21) (Lohndal 2006):

(21)  Dette er meg.
      'This is me."

If accusative is assigned/licensed by V, that implies that there is a VP in (21), contrary to what is assumed in the direct insertion approach. Specifically, (21) suggests the structure shown in (22), cf. (6a).

(22)         PrP
            /  \
        dette    Pr'
              /    \
           Pr      VP
           $er_i$   /  \
                  V    DP
                  $t_i$   meg

Notice, however, that some Norwegian dialects allow a nominative pronoun instead of an accusative pronoun in these constructions, cf. (23) (see also

Sigurðsson 2006 for a comprehensive discussion of this variation across the Germanic languages).

(23) Dette er eg.

   'This is I.'

This suggests the following structure, because it is typically the case that <Spec, PrP> and <Comp, PrP> show case agreement in languages where both the subject and the property phrase bear case, e.g. as in German (cf. Flaathe 2007).

(24)          PrP
            /   \
        dette    Pr'
              /     \
           Pr       DP
            er      eg

In fact, we will hypothesize that both possibilities are allowed, i.e. both the type (22), cf. (6a), and the type (24), cf. (6b). We thus take the grammaticality of both (21) and (23) as initial evidence that both structural representations must be allowed by universal grammar.

   Given what we have argued earlier, the structure in (22) is of course the surprising one. It is possible to conjecture that the raising type (22)/(6a) is only relevant for the equative copula. However, there are other data that suggest that that is not so, and that the structure with PrP+VP, i.e. the raising type (6a), contrary to what we have been arguing so far, can be extended to the core copula type, e.g. to the copularizing AP type. We now turn to the relevant data to show this; consider (25)-(29).

(25)  a. Jeg mener/anser at lånet er litt i største laget for oss.

       I think/consider that the loan is a little too big for us

b.  Jeg mener/anser at lånet er **oss** litt i største laget.

I think/consider that the loan is us a little too big

c.  Jeg anser lånet som litt i største laget for oss.

I consider the loan as a little too big for us

d. ??/* Jeg anser lånet som **oss** litt i største laget.

I consider the loan as us a little too big


(26)  a.  Jeg mener/anser at denne sofaen er for kostbar for oss.

I think/consider that this sofa is too expensive for us

b.  Jeg mener/anser at denne sofaen er **oss** for kostbar.

I think/consider that this sofa is us too expensive

c.  Jeg anser denne sofaen som for kostbar for oss.

I consider this sofa as too expensive for us

d. ??/* Jeg anser denne sofaen som **oss** for kostbar.

I consider this sofa as us too expensive


(27)  a.  Jeg regner med at hunden er trofast mot meg.

I count on that the dog is faithful to me

b.  Jeg regner med at hunden er **meg** trofast.

I count on that the dog is me faithful

c.  Jeg regner hunden som trofast mot meg.

I count the dog as faithful to me

d. ??/* Jeg regner hunden som **meg** trofast.

I count the dog as me faithful


(28)  a.  Jeg regner med at hunden er trofast mot sin herre.

I count on that the dog is faithful to his master

b.  Jeg regner med at hunden er **sin herre** trofast.

I count on that the dog is his master faithful

c.  Jeg regner hunden som trofast mot sin herre.

 I count the dog as faithful to his master

d. ??/* Jeg regner hunden som **sin herre** trofast.

 I count the dog as his master faithful

(29)  a.  Jeg regner med at djevelens lunefullhet er fremmed for henne.

 I count on that the devil's capriciousness is foreign to her

b.  Jeg regner med at djevelens lunefullhet er **henne** fremmed.

 I count on that the devil's capriciousness is her foreign

c.  Jeg regner djevelens lunefullhet som fremmed for henne.

 I count the devil's capriciousness as foreign to her

d. ??/* Jeg regner djevelens lunefullhet som **henne** fremmed.

 I count the devil's capriciousness as her foreign

The data given here show that there is a systematic difference between the copula (the a- and b-versions) and predication particles like *som* 'as' (the c- and d-versions) when it comes to licensing an indirect object type goal argument (in **bold**). The copula licenses such an argument (the b-versions), whereas the predication particle does not (the d-versions).

Assuming that indirect object type goal arguments are by definition generated in <Spec, VP> (cf. Åfarli 2008), this means that copular clauses must allow the possibility that they contain a VP, whereas predication particle clauses cannot. This means that the copular clauses must allow the raising structure (6a).

Consider the embedded portion of (27a), shown here as (30), with the putative structure (31).

(30)  …at hunden er trofast mot meg.

 '…that the dog is faithful to me.'

(31)          PrP
             /  \
        hunden    Pr'
            /     \
          Pr      AP
           er    trofast mot meg


In (30) the PP *mot meg* is an adjunct. However, the argument of P may assume argument status, as shown in (27b), shown as (32).


(32)   …at hunden er **meg** trofast.

       …that the dog is me faithful


Since copulas (normally) do not require non-subject arguments, no VP is required (VP being the locus of the display of non-subject arguments), and the possibility of generating the copula directly in Pr is possible and therefore allowed, and perhaps even required given economy. Now we see in the type (32) an example of a copular construction that contains an argument. By comparable reasoning this construction must contain a VP to accommodate the new argument. Specifically, the position that accommodates the argument must be <Spec, VP>, since the argument has the canonical goal role associated with that position. In other words, (32) must have the structure in (33).

(33)           PrP
              /  \
        hunden   Pr'
              /      \
           Pr        VP
           er$_i$    /      \
                  meg    V'
                       /  \
                      V    AP
                      t$_i$    trufast
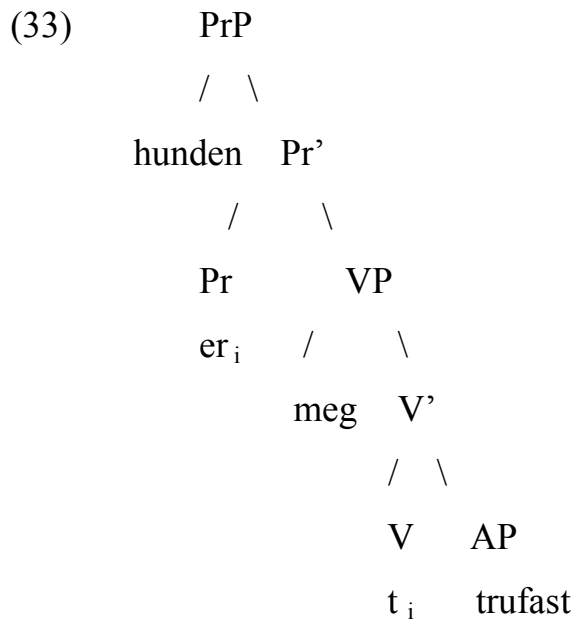

Now, notice that (33) poses a serious problem. Semantically, *trufast* 'faithful' in (33) is a predicational property of *hunden* 'the dog,' but that does not follow from the structure. Even though *trufast* is included in the complex predicate *er meg trufast*, that is not sufficient for making *trufast* in particular a property ascribed to *hunden*, because if it were, *meg* should also be a property of *hunden*, which it is not (and cannot be). What is needed to make *trufast* the property ascribed to *hunden*, is that *trufast* is a property phrase in the complement position of a predication operator in Pr, which has *hunden* in its specifier position. Therefore, (33) must be revised, and (34) is the structure that is more likely to be the correct one.

(34)　　　　PrP
　　　　　／　＼
　　　hunden<sub>j</sub>　Pr'
　　　　　／　　＼
　　　　Pr　　　VP
　　　　er<sub>i</sub>　／　＼
　　　　　　meg　V'
　　　　　　　／　＼
　　　　　　　V　　PrP
　　　　　　　t<sub>i</sub>　／　＼
　　　　　　　　　t<sub>j</sub>　Pr'
　　　　　　　　　　／　＼
　　　　　　　　　Pr　AP
　　　　　　　　　Ø　　trufast
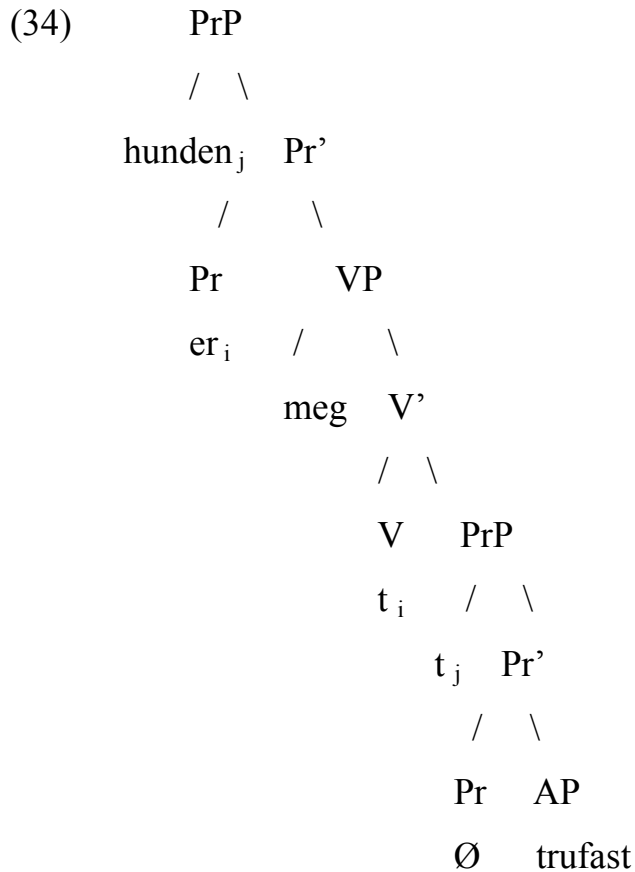
In (34), all the predication relationships are correctly derived by assuming two PrPs.

In this section we have argued that the two different structures for copulas, viz. raising to Pr or base-generation in Pr, are able to accommodate case alternations on the property phrase. Furthermore, we have also shown that copulas and predication particles differ in their ability to license arguments. Last, we have shown how complex copula constructions can be analyzed on the basis of the predication framework. Specifically, we have shown empirical motivation for the raising analysis of the copula by showing that the VP is necessary in order to license enough argument positions. Predication particles do not license an extra argument position, which follows from the claim that these particles only allow for the direct merging alternative. That is, predication particles can never raise from a lower phrase and into Pr. This asymmetry between copulas and core cases of non-verbal predication like the use of predication particles is a good argument in favor of distinguishing copulas from non-verbal predication in general.

## 5. Conclusion

In this paper we have shown that the copula and the predication particle *som* differ in their ability to license argument positions. These data have been taken to support an analysis of copular clauses whereby the copula may be generated as the head of a VP and raised to Pr. At the same time, there is also evidence that a structure where the copula is directly inserted in Pr is available.

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# Verb particles in OV/VO word order in Older Icelandic

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**Abstract**

Older Icelandic had various word order patterns with verb particles, including both pre- and postverbal particles. The most frequent patterns in the attested corpus show a preverbal particle and a postverbal direct object, or a preverbal particle and a preverbal direct object. In the earliest texts, dating from the fourteenth century, preverbal particles are preferred over postverbal particles, although both pre- and postverbal particles co-exist in the corpus for several centuries. In this paper, we will shown how a small clause analysis of verb particles, together with a remnant VP movement framework (Hróarsdóttir 2000) can account for the attested orders of verb particles in the history of Icelandic.

## 1 Introduction

In this paper, we will focus on various word order patterns in Older Icelandic with verb particles.

Modern Icelandic has pure VO word order, as shown in (1). The word order in (1) with auxiliary verb – main verb – object - (particle) is the only possible order of these elements in Modern Icelandic (abstracting away from topicalization and stylistic fronting). The non-finite verbs and their objects must follow the negation and sentential adverbs.

(1)   *Modern Icelandic*

    a.   Þeir munu aldrei **hafa lesið bókina**

        *they will never have read book.the*

        'They will never have read the book'

    b.   að þeir hefðu aldrei **gefið þau út**

        *that they had never published them out*

        'that they had never published them'

Unlike in Modern Icelandic, several orders of the non-finite verbs and objects were possible at earlier stages in the history of Icelandic, including both OV and VO word order patterns, in addition to various mixed orders (cf. Sigurðsson 1988; Rögnvaldsson 1996; Indriðason 1987; Hróarsdóttir 1996, 2000). The attested OV word order patterns were lost at the beginning of the nineteenth century. Two examples of OV word order in OI are shown in (2) below.

(2)   *Pure OV word order*

a.   að hann hafi **hana drepið** (Álf)

*that he had her killed*

'that he had killed her'

b.   að þeir hefðu **þau** aldrei **út** gefið (Morð)

*that they had them never out published*

'that they had never published them'

Hróarsdóttir (2000) studied the frequency of OV and VO patterns in various texts dating from the fourteenth to the nineteenth centuries, in addition to personal letters dating from throughout the nineteenth century. Here, we have built on this database, making it approximately double in size from that used earlier, based on a wider extraction of the same texts. A list of the sixteen texts used for this study is given in Appendix A, together with bibliographical information. These texts are literary works, all in reliable editions based directly on the original composition. Approximately 55 pages were extracted from each text, where possible, until a corpus of approximately 8,500 sentences each containing at least one non-finite verb had been reached, exhibiting either OV or VO word order. Nineteenth century letters by 75 individuals were also studied. Bibliographical information for the nineteenth century letters are given in Appendix B, together with an explanation for the abbreviations in parentheses in the examples.

## 2  Empirical facts

In the attested Older Icelandic (OI) texts, the total of 653 clauses were extracted, each containing at least one non-finite verb and a verb particle. The distribution between OV and VO word order patterns is illustrated in Table 1 below, where OV means that at least the verb particle occurs preverbally.

| Texts | Particles | | |
|---|---|---|---|
| | OV | VO | % OV |
| 14th century | 68 | 19 | 78.2% |
| 15th century | 42 | 11 | 79.2% |
| 16th century | 32 | 6 | 84.2% |
| 17th century | 53 | 25 | 67.9% |
| 18th century | 36 | 18 | 66.7% |
| 19th century | 67 | 277 | 19.5% |
| | 298 | 356 | |

Of all the particles found in OV word order, the particle always immediately precedes the main verb (and the infinitive marker), with only one exception, illustrated in (3) below.

(3)     skal yður **inn** aptur **mælt** verða  (Morð)
        *shall you in again spoken be*
        'It will be recommended that you can go in again'

The rule of the adjacency between the preverbal particle and the main verb is otherwise independent of other constituents in the sentence, whether they are arguments of the main verb or sentence adverbs. When the sentence contains an object in addition to the preverbal particle, the object can either occur in a postverbal position or to the left of both the particle and the main verb. Consider examples (4) through (8).

(4)     [particle - V~main~ - DP]

      a.    að hann hafi **inn**drukkið **Lutheri villudóm**  (Bisk)

           *that he has in-drunk Lutheran heresy*

           'that he has drunk in Lutheran heresy'

      b.    hefði Grundar-Helga **upp** alið **þessa Ingigerði**  (Morð)

           *had Grundar-Helga up brought this Ingigerður*

           'Grundar-Helga had brought up this Ingigerður'


(5)     [particle - V~main~ - PP]

      a.    að spá mín hefur **fram** komið **við þig** þar eystra  (letters)

           *that prediction mine has forward come with you there in-the-east*

           'that my prediction has come true for you there in the east'

      b.    eff þesse girnd mæti **vt**kastast **aff ydar hiarta**  (Dín)

           *if this lust could out-throw from your heart*

           'if this lust could go out of your heart'


(6)     [DP - particle - V~main~]

      a.    at ek skylldi eigi **fleiri born upp** ala  (Finn)

           *that I should not more children up bring*

           'that I shouldn't bring up more children'

      b.    að þeir hefðu **þau** aldrei **út** gefið  (Morð)

           *that they had them never out given*

           'that they had never published them'


(7)     [PP - particle - V~main~]

      a.    Sá nýi viður var **í stóru stofu inn**lagður  (J.Ey)

           *this new wood was in large living-room in-placed*

           'This new wood was placed in the large living room'

b. að Óðinn og ... hafi **hér í norðurlöndum** með sér **inn**fært (Munn)

  *that Óðinn and ... have here in Nordic-countries with themselves*

  *in-brought*

  'that Óðinn and ... have brought with them into the Nordic

  countries here'

(8) [Vaux - particle - Vmain - (DP)]

  a. at ek villda giarna **hafa vpp** fæðt (Finn)

   *that I wanted gladly have up brought*

   'that I would gladly have brought up'

  b. Hann skyldi einu sinni **hafa upp**vakt uxa þann sem ... (Munn)

   *he should once have up-woken ox the-one that ...*

   'It is said that once, he had woken up the ox that ...'

These patterns, though, are not all equally common in the texts. Thus, only the patterns shown in (4) and (6) are common, that is, where a DP either follows the main verb or precedes both the particle and main verb. In the former pattern, the DP was a full DP in almost all cases and only a pronoun in a single clause, shown in (9) below.

(9) og hafdi þat **fram**dregit **hann** fyrst til Oddastadar, at ... (Esp)

  *and had it forward pulled him first to Oddastaðir, that ...*

  'And it had first made him go to Oddastaðir, that ...'

In the pattern [DP - particle - Vmain], on the other hand, the DP could be either a full DP or a pronoun, with an equal frequency.

 Furthermore, patterns containing a preverbal particle and no object are very common. In all the corpus studied, 171 sentences of this sort were found. Some of these examples are shown in (10) and (11).

(10)   [particle - V<sub>main</sub>]

      a.      eða það er **niður** drepið  (letters)

            *or it is down killed*

            'or it is kept secret'

      b.      og mætti þeir **út** gánga  (Skál)

            *and could they out go*

            'and they could go out'

      c.      jafnódt of það hefr **nidur** sýgid  (letters)

            *as-soon as it has down sunk*

            'as soon as it has sunk down'


(11)   [sentence adverb - particle - V<sub>main</sub>]

      a.      að við Guðrún mín máttum **ei saman hokra**  (letters)

            *that we Guðrún mine could not together live*

            'that Guðrún and I were not allowed to live together'

      b.      hafði hann **aldrei aftur litið**  (letters)

            *had he never back looked*

            'He had never looked back'

      c.      að þessi sök sé **allareiðu burt lögð**  (letters)

            *that this accusation is already away put*

            'that this accusation has already been deleted'


As can been seen from examples above, the particle could precede either main verbs that are past participles or infinitivals. When the infinitival main verb occurs with the infinitive marker *að* ('to'), the particle always (immediately) precedes *að*. Consider (12).

(12)    [(DP) - particle - *að* - V~main~]

    a.    ekki hirði ek þersvm smæRum hiRðzlum **wpp ath luka**  (Sig)

          *not care I these smaller chests up to open*

          'I don't care to open up these smaller chests'

    b.    er aungvum auðnaðist **upp að koma**  (Próf)

          *that noone succeeded up to come*

          'that noone succeeded in coming up'

    c.    eg hafi þá engu hér **við að bæta**  (letters)

          *I have then nothing here with to add*

          'that I have then nothing to add here'

A single exception was found to the adjacency rule, exemplified in (13) below.

(13)    Jarðarför hans á **að fram fara** 23. janúar  (letters)

    *funeral his will to forth go 23d January*

    'His funeral will take place on January 23'

In all the corpus studied, only a handful of examples were found where a DP occurs preverbally while the particle is in the postverbal position, cf. (14).

(14)    [DP - V~main~ - particle]

    a.    Af almennum fréttum vil eg **ekkert tína til**  (letters)

          *of common news want I nothing gather to*

          'I don't want to mention anything from common news'

    b.    að 10 menn geta ei **þau hafið upp** þangað  (J.Ey)

          *that 10 men can not them lift up there*

          'that 10 men cannot lift them up there'

The total distribution of both pre- and postverbal particles in OI is illustrated in (15) and (16), respectively.

(15)   Preverbal particles

    a.   [particle - $V_{main}$]

    b.   [particle - $V_{main}$ - DO]

    c.   [particle - $V_{main}$ - PP]

    d.   [particle - $V_{main}$ - $V_{aux}$]

    e.   [DO - particle - $V_{main}$]

    f.   [PP - particle - $V_{main}$]

    g.   [DO - particle - $V_{main}$ - IO]

    h.   [DO - particle - $V_{main}$ - PP]

    i.   [$V_{aux}$ - DO - particle - $V_{main}$]

    j.   [$V_{aux}$ - PP - particle - $V_{main}$]

    k.   [$V_{aux}$ - particle - $V_{main}$]

    l.   [$V_{aux}$ - particle - $V_{main}$ - DO]


(16)   Postverbal particles

    a.   [$V_{main}$ - particle]

    b.   [$V_{main}$ - particle - DO]

    c.   [$V_{main}$ - particle - PP]

    d.   [$V_{main}$ - DO - particle]

    e.   [$V_{aux}$ - $V_{main}$ - particle]

    f.   [$V_{main}$ - IO - DO - particle]

    g.   [$V_{main}$ - IO - particle - DO]

    h.   [$V_{main}$ - DO - particle - PP]

    i.   [$V_{main}$ - particle - PP - DO]

j.      [V$_{aux}$ - V$_{main}$ - DO - particle]

k.      [V$_{aux}$ - V$_{main}$ - particle - PP]

l.      [DO - V$_{main}$ - particle]

## 3 Implementation

### 3.1 Introduction

The existence of preverbal particles is usually assumed to be a typological feature of OV languages (see Greenberg 1966; Hawkins 1983). The position of verb particles has been used in the traditional generative literature as an argument for a uniform OV-base for many West Germanic languages, going back to Koster's (1975) discussion of the distribution of particles in Modern Dutch as strong evidence in favor of basic SOV word order, with verb-second word order in matrix clauses. The main argument is that particles are generally assumed not to be able to scramble, at least not in the West Germanic languages (cf. den Besten & Rutten 1989 for Modern Dutch and Santorini 1992 for early Yiddish). Pintzuk (1991, 1996) adopts this reasoning, claiming that the distribution of particles in Old English argues against a uniform VO-base analysis. "In particular, [particles] do not scramble leftward in Old English: In clauses with infinitive/participial main verbs, pre-verbal particles remain in their base-generated position immediately before the verb" (Pintzuk 1991:126). Therefore, Pintzuk assumes that the existence of preverbal particles lends strong support to the existence of an OV-base in Old English.

Van Kemenade (1987:29-39) applies Koster's (1975) observation to Old English as well. Rögnvaldsson (1994/1995, 1996) adopts the same reasoning for the situation in Old Icelandic, claiming than an OV-base must have existed (beside the VO-base) in the Old Icelandic VP. Finally, Kroch and Taylor (2000) and Pintzuk and Taylor (2006) use the distibution of verb particles in the history of English to argue for a competition between OV and VO grammars. They

claim that particles are prosodically light, and hence that the existence of postverbal particles must be taken as evidence for underlying VO order.

However, Roberts (1997), following Kayne (1985), assumes that the examples of preverbal particles in Old English can be treated as small clauses, optionally adjoining to the left of the verb in Old English. Diesing (1997) also proposes that the position of the particle in Yiddish does not reflect a head-complement order, but that it is a consequence of an obligatory incorporation of the prefix into the verbal head. She concludes that the preverbal particles are not phrasal, but, instead, instances of head-incorporation. Thus, they do not support the claim that Yiddish, or any other languages containing preverbal particles, necessarily have an OV word order base. Finally, Elenbaas and van Kemenade (2008) argue that particles in early Germanic are secondary predicates, and that they have literal meanings only in Old English and they are almost exclusively resultative. However, they argue that particles are not prosodically light at any stage in the history of English, as they may carry primary stress and occur in alliterating positions.

### 3.2 Preverbal particles

The distribution of preverbal particles in OI does not seem to pose a real challenge to the claim about a uniform VO-base, since when the particle is preverbal it always immediately precedes the main verb, independent of other constituents in the sentence, as illustrated in (17) through (19).

(17)  [particle - V$_{main}$ - DP]

a.  að hann hafi **inndrukkið** Lutheri villudóm  (Bisk)

*that he has in-drunk Lutheran heresy*

'that he has drunk in Lutheran heresy'

b. ... hefði Grundar-Helga **upp alið** þessa Ingigerði  (Morð)

*... had Grundar-Helga up brought this Ingigerður*

'Grundar-Helga had brought up this Ingigerður'

(18)  [DP - particle - V$_{main}$]

a. at ek skylldi eigi fleiri born **upp ala**  (Finn)

*that I should not more children up bring*

'that I should not bring up more children'

b. að þeir hefðu þau aldrei **út gefið**  (Morð)

*that they had them never out given*

'that they had never published them'

(19)  *[particle - DP - V$_{main}$]

The verb-particle combinations in OI, as well as in Old English (cf. Pintzuk 1991; Hiltunen 1983), were sometimes written as a single word, and sometimes as two separate words. No distinction was made in this study in this respect.

One possible way to account for the distribution of the preverbal particles is by use of the small clause analysis, as shown in (20) (cf. Kayne 1985; Svenonius 1992; den Dikken 1995, among others).

(20) Small clause analysis
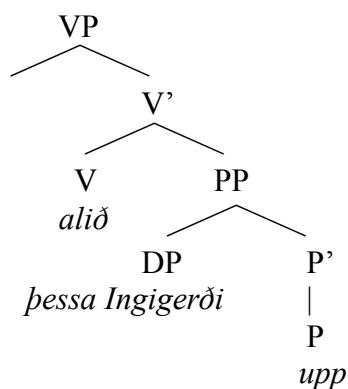
The particle movement here might either be seen as a head movement (cf. (21)) or a small clause movement. One argument in favor of the former possibility is that if the whole small clause were able to move, it might be difficult to explain why no adjuncts (or any kind of arguments) ever intervened between the particle and the verb. Following the former possibility, the particle head-moved (via adjunction) to the verb and the nominal object could either stay in situ (cf. the examples in (17) and the structure in (21)) or it could move to some position higher up (say, [Spec, AgrOP]) (cf. example (18) and the structure in (22)). A proposal for particle incorporation can also be found in van Riemsdijk (1982).

(21) particle - Vmain - DP

```
              VP
              |
              V'
          ___/ \___
         V          PP
        / \        /  \
       P   V     DP      P'
      upp  alið  þessa    |
                Ingigerði  P
                          t_particle
```

(22) DP - particle - Vmain

```
         _____
        /           \
   þessa Ingigerði_j  VP
                       |
                       V'
                   ___/ \___
                  V          PP
                 / \        /  \
                P   V     t_DP    P'
              upp_i alið          |
                              t_particle
```
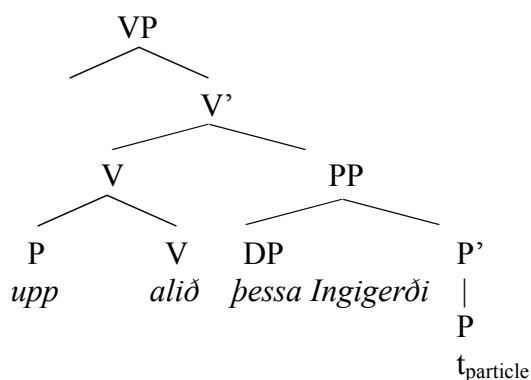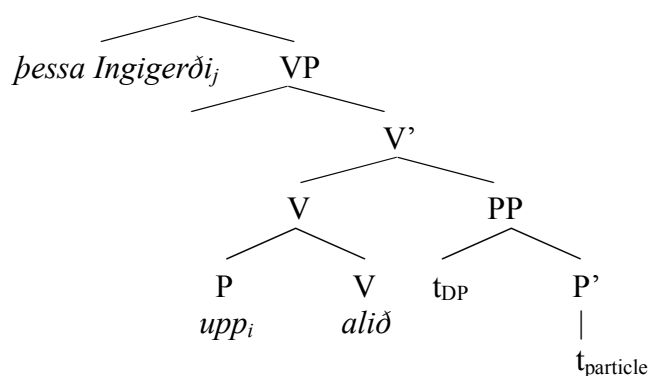
As mentioned, personal pronouns almost always preceded the particle in OI, thus they seem to have moved obligatorily, whereas the movement of a full DP object has been optional.

*3.3 Preverbal particles and the infinitive marker*

One problem arises regarding the distribution of the preverbal particles in OI. As mentioned, the particle was found in a preverbal position of both past participles and infinitives, but when the infinitival verb appeared with the infinitive marker *að*, the particle always immediately preceded it, as illustrated in (23).

(23)   [(DP) - particle - *að* - V$_{main}$]

a.   ekki hirði ek þersvm smæRum hiRðzlum **wpp ath luka**  (Sig)

*not care I these smaller chests up to open*

'I don't care to open up these smaller chests'

b.   er aungvum auðnaðist **upp að koma**  (Próf)

*that noone succeeded up to come*

'that noone succeeded in coming up'

c.   so þeir kunnu aldrei héðan **út að komast**  (Árm)

*so they could never from-here out to come*

'so they could never come out of here'

Similar patterns also exist in the West Germanic languages. These facts are not easily accounted for within the framework given above; Hinterhölzl (1998), for instance, has shown with the help of the infinitival marker that the particle cannot be taken to incorporate into the verb but must undergo XP-movement. It has been suggested in the literature that the infinitive marker *að* in Icelandic is generated either in Infl or Comp (cf. e.g. Holmberg 1986; Sigurðsson 1992), or even in [Spec, CP] (cf. Kayne 1991). Thráinsson (1993) has also recently claimed that the infinitive marker occupies T in modal complements in Icelandic. Therefore, it might be possible to assume that the verb then is either incorporated or moved to the right of T, or whatever position *að* is taken to occupy (a derivation that Baker (1988) has to assume exists anyway, that is, incorporation/adjunction to the right), and only then, the particle can take off on

its usual trip and move (by adjunction) to this [að+verb] complex, as illustrated in (24) below.

(24)  particle - *að* - V$_{main}$

```
                    T'
              _____|_____
             T            VP
         ____|____     ____|____
        P        T           V'
       upp    __|__       ___|___
             T     V    t_verb   PP
             að   koma         __|__
                              DP    P'
                                   _|_
                                     P
                                   t_particle
```
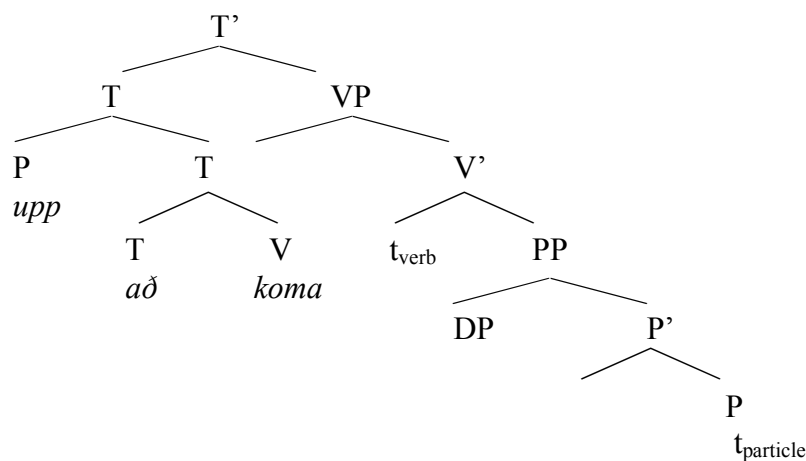
Chomsky (1995) discusses the directionality of head-adjunction in some detail, and comes to the conclusion that it may be possible to allow both left and right adjunction of a head to another head, although right adjunction is ruled out categorically in Kayne (1994). Furthermore, multiple adjunction to T (of both the verb and the particle) is also not legitimate according to Kayne's (1994) system, where all multiple adjunction is ruled out on a principled basis.

The facts as illustrated above for the distribution of preverbal particles in OI are very similar to the picture in Dutch (cf. e.g. Zwart 1993; Neeleman 1994; den Dikken 1995; Hinterhölzl 1998). The distribution of preverbal particles is the same in Standard German as well. The distribution of the particle with respect to the infinitive marker seems to cause some problems for a complex-predicate hypothesis (as proposed, for instance, in Neeleman 1994), since we would obviously need some extra equipment to derive the right word order patterns here, ending up having two different ways of deriving particle-verb order, one with past participles and one with infinitives. Neither Neeleman (1994) nor den Dikken (1995) offer any solution to this problem in Dutch. However, Zwart (1993) discusses the problem concerning the position of the

particle against the infinitive marker in Dutch. According to standard analyses of Dutch syntax, the infinitive marker *te* is generated in Infl. Zwart (1993), on the other hand, argues that *te* is not an infinitive marker and is not generated in Infl. "*Te*, then, appears to be involved in expressing a syntactic relation rather than tense. In this respect, *te* looks like a complementizer or a preposition, more than like an inflectional element" (Zwart 1993:102). He concludes that *te* cannot be a prefix/clitic on the infinitival verb, partly based on the fact that infinitival verbs in Dutch do not always require the (overt) presence of *te*; *te* is excluded in a number of contexts (see Zwart 1993:99-100). For instance, he points out that the infinitive marker *te* in Dutch, unlike real prefixes, can be dropped under conjunction, and that this construction is subject to restrictions; both the verbs are either intransitive or have the same object/[object + particle]. This follows from the coordinate structure constraint/ATB if, on the one hand, *te* is in a functional position [F] above the VP, and, on the other hand, objects and verb particles must move to a position above *te*. Zwart (1997:111-116) further presents two reasons to believe that *te* in Dutch is not generated in Infl. First, the inflectional features of the infinitive are expressed by a suffix, which makes the association of *te* with Infl seem unmotivated. Second, the presence of *te* is dependent on the configuration in which the infinitive appears. No direct relation exists between tense and the agreement features of the infinitive and the presence of *te*, Zwart claims. Hence, *te* looks more like a complementizer than like a tense/ agreement morpheme (cf. Zwart 1997:115).

In sum, all examples where a DP object (or other complements) precede *að* must be evidence for a leftward movement of objects.

## 4 Remnant movement and OV/VO order

A central question in the comparison of OV and VO languages is whether the difference results from having more object movements in OV languages, or more verb movements in VO languages. Here, we agree with the original

proposal of Haider (1992) that there are good reasons to assume that the verb moves more in VO languages. Haider thinks of this verb movement as head movement. However, this could also be a VP-movement, provided that the complements have first moved out of this VP. This is the path that Hinterhölzl (1997, 2006), Kayne (1998) and Hróarsdóttir (2000) take. They suggest that VO order might in some cases result from shifting a remnant VP containing the verb across complements extracted from the VP.

Hróarsdóttir (2000) makes use of remnant-movement of various kinds of predicative phrases, and the long movement associated with 'restructuring' phenomena, to provide an analysis of OV orders, and correspondingly, a proposal as to which aspect of Icelandic syntax must have changed when VO word order became the norm; the essential change is loss of VP-extraction from VP. Icelandic is taken to be uniformly VO where each verb has its own VP-projection and PredP-projection. In order to obtain successive cyclic application of VP-extraction resulting in intermediate structures of the form [Vmain - Vaux], VP-extraction is taken to be PredP-extraction (movement to Spec, PredP). The claim is that the crucial difference between OV and VO languages is simply that OV languages lack the VP-preposing Modern English and other VO languages have. Hence, it is possible to construct a theory with a universal base that derives all the attested OV and VO word order patterns, by means of three transformations (cf. Hróarsdóttir 2000):

- obligatory and universal movement of the direct object out of the VP (to [Spec, AgrOP] in the functional domain)
- optional extraction of the embedded VP from the matrix VP in Older Icelandic
- obligatory preposing of the remnant VP, containing the finite auxiliary verb in all VO languages, including all stages of Icelandic.

Let us start by illustrating the derivation of a simple VO order.

(25) *The initial structure*

```
                    FP
                   /  \
               Spec    AgrOP
                      /    \
                  Spec      PredPfin
                           /    \
                       Spec      VPfin
                                /    \
                            Vfin      PredPaux
                                     /    \
                                 Spec      VPaux
                                          /    \
                                      Vaux      PredPmain
                                               /    \
                                           Spec      VPmain
                                                    /    \
                                                Vmain     object
```
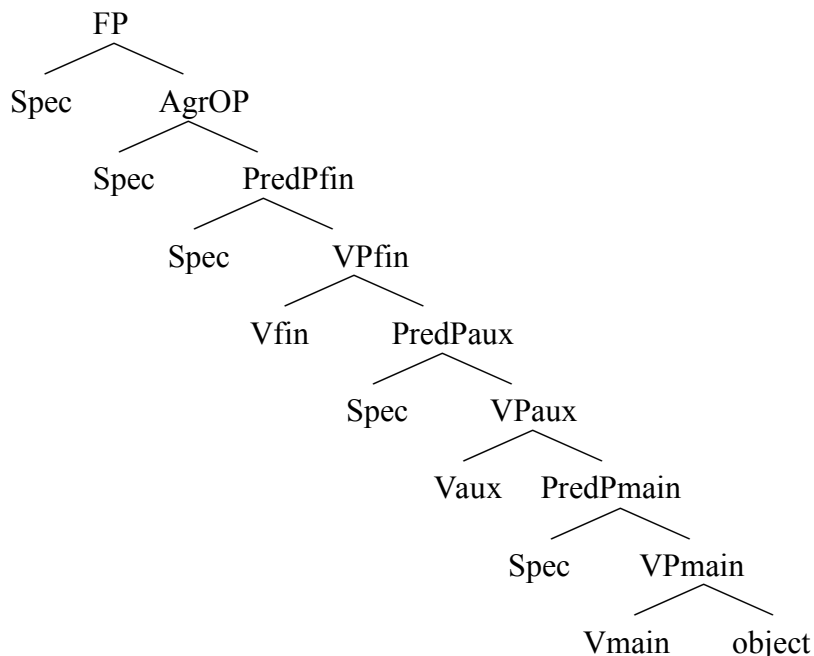
(26) *VO order: [Vfin - Vmain - DP]*

First step: DP moves to Spec,AgrOP

Second step: The remnant VPfin moves to Spec,FP

```
                       FP
                      /  \
                 VPfin    AgrOP
                /  \      /   \
            Vfin    PredPmain  DP  PredPfin
                        \          /   \
                      VPmain    Spec    t_VPfin
                      /  \
                 Vmain    t_DP
```
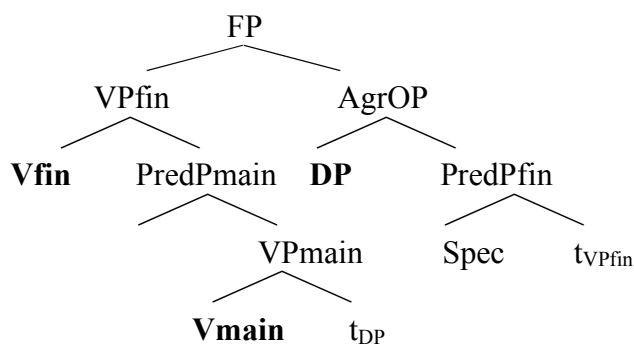
This derives the surface VO word order [Vfin - Vmain - DP].[1]

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[1] The above structure makes certain predictions about the placement of VP-adverbials in OI that will not be discussed further here. However, it is worth mentioning that, contra German, VP-adverbials in OI do not show mirror orders in OV and VO structures (see Hróarsdóttir 2000, 2008).

(27)  OV order: [$V_{fin}$ - DP - $V_{main}$]

First step:  PredP$_{main}$ moves to [Spec, PredP$_{fin}$]     (VP-out-of-VP option)

Second step:  DP moves to [Spec, AgrOP][2]

```
                    FP
                   /  \
               Spec    AgrOP
                      /   \
                    DP     PredPfin
                          /    \
                   PredPmain    VPfin
                    /   \       /   \
                 Spec   VPmain Vfin  tPredPmain
                        /   \
                    Vmain   tDP
```

Third step:  VP$_{fin}$ (remnant finite VP) moves to [Spec, FP]
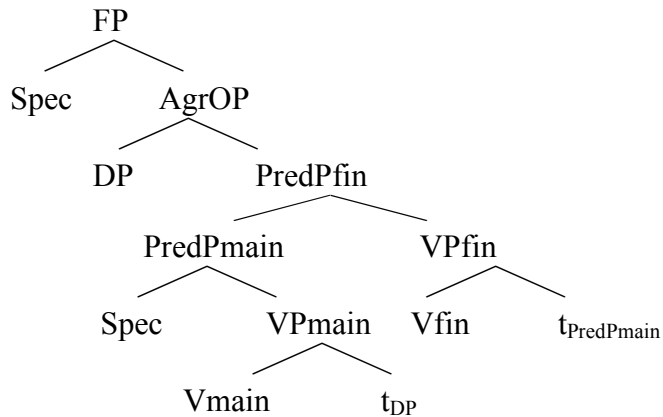
```
               FP
              /  \
          VPfin   AgrOP
          /  \    /   \
      Vfin  tPredPmain  DP   PredPfin
                            /    \
                      PredPmain   tVPfin
                       /   \
                    Spec   VPmain
                           /   \
                        Vmain  tDP
```
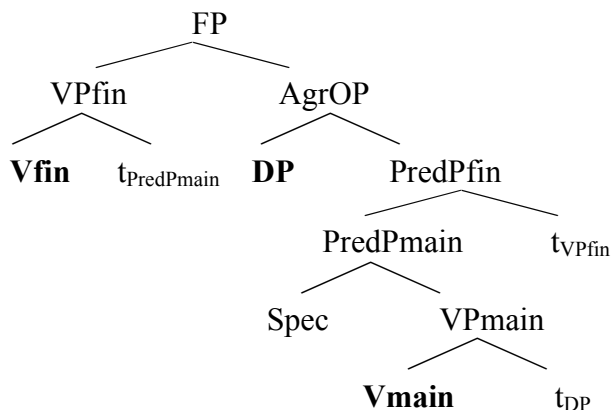
This derives the OV word order [$V_{fin}$ - DP - $V_{main}$].

The preposing of the remnant finite VP will always mask the object movement, deriving VO word order only, as long as the option of extracting the embedded VP from the matrix VP has not been chosen. In order to obtain successive cyclic application of VP-extraction resulting in intermediate structures of the form [[$V_{main}$ $V_{aux}$] [$V_{fin}$...]], VP-extraction is taken to be

---

[2] In order to prevent the DP to move out-of a structure that has already been moved (PredPmain), the DP should be evacuated out of PredPmain first, then PredPmain moves out of PredPfin, and finally, the DP raises to Spec, AgrOP.

PredP-extraction, that is, VP-extraction is to be implemented as movement to [Spec, PredP], where PredP is immediately above the VP. Hence, in order to derive the intermediate order [$V_{main}$ $V_{aux}$] [$V_{fin}$ ...]], PredP$_{main}$ must raise to [Spec, PredP$_{aux}$], and then, PredP$_{aux}$ raises to PredP$_{fin}$. Assuming that only the VP, not the PredP, raises to [Spec, FP] (across the complements), the final step of the derivation always puts the finite verb in front of its complements. See the derivation of other word order patterns in Hróarsdóttir (2000).

The next question is whether it is possible to derive the attested word order patterns with verb particles within this framework.

## 5  Remnant movement and particles

The question whether the VO word order of Icelandic results from more verb-movement or more VP-movement than in OV languages is related to the behavior of  verb particles in the Germanic VO  and OV languages. There are two interesting facts to note in this respect as discussed in Taraldsen (2000): First, the ordering with respect to the verb is [particle - verb] in the OV languages, while it is [verb - particle] in the VO languages. Second, while the particle can precede the DP object in (most) VO languages, it invariably follows all complements in the Germanic OV languages. This is illustrated for Icelandic in (28) and Dutch in (29).

(28)   a.    Hann hendir kettinum út
             *he throws cat-the out*

       b.    Hann hendir út kettinum
             *he throws out cat-the*

(29)   a.    Hij schakelt het licht uit
             *he turns the light off*

    b.        \*Hij schakelt uit het licht

           *he turns off the light*

    c.        omdat hij het licht uitschakelt

           *because he the light off-turns*

    d.        \*omdat hij uit het licht schakelt

           *because he off the light turns*

As Hinterhölzl (1997) and Taraldsen (2000) both mention, certain occurrences of verb particles in the Germanic languages cannot be derived by incorporation in terms of head movement, but must involve some XP-movement instead. This is actually one of the main motivations for Hinterhölzl's analysis of verb-raising in terms of an XP-movement of a VP or some bigger projection.

    In Dutch, a verb particle can either precede the verb cluster (created by verb-raising), or it can become part of the verb cluster, as illustrated in (30) (examples from Hinterhölzl 1997: 9).

(30)   a.     dat Jan Marie op wil bellen

           *that Jan Marie up wants call*

      b.     dat Jan Marie wil op bellen

           *that Jan Marie wants up call*

           'that Jan wants to call up Marie'

In OI, only the latter possibility is possible for preverbal particles (resulting from short particle movement in OI). "If we assume that verb-particles in Dutch are not licensed via incorporation but by XP-movement to either [Spec, PredP] or [Spec, F1P], then the cases in which a to-infinitive has been raised with its particle that are so problematic for the standard theory [...] fall in place nicely [...]" (Hinterhölzl 1997:16). This is illustrated in (31) below.

(31)   dat Jan [Marie]$_{TP}$ probeerde [$_{CP}$ [$_{F1P}$ [$_{PP}$ op] te [$_{VP}$ bellen t$_{PP}$]] t$_{TP}$]

*that Jan Marie tried up to call*

'that Jan tried to call up Marie'

Assuming a uniform S-H-C order of constituents, in the spirit of Kayne (1994), it not only becomes necessary for the direct object to follow the verb in base word order (regardless of whether it is a surface OV  or VO language), it also becomes necessary for the  verb particle to occur in a postverbal position. If we assume the particle to constitute a small clause together with the DP object, the base word order for both the OV  and the VO languages must be along the lines shown in (32) and (33).

(32)   [$_{VP}$ verb [$_{SC}$ DP [particle]]]

   a.   henda kettinum út (Icelandic)

        *throw cat-the out*

   b.   slå lyset av  (Norwegian)

        *turn light-the off*

   c.   schakel het licht uit  (Dutch)

        *turn the light off*

(33)

```
              VP
            /    \
                 V'
               /    \
             V        PP
          henda     /    \
                  DP        P'
                kettinum     |
                             P
                            út
```
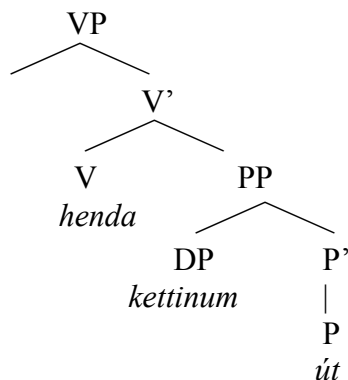
Following Hróarsdóttir's (2000) framework, the first step in the derivation must

raise the direct object obligatorily out of the VP into [Spec, AgrOP] in all the languages, as illustrated for Icelandic and Dutch in (34) and (35), respectively.

(34)   [AgrOP DP [VP verb [SC tDP [particle]]]]

     a.     kettinum hendir út  (Icelandic)

           *cat-the throws out*

     b.     het licht schakelt uit  (Dutch)

           *the light turns off*

(35)

               AgrOP
          DP         VP
        *kettinum*
                   V'
               V        PP
           *hendir*
                  tDP      P'
                           P
                         *út*
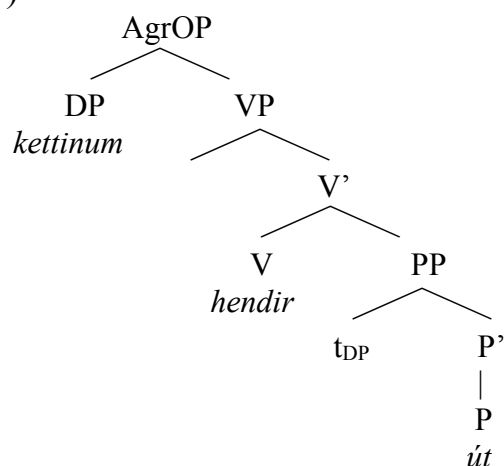
The second step in the derivation distinguishes the two languages, and OV  and VO languages in general, where the remnant VP raises to [Spec, FP] above the extracted direct object. As a result, the verb is situated to the left of its complements (even in embedded non-verb-second clauses). The particle can at this point be situated inside the VP, as a result of it raising together with the verb within the remnant VP, acquiring its position to the left of the object. Assuming that no such movement applies in OV languages, the particle cannot raise across the object in OV languages. This is illustrated in (36) and (37).

(36)  $[_{FP}$ $[_{VP}$ verb $[_{SC}$ $t_{DP}$ [particle]]] $[_{AgrOP}$ DP $t_{VP}$]]

hendir út kettinum  (Icelandic; remnant VP-preposing)

*throws out cat-the*

(37)

```
                    FP
                   /  \
                 VP    AgrOP
                /  \   /   \
              V'  DP     t_VP
             /  \ kettinum
           V    PP
        hendir  /  \
            t_DP   P'
                    |
                    P
                    út
```
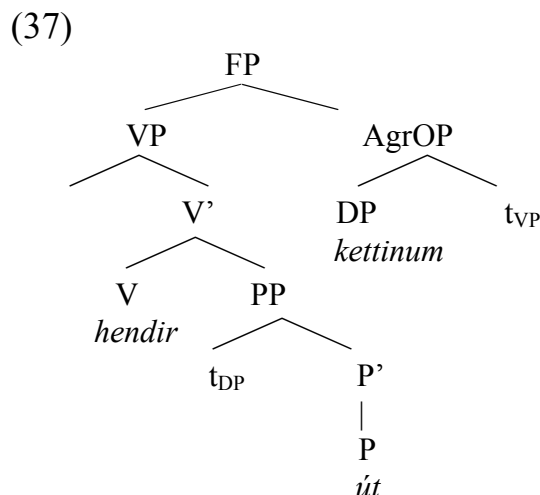
The third step in the derivation, then, raises the finite verb to the verb-second position. This movement applies in both Icelandic (both main and subordinate clauses) and in main clauses in Dutch (since Dutch is a verb-second language in main clauses), but not in English. We want to claim that the verb movement to the verb-second position is a head-movement, rather than VP-raising. This is illustrated for main clauses in (38) and (39). If the verb movement to the verb-second position is a head-movement, it follows directly that only the finite verb, and not the particle, can raise higher than the negation.

(38)  verb $[_{FP}$ $[_{VP}$ $t_{verb}$ $[_{SC}$ $t_{DP}$ [particle]]] $[_{AgrOP}$ DP $t_{VP}$]]

a.    schakelt het licht uit

      *turns the light off*

b.    hendir (ekki) út kettinum

      *throws (not) out cat-the*

(39)

```
        hendir    Neg
              ekki    FP
                  VP        AgrOP
                     V'      DP    t_VP
                             kettinum
              t_verb   PP
                    t_DP    P'
                            |
                            P
                            út
```
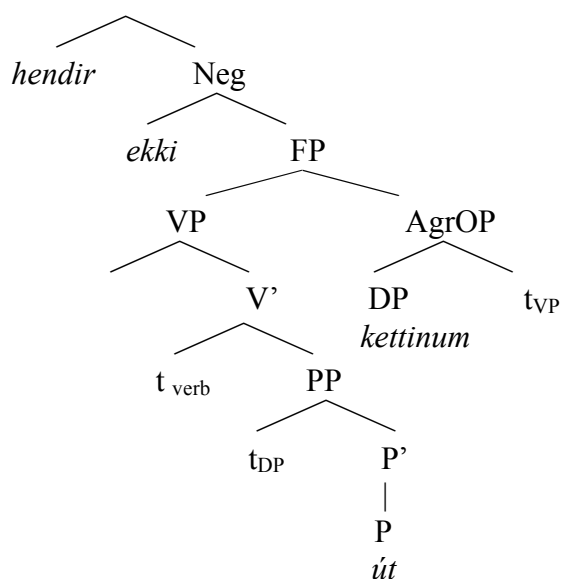
This correctly excludes the particle from preceding the DP object in Dutch and other OV languages, since they lack the remnant VP-preposing.

We assume that a particle can be raised across a DP object as part of the remnant VP. This is exemplified for Modern Icelandic in (40) and (41) below. In (40), the particle does not exit the VP, but moves along with VPfin when it moves to [Spec, FP], while in (41), the particle exits the VP and thus stays behind when the finite VP moves.

(40)   Jón hefur hent út kettinum
       *John has thrown out cat-the*

First step:  DP movement

```
                        FP
                   ╱         ╲
              Spec           AgrOP
                          ╱         ╲
                       DP            PredPfin
                    kettinum       ╱        ╲
                               Spec          VPfin
                                          ╱        ╲
                                      Vfin          PredPmain
                                      hefur        ╱         ╲
                                                Spec          VPmain
                                                           ╱        ╲
                                                       Vmain          PP
                                                        hent        ╱    ╲
                                                                 t_DP      P'
                                                                           |
                                                                           P
                                                                           út
```

Second step: VPfin moves to F

```
                    FP
              ╱            ╲
         VPfin              AgrOP
       ╱      ╲           ╱        ╲
    Vfin    PredPmain    DP         PredPfin
    hefur   ╱      ╲    kettinum   ╱        ╲
        Spec    VPmain          Spec        t_VPfin
               ╱      ╲
           Vmain       PP
            hent      ╱    ╲
                   t_DP      P'
                             |
                             P
                             út
```
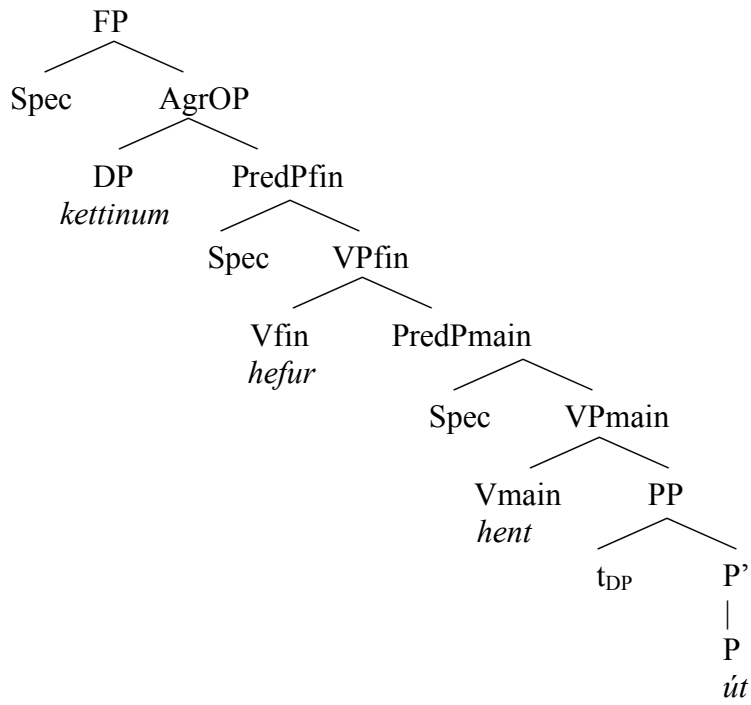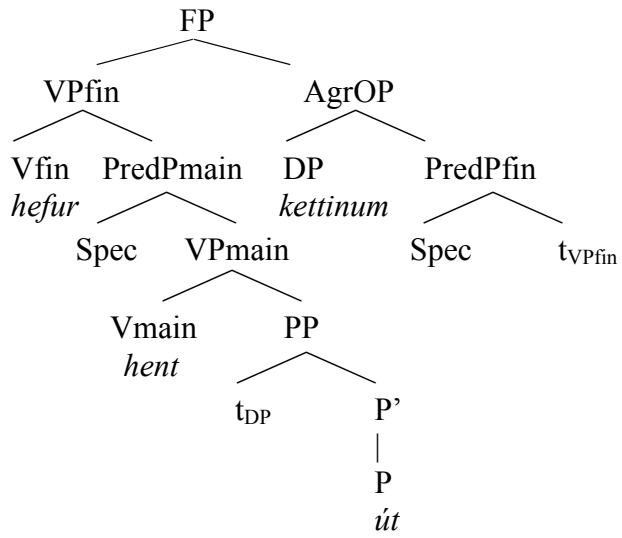
(41)  Jón hefur hent kettinum út

*John has thrown cat-the out*
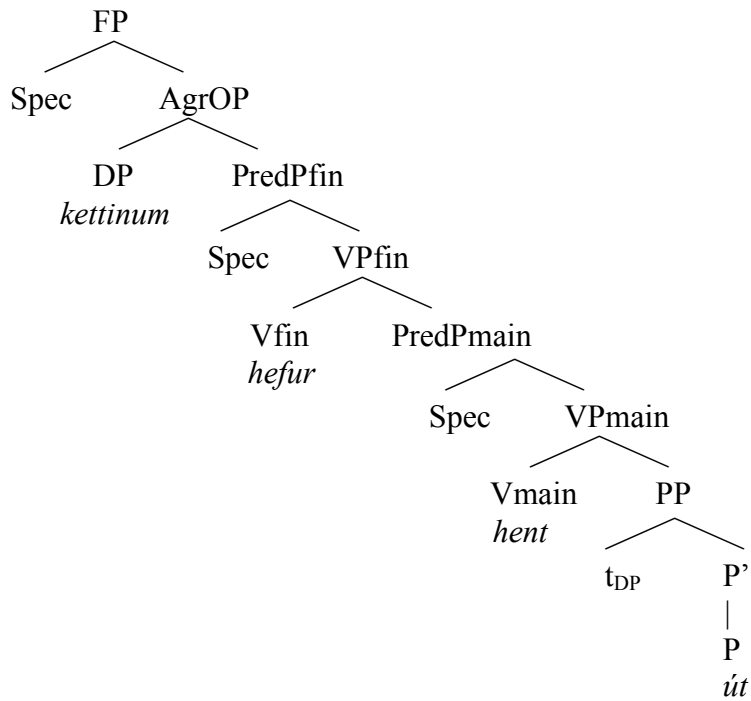
First step:  DP movement

```
                    FP
                  /    \
              Spec      AgrOP
                       /     \
                     DP       PredPfin
                  kettinum    /      \
                          Spec        VPfin
                                     /     \
                                  Vfin      PredPmain
                                  hefur     /       \
                                         Spec        VPmain
                                                    /      \
                                                 Vmain      PP
                                                 hent      /   \
                                                        t_DP     P'
                                                                 |
                                                                 P
                                                                 út
```
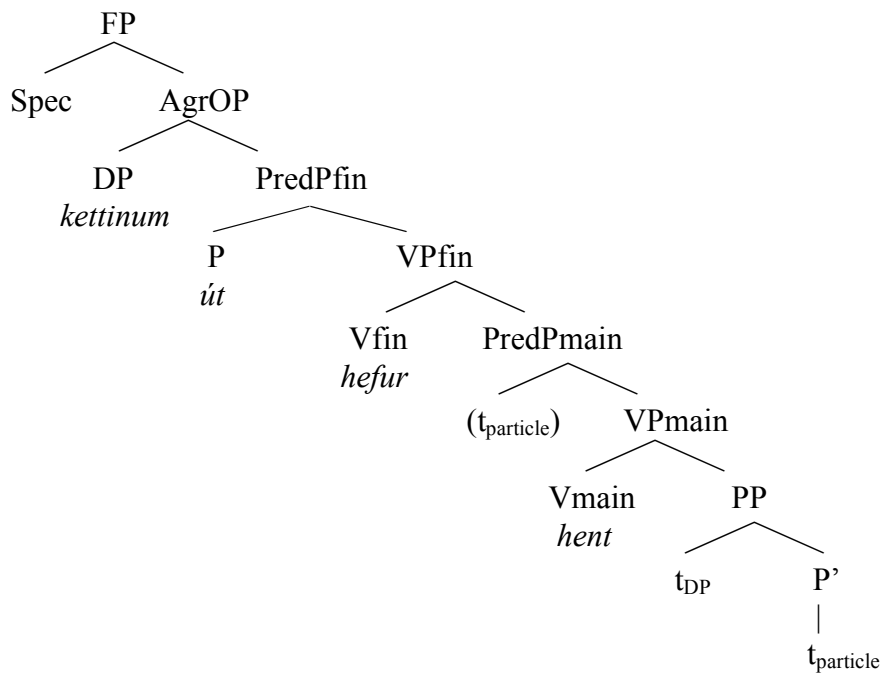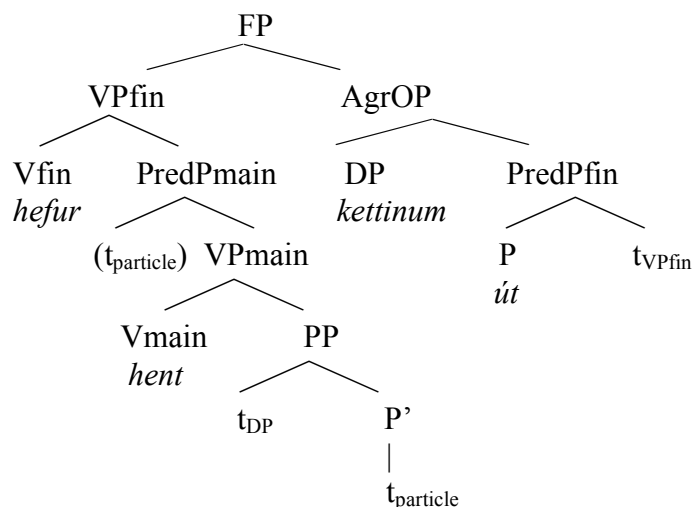
Second step: particle moves to Spec, PredPfin (via Spec, PredPmain)

```
                    FP
                  /    \
              Spec      AgrOP
                       /     \
                     DP       PredPfin
                  kettinum    /      \
                             P        VPfin
                             út      /     \
                                  Vfin      PredPmain
                                  hefur     /        \
                                    (t_particle)      VPmain
                                                     /      \
                                                  Vmain      PP
                                                  hent      /   \
                                                         t_DP     P'
                                                                  |
                                                                  t_particle
```

Third step:  VPfin moves to F

```
                        FP
                  ┌──────┴──────┐
               VPfin          AgrOP
            ┌────┴────┐      ┌───┴────┐
          Vfin   PredPmain  DP     PredPfin
          hefur   ┌───┴───┐ kettinum ┌──┴───┐
            (t_particle) VPmain      P      t_VPfin
                    ┌────┴───┐       út
                  Vmain     PP
                  hent    ┌──┴──┐
                        t_DP    P'
                                │
                              t_particle
```

In most OV languages, then, the particle movement must be obligatory, while in Icelandic and Norwegian, it is optional. This explains why particles in the Germanic OV languages must follow all complements of the verb. Since PredP is situated below AgrOP, the hypothesis correctly predicts the ungrammaticality of the pattern [particle - DP - verb] in the Germanic OV languages.

Taraldsen (2000) has shown that a variety of facts from Afrikaans, Dutch and the Scandinavian languages support this approach over an option where the particle is assumed to move as part of a complex verb. Note, for instance, the distribution of verb particles in the Scandinavian languages; while the movement is optional in Icelandic and Norwegian, as noted, it is obligatory in Danish and impossible in Swedish. Since all these languages are VO languages with obligatory VP-preposing, the differences in word order must be related to the fact that particles can be optionally stranded in Icelandic and Norwegian, while they must be stranded in Danish and, finally, must move along with the VP in Swedish. Whether or not the particle can move from the VP to PredP is presumably connected to different status of particles in the languages in question; assuming [PredP] to be a position where only full phrases can be licensed, then, verb particles in Danish and Afrikaans will always be regarded as phrases, while in Swedish they will be heads. Icelandic and Norwegian, then,

have a choice between having particles characteristic of either phrases or heads. This could further depend on whether the particle in Icelandic and Norwegian has modifiers or not; a particle with modifiers must be regarded as being a full phrase, and, thus, exit the VP.
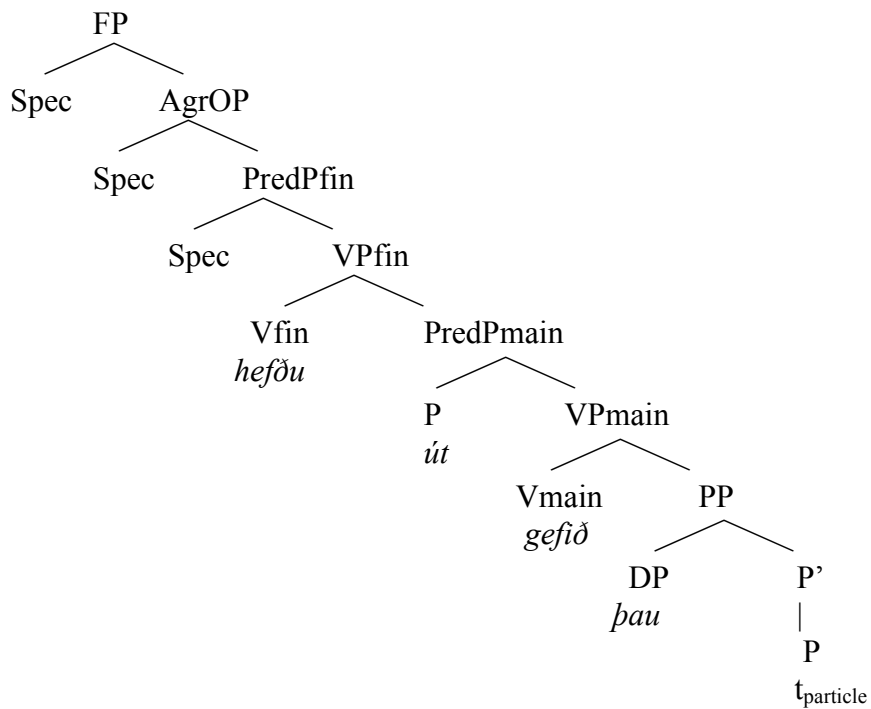
We can now revisit the preverbal particles in the OI corpus. As mentioned, the most frequent patterns show a preverbal particle and a preverbal direct object (42a), or a preverbal particle and a postverbal direct object (42b).

(42)  a.  að þeir hefðu **þau** aldrei **út gefið**  (Morð)

*that they had them never out given*

'that they had never published them'

b.  en þó munum ver eigi **vpp gefa roðrinn**  (Finn)

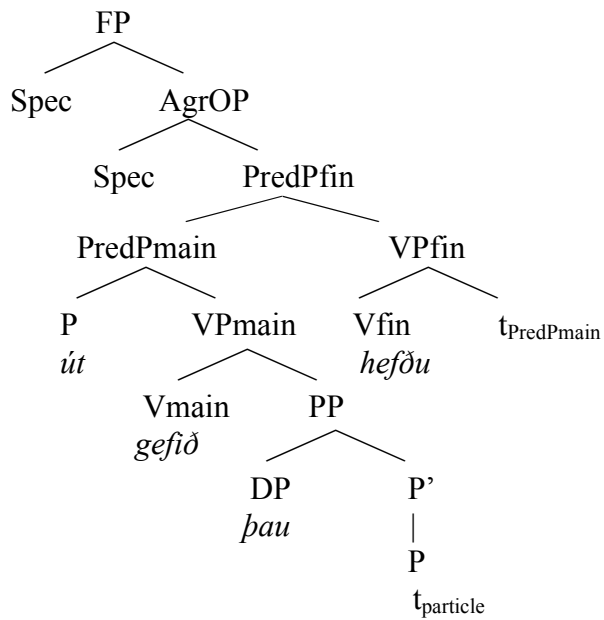*but yet will we not up give rowing.the*

'But yet, we will not give up rowing'

Let us start with the derivation of (42a), as illustrated in (43) below.

(43) [Vfin - DP - particle - Vmain]

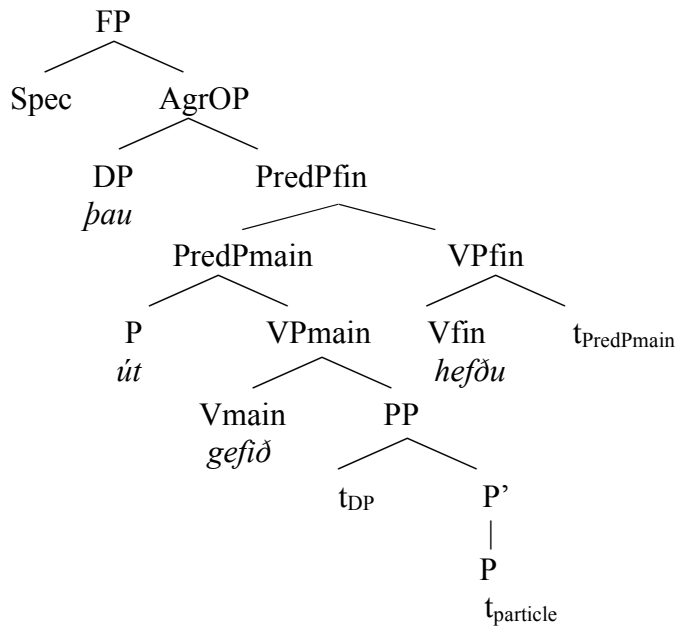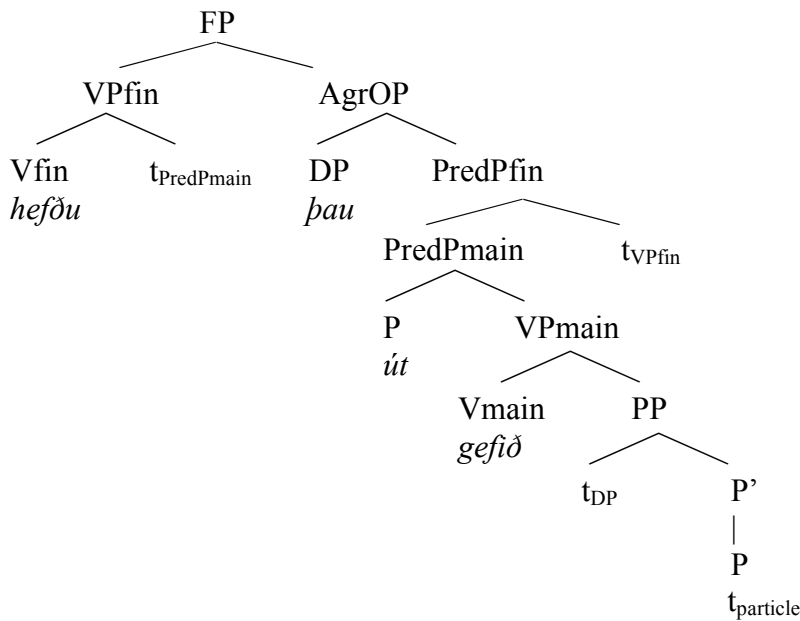First step: particle moves to Spec, PredPmain

```
                        FP
                   ╱         ╲
              Spec           AgrOP
                          ╱        ╲
                     Spec          PredPfin
                                ╱         ╲
                           Spec          VPfin
                                      ╱        ╲
                                 Vfin          PredPmain
                                 hefðu        ╱         ╲
                                            P           VPmain
                                            út        ╱       ╲
                                                 Vmain          PP
                                                 gefið       ╱     ╲
                                                          DP        P'
                                                          þau       │
                                                                    P
                                                                 t_particle
```

Second step: PredPmain moves to PredPfin (VP-out-of-VP option)

```
                      FP
                 ╱         ╲
            Spec           AgrOP
                        ╱        ╲
                   Spec          PredPfin
                               ╱         ╲
                     PredPmain           VPfin
                     ╱       ╲          ╱      ╲
                    P        VPmain    Vfin    t_PredPmain
                    út      ╱     ╲    hefðu
                       Vmain        PP
                       gefið      ╱     ╲
                                DP        P'
                                þau       │
                                          P
                                       t_particle
```

Third step: DP moves to [Spec, AgrOP]$^3$

```
                    FP
              ┌─────┴─────┐
            Spec        AgrOP
                   ┌──────┴──────┐
                  DP          PredPfin
                  þau      ┌─────┴─────┐
                      PredPmain       VPfin
                   ┌─────┴─────┐   ┌────┴────┐
                   P         VPmain Vfin   t_PredPmain
                   út      ┌───┴──┐ hefðu
                        Vmain    PP
                        gefið  ┌──┴──┐
                             t_DP    P'
                                     │
                                     P
                                  t_particle
```

Final step: VP$_{fin}$ (remnant finite VP) moves to [Spec, FP]

```
                  FP
          ┌───────┴───────┐
        VPfin           AgrOP
      ┌───┴────┐      ┌────┴────┐
    Vfin  t_PredPmain DP      PredPfin
    hefðu            þau    ┌────┴────┐
                       PredPmain    t_VPfin
                    ┌─────┴─────┐
                    P         VPmain
                    út      ┌───┴──┐
                          Vmain    PP
                          gefið  ┌──┴──┐
                               t_DP    P'
                                       │
                                       P
                                    t_particle
```

This derives the word order pattern [V$_{fin}$ - DP - particle - V$_{main}$].

Turning to the order in (42b), [Vfin - particle - Vmain - DP]. This pattern

---

$^3$ Again, in order to prevent the DP to move out-of a structure that has already been moved, the DP should be evacuated first. See footnote 2. For simplification, we will not illustrate the evacuation here.

illustrates a mixed or split OV word order, where the structure is partly OV and partly VO. In the OI corpus the most frequent split word order patterns show either a direct object to the left of the main verb and an indirect object to the right, or a DP to the left of the main verb and a PP in the postverbal position (see Hróarsdóttir 2000 for further discussion of these and other split patterns in OI). Of the split word order patterns containing a verb particle and a DP, only the pattern [Vfin - particle - Vmain - DP] occurs with a significant frequency in the attested OI corpus, while the pattern [Vfin - DP - Vmain - particle] was uncommon, as already noted. The derivation of (42b) is illustrated in (44) below.

(44) [Vfin - particle - Vmain - DP]

First step: particle moves to Spec, PredPmain
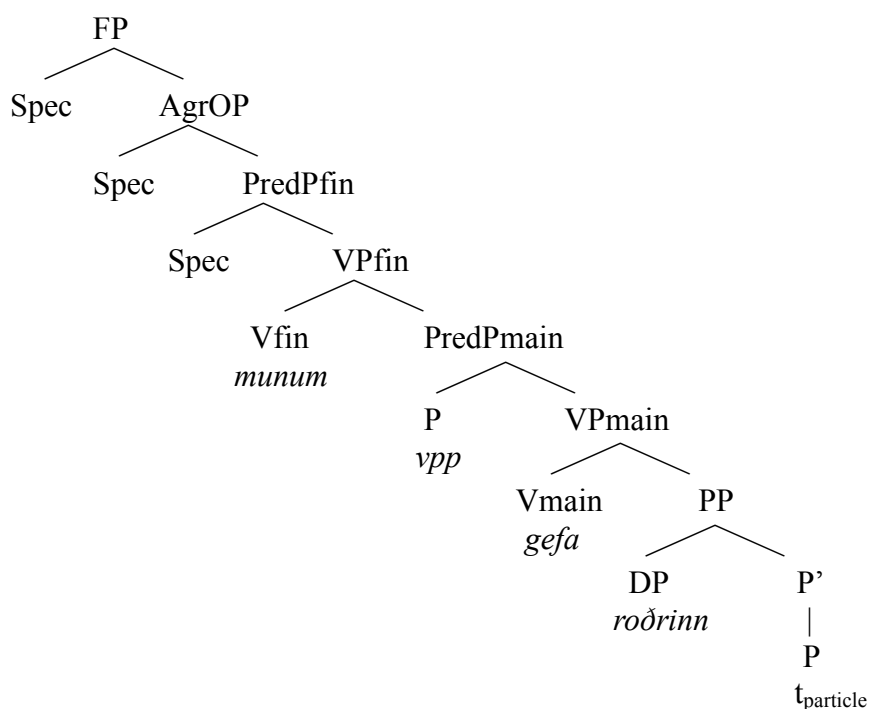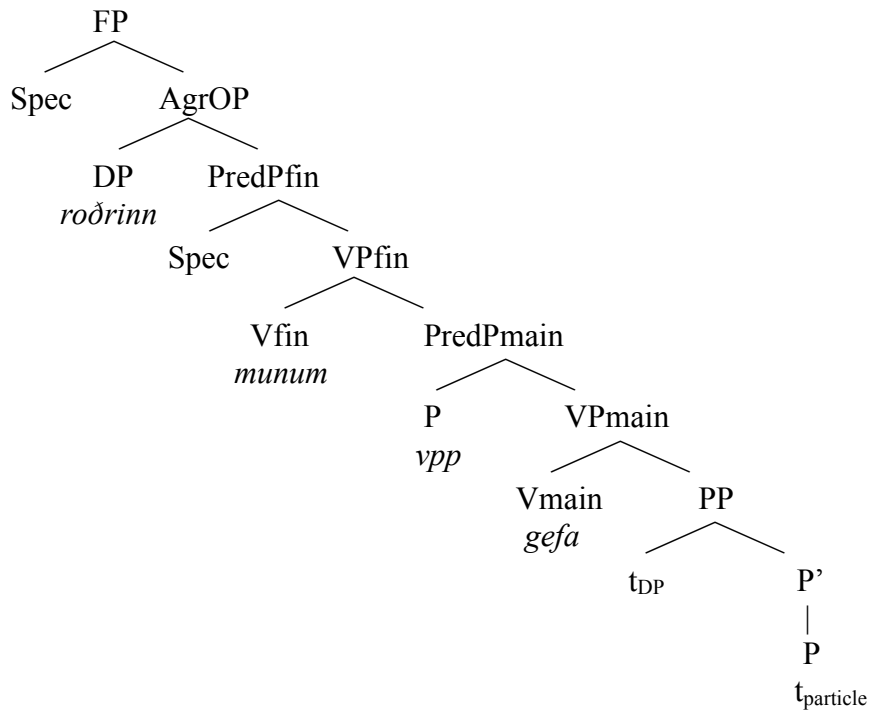
FP
Spec    AgrOP
            Spec    PredPfin
                        Spec    VPfin
                                    Vfin    PredPmain
                                    *munum*
                                                P        VPmain
                                                *vpp*
                                                            Vmain    PP
                                                            *gefa*
                                                                        DP        P'
                                                                        *roðrinn*    |
                                                                                        P
                                                                                        $t_{particle}$

Second step: DP moves to [Spec, AgrOP]

```
                    FP
              ┌─────┴─────┐
           Spec         AgrOP
                     ┌─────┴─────┐
                    DP        PredPfin
                  roðrinn    ┌───┴────┐
                           Spec     VPfin
                                ┌─────┴─────┐
                              Vfin       PredPmain
                             munum      ┌────┴─────┐
                                        P        VPmain
                                       vpp     ┌────┴────┐
                                            Vmain       PP
                                            gefa      ┌──┴──┐
                                                    t_{DP}   P'
                                                             │
                                                             P
                                                         t_{particle}
```

Third step: VPfin (remnant finite VP) moves to [Spec, FP]

```
                          FP
            ┌─────────────┴─────────────┐
         VPfin                        AgrOP
       ┌───┴────┐                 ┌─────┴─────┐
     Vfin   PredPmain           DP        PredPfin
    munum   ┌───┴───┐         roðrinn    ┌────┴────┐
            P     VPmain                Spec    t_{VPfin}
           vpp   ┌──┴───┐
              Vmain    PP
              gefa   ┌──┴──┐
                  t_{DP}   P'
                           │
                           P
                       t_{particle}
```
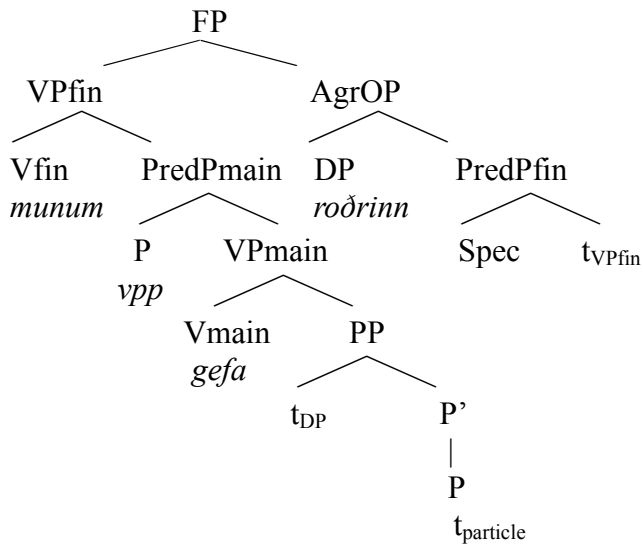
This derives the word order pattern [$V_{fin}$ - particle - $V_{main}$ - DP ].

## 6 Summary

Older Icelandic had various word order patterns with verb particles, including both pre- and postverbal particles. The most frequent patterns in the attested corpus show a preverbal particle and a postverbal direct object (45a), or a preverbal particle and a preverbal direct object (45b).

(45)  a.  hefði Grundar-Helga **upp** alið **þessa Ingigerði**  (Morð)
      *had Grundar-Helga up brought this Ingigerður*
      'Grundar-Helga had brought up this Ingigerður'

   b.  að þeir hefðu **þau** aldrei **út** gefið  (Morð)
      *that they had them never out given*
      'that they had never published them'

In the earliest texts, dating from the fourteenth century, preverbal particles are preferred over postverbal particles, although both pre- and postverbal particles co-exist in the corpus for several centuries.

In this paper, we have shown how a small clause analysis of verb particles, together with a remnant VP movement framework (Hróarsdóttir 2000) can account for the attested orders of verb particles in the history of Icelandic.

## Appendices

**Appendix A: Primary texts**

[Finn]. *Finnboga saga ramma*. Edited by Hugo Gering. Verlag der Buchhandlung des Waisenhauses, Halle, 1879. Heroic epic. Date of composition: 1330-1370.

[Guðm]. Saga Guðmundar Arasonar, Hóla-biskups, eptir Arngrím ábóta. *Biskupa sögur*. Second volume, pp. 1-220. Hið íslenzka bókmenntafélag, Copenhagen, 1878. Story of bishops. Date of composition: 1350-1365.

[Árn]. *Árna saga biskups*. Edited by Þorleifur Hauksson. Stofnun Árna Magnússonar in Iceland, Reykjavík, 1972. Story of bishops. Date of composition: 1375-1400.

[Dín]. *Dínus saga dramblláta*. Edited by Jónas Kristjánsson. Riddarasögur I. Háskóli Íslands,

Reykjavík, 1960. Chivalric romance. Date of composition: 1375-1400.

[Sig]. *Sigurðar saga þögla*. Edited by M. J. Driscoll. Stofnun Árna Magnússonar in Iceland, Reykjavík, 1992. Icelandic romance. Date of composition: early fifteenth century.

[Vikt]. *Viktors saga og Blávus*. Edited by Jónas Kristjánsson. Riddarasögur II. Handritastofnun Íslands, Reykjavík, 1964. Chivalric romance. Date of composition: ca. 1470.

[Afs]. *Morðbréfabæklingar Guðbrands biskups Þorlákssonar, 1592, 1595 og 1608, með fylgiskjölum*. Sögufélagið, ReykjavÌk, 1902-1906. Afsökunarbréf Jóns Sigmundssonar. Document/formal letter. Date of composition: 1502-1506. Transcript made by Bishop Guðbrandur Þorláksson, 1592.

[Morð]. *Morðbréfabæklingar Guðbrands biskups Þorlákssonar, 1592, 1595 og 1608, með fylgiskjölum*. Sögufélagið, Reykjavík, 1902-1906. Morðbréfa-bæklingar Guðbrands biskups. Document. Date of composition: 1592.

[Skál]. Sögu-þáttur um Skálholts biskupa fyrir og um siðaskiptin. *Biskupa sögur*. Second volume, pp. 235-265. Hið íslenzka bókmenntafélag, Copenhagen, 1878. Story of bishops. Date of composition: late seventeenth century.

[Árm]. *Ármanns rímur eftir Jón Guðmundsson lærða (1637) og Ármanns þáttur eftir Jón Þorláksson*, pp. 91-121. Edited by Jón Helgason. Íslenzk rit síðari alda, first volume. Hið íslenzka bókmenntafélag, Copenhagen, 1948. A short narrative story. Date of composition: late seventeenth century.

[Munn]. *Munnmælasögur 17. aldar*. Edited by Bjarni Einarsson. Íslenzk rit síðari alda, volume 6. Hið íslenzka fræðafélag í Kaupmannahöfn, Reykjavík, 1955. Folk tales, in oral tradition. Date of composition: 1686-1687.

[J.Ey.]. *Ferðasaga úr Borgarfirði vestur að Ísafjarðardjúpi sumarið 1709, ásamt lýsingu á Vatnsfjarðarstað og kirkju*. Eptir Jón Eyjólfsson í Ási í Melasveit. Blanda II. Fróðleikur gamall og nýr, pp. 225-239. Sögufélagið, Reykjavík, 1921-1923. Travelogue; a story from a journey. Date of composition: 1709.

[Bisk]. *Biskupasögur Jóns prófasts Haldórssonar í Hítardal*. Með viðbæti. Skálholtsbiskupar 1540-1801. Sögufélagið, Reykjavík, 1903-1910. Story of bishops. Date of composition: 1720-1730.

[Próf]. *Æfisaga Jóns prófasts Steingrímssonar eptir sjálfan hann*. Sögufélagið, Reykjavík, 1913-1916. Biography. Date of composition: 1785-1791.

[Álf]. *Íslenzkar þjóðsögur og ævintýri*. Nýtt safn. Volume VI, pp. 1-39. Collected by Jón Árnason. Edited by Árni Böðvarsson and Bjarni Vilhjálmsson. Bókaútgáfan Þjóðsaga,

Reykjavík, 1961. *Álfarit Ólafs í Purkey*. Folk tale, fairy tale. Date of composition: 1820-1830.

[Esp]. *Íslands Árbœkur í söguformi*. Af Jóni Espólín fyrrum Sýslumanni í Skagafjarðar Sýslu. Hið íslenzka bókmenntafélag, Copenhagen, 1843. Jón Espólín. Annual stories, in epical form. Date of composition: first half of the nineteenth century.


**Appendix B: Bibliographical information for the nineteenth century letters**

*Biskupinn í Görðum*. Sendibréf 1810-1853. Edited by Finnur Sigmundsson. Íslenzk sendibéf II. Bókfellsútgáfan, Reykjavík, 1959.

*Bjarni Thorarensen, Bréf*. First volume. Edited by Jón Helgason. Safn Fræðafélagsins um Ísland og Íslendinga XIII. Hið íslenzka Fræðafélag í Kaupmannahöfn, Copenhagen, 1943.

*Doktor Valtýr segir frá*. Úr bréfum Valtýs Guðmundssonar til móður sinnar og stjúpa 1878-1927. Edited by Finnur Sigmundsson. Íslenzk sendibréf V. Bókfellsútgáfan, Reykjavík, 1964.

*Frásögur um fornaldarleifar 1817-1823*. First volume. Edited by Sveinbjörn Rafnsson. Stofnun Árna Magnússonar, Reykjavík, 1983.

*Frásögur um fornaldarleifar 1817-1823*. Second volume. Edited by Sveinbjörn Rafnsson. Stofnun Árna Magnússonar, Reykjavík, 1983.

*Geir biskup góði í Vínarbréfum 1790-1823*. Edited by Finnur Sigmundsson. Íslenzk sendibréf VII. Bókfellsútgáfan, Reykjavík, 1966.

*Gömul Reykjavíkurbréf 1835-1899*. Edited by Finnur Sigmundsson. Íslenzk sendibréf VI. Bókfellsútgáfan, Reykjavík, 1965.

*Hafnarstúdentar skrifa heim*. Sendibréf 1825-1836 og 1878-1891. Edited by Finnur Sigmundsson. Íslenzk sendibréf IV. Bókfellsútgáfan, Reykjavík, 1963.

*Konur skrifa bréf*. Sendibréf 1797-1907. Edited by Finnur Sigmundsson. Íslenzk sendibréf III. Bókfellsútgáfan, Reykjavík, 1961.

*Magnús Stephensen, Brjef*. Edited by Hið íslenzka Fræðafélag í Kaupmannahöfn. Safn Fræðafélagsins um Ísland og Íslendinga IV. Copenhagen, 1924.

*Sendibréf frá íslenzkum konum 1784-1900*. Edited by Finnur Sigmundsson. Helgafell, Reykjavík, 1952.

*Skrifarinn á Stapa*. Sendibréf 1806-1877. Edited by Finnur Sigmundsson. Íslenzk sendibréf I. Bókfellsútgáfan, Reykjavík, 1957.

*Þeir segja margt í sendibréfum*. Edited by Finnur Sigmundsson. Bókaútgáfan Þjóðsaga,

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# Why we should ever bother about wh-questions[*]

## On the NPI-licensing properties of wh-questions in Swedish

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ABSTRACT

This paper is an attempt to solve the somewhat elusive polarity item licensing properties of wh-questions in Swedish. As has been observed by Klima (1964) for English, NPIs are generally not compatible with genuinely information seeking wh-questions, but tend to induce rhetorical interpretations. Distinguishing between three types of wh-questions and the kind of information they request, I will systematically review the syntactic, semantic and pragmatic properties of each wh-type. Based on that overview, I argue that NPI-licensing in wh-questions is dependent on the relation between the implication of existence associated with the wh-word and the presupposition induced by the expressed proposition. According to my analysis, wh-words should not be regarded as NPI-licensing operators. Being place-holders, wh-words inherit whatever properties are associated with the item they replace. The licensing property of the wh-word is thus dependent on the licensing property of the referent. Thus, only wh-words referring to downward entailing expressions will license NPIs in their scope (e.g. when pointing to an empty set). Such wh-questions tend to be interpreted rhetorically.

## 1.    Introduction

The primary aim of this paper is to elucidate the negative polarity item licensing properties of wh-questions in Swedish. As illustrated below, NPI-licensing wh-questions tend to be interpreted rhetorically, whereas NPI-licensing yes/no-questions may be feliticiously used in genuinely information seeking contexts. The problem, of course, is how to account for this difference:

(1)  a. **Vem** skulle *någonsin* vilja  åka till Paris?              (rhetorical)
         Who would      ever   want (to) go   to  Paris

      b. #**Vem** åkte *någonsin* till Paris?              (information seeking)
         Who went     ever       to  Paris

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(2)  a. Kommer man *någonsin* att  kunna lita på  banken  igen?  (rhetorical)
    Will  you   ever  INF be-able-to  trust  bank-the  again

  b. Har du *någonsin* varit  i Paris?       (information seeking)
    Have you  ever  been  to Paris

This observation is not new; as Klima (1964) noticed, so called 'strong' NPIs (e.g. *lift a finger*, *give a damn*) induce rhetorical interpretations of questions in English, and are consequently not compatible with genuine information-seeking questions, see (3) below. Weak NPIs (e.g. *any*, *ever*), on the other hand, may be licensed in information-seeking contexts, as in (4). The examples in (4) are taken from Guerzoni & Sharvit (2007:362).

(3)  a. **Who** *gives a damn* about bankers and their lost fortunes?
  b. ***Who* *will lift a finger*** to legislate for the voiceless and powerless?

(4)  a. **Who** cooked *anything*?
  b. **Who** was *ever* in Paris?

Swedish seems to differ from English in this respect, in that also weak NPIs induce rhetorical interpretations of wh-questions. But the generalization does not hold for all kinds of wh-questions; note that an NPI within the scope of *varför* ('why') and *hur* ('how') does not necessarily lend a rhetorical flavor to the question:

(5)  A: **Varför** skulle jag *någonsin* vilja göra det?
    Why  would  I  ever  want (to) do  that
  B: För att det är nyttigt
    Because  it  is  healthy

(6)  A: **Hur** kan jag *någonsin* gottgöra dig?[1]
    How can  I  ever  compensate you
  B: Köp mig en kopp kaffe!
    Buy  me  a cup (of) coffee

Admittedly, both (5) and (6) are strongly suggestive of a negative answer (e.g. *nothing could ever make me want to do that* and *I could do nothing to compensate you*, respectively). But importantly, these questions may be answered informatively, e.g. by explicating the reasons for doing a certain thing or suggesting how the addressee may be compensated – a fact that distinguishes (5)

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[1] Note also that this question may be paraphrased as a *yes/no*-question: *Kan jag någonsin gottgöra dig?* ('Can I ever make it up to you').

and (6) from (1) above. The interpretation of an NPI-licensing wh-question thus seems to be partly dependent on the semantic properties of the wh-word.

Taking this brief sketch as the outset, I will address and attempt to answer the following two questions in the remainder of this article:

- What are the licensing properties of wh-questions in Swedish?

- When and why does an NPI give rise to a rhetorical interpretation in Swedish wh-questions?

In order to answer the first question, the second question may provide a good starting point. In section 2, I will present a categorization of wh-questions based on the kind of information they request. For each clause type, I will relate its syntactic form to its pragmatic function and its semantic interpretation, thus getting a rather fine-grained classification of wh-questions in Swedish. This section paves way for the analysis in section 3, in which I try to dissect the NPI-relevant aspects of wh-questions. In short, my proposal builds on the wh-variable: getting its scope from its syntactic position, it will license NPIs whenever it points to a downward entailing expression, e.g. an empty set. This in turn explains why NPIs are not compatible with information seeking contexts. A short summary in section 4 concludes this article.

## 2. The Structural Properties of wh-questions in Swedish

Before being able to reach any kind of generalization on the NPI-licensing properties of wh-questions, it is substantial to distinguish between the various wh-words and the kind of information they request, especially considering the difference we noted above regarding *who* and *why*.

As Karttunen (1977:footnote 1) points out, the term *wh-questions* is in itself somewhat misleading; *search questions* would perhaps be a better term, "since semantically these questions involve a search for a suitable value for a variable". And crucially, different search questions request fundamentally different kinds of information. We may distinguish at least three distinct categories of search questions:

i)  argument questions: *vem* ('who'), *vad* ('what'), *vilken* ('which')
    Questions belonging to this category request the identification of an unspecified syntactic argument as selected for by the verb. Syntactically, this is information belonging to the V-domain.

ii)     framing questions:
      a) spatiotemporal questions: *när* ('when'), *var/vart* ('where')
      b) circumstantial questions: *hur* ('how')
      The function of these questions is to request specification of a spatio-temporal or circumstantial anchor to the event under discussion. Prototypically, this kind of information is not part of the core proposition, which is syntactically reflected by the fact that they take the form of adverbials, adjoined to the V- or I-domain.

iii)    propositional questions: *why*
      This class of wh-questions requests the specification of e.g. the reasons for, the consequences of or the explication of the expressed proposition. This is information that lies outside the structural domains of the sentence, meaning that it is extra-propositional, as it were.

Note that the categorization is based on the semantic properties of each kind, not the morphological correlates often associated with it. That is, the wh-word is not in itself important, since there may be various paraphrases filling the same function: *why* may be paraphrased with *for what reason*, but the expression still requests propositional information.

Furthermore, there is no 1-1 mapping between the wh-word and the classification. For example, prototypical 'argument' wh-words may request the explication of an event rather than an argument, as in (7a). And spatiotemporal wh-words may request specification of an argument as selected for by the verb, similar to argument wh-words (7b). Finally, *how* may be combined with adverbs e.g. requesting spatiotemporal information (7c). Thus, we must keep the semantic function of the question distinct from its syntactic and morphologic correlates.

(7)  a. Vad ska  du göra imorgon?
      What will you  do    tomorrow

    b. Var står din bil?
      where is  your car

    c. Hur länge har  du arbetat här?
      How  long  have you worked here

Following the classification above, I will in the next three subsections discuss each question type in turn, starting with argument wh-questions.

## 2.1 Argument wh-questions

As noted above, argument wh-questions prototypically request the identification of an argument as selected for by the verb. As is well known, wh-questions give rise to an existential implicature (see e.g. Karttunen 1977), i.e. an implicature to the effect that the set to which the wh-word refers is non-empty.

(8) a. **Who** bought that book?
>> someone bought that book

b. **What** did you buy?
>> you bought something

That the implication of existence is pragmatic rather than semantic in nature (i.e. an *implicature* rather than a *presupposition*) can be proven by the fact that an argument wh-question can be feliticiously answered in the negative:

(9) a. A: **Vem** träffade du igår?
Whom met you yesterday
'Whom did you meet yesterday?'

B: Ingen.
Nobody

b. A: **Vad** åt du till lunch igår?
What ate you for lunch yesterday
'What did you have for lunch yesterday?'

B: Ingenting.
Nothing

Interestingly, there is a distinct difference in Swedish between clefted and non-clefted wh-questions with regards to the implications of existence they give rise to. A clefted argument wh-question cannot be feliticiously answered in the negative, as the following examples show:

(10) a. A **Vem** var det som du åt lunch med igår?
Whom was it that you had lunch with yesterday

B: ??Ingen / Sven
Noone / Sven

b. A: **Vad** var det (som) du åt till lunch igår?
What was it that you ate for lunch yesterday

B: ??Ingenting / Ärtsoppa och pannkakor
Nothing / pea soup and pancakes

As these two examples suggest, clefted wh-questions *presuppose* rather than *im-plicate* existence. Put differently, we may suggest that the implication of exis-

tence in clefted wh-questions is semantic in nature (i.e. a presupposition), whereas the implication of existence in non-clefted wh-questions is pragmatic (i.e. a generalized conversational implicature).

Let me briefly outline a possible explanation to this difference between non-clefted and clefted argument wh-questions in Swedish. The implication of existence is closely linked to the truth of the proposition expressed by the question as a whole: if I had nothing for lunch, the proposition that I had something for lunch is false. In other words, denying the implication of existence amounts to denying the implication induced by the proposition as well. The same is of course true if the implication of existence is affirmed: if the set to which the wh- refers is non-empty, the proposition must be true. Trivially, if there is someone such that I had lunch with that someone yesterday, the proposition that I had lunch with someone is true.

For wh-questions, this logical relation between the implication of existence on the one hand and the truth of the proposition on the other can be reversed. That is, an implication to the effect that the proposition is true will inevitably lead to an implication of existence as well: if there is a strong implication to the effect that there is an event such that I met someone for lunch, there is also a strong implication to the effect that the wh-word must point to non-empty set. A trivial truth-table for argument wh-questions is listed below:

*Table 1: Truth-table for argument wh-questions*

| $p$ | | $q$ |
|---|---|---|
| 1 | $\leftrightarrow$ | 1 |
| 0 | $\leftrightarrow$ | 0 |

(Where $p$: presupposition of existence, and $q$: the proposition expressed by the wh-question)

In clefts, the proposition contained within the relative clause is standardly taken to be presupposed, as exemplified below:

(11)  Vem var det <u>som köpte bilen</u>?
     Who was   it    that  bought car-the
  >> Somebody bought the car

From the reversible logical relations of wh-questions as exemplified above, it follows that the set to which the wh-word refers in (11) is non-empty: presupposing the proposition that somebody bought a car commits us to an existential

presupposition as well. Thus, clefted questions cannot be feliticiously answered in the negative[2].

The truth of the proposition expressed by a non-clefted argument question, on the other hand, is not presupposed (although it may be pragmatically implicated). Consequently, no existential presupposition will arise either. Thus, answering a non-clefted wh-question in the negative is not contradictory, as B's answers in (9a) and (9b) show.

The kind of information clefted or non-clefted argument questions requests can be related to the different implications of existence each question type give rise to. A non-clefted argument wh-question, I would argue, requests *existential identification* of the argument denoted by the wh-word. Clefted argument wh-questions, on the other hand, request *referential specification* of the argument denoted by the wh-word. Another way of expressing this is saying that whereas the arguments requested by the non-clefted wh-words in (9a) and (9b) are neither existentially presupposed nor referentially specified, the arguments requested by the clefted wh-words in (10a) and (10b) are referentially unspecified but existentially presupposed.

It should be pointed out for non-Swedish speaking readers that cleft questions are abundant in Swedish, a fact often overlooked in the literature. Cleft-questions are preferred in any situation in which the identity, but crucially not the existence, is unspecified/unknown to the speaker. For example, if A wants to know who just called B (in a situation where A has overheard B's talking on the phone), this question would be formulated as a cleft rather than a standard wh-question, see (12a). For the same reason, if A points to an unknown person in the distance and wants to know who that person is, a cleft would be the natural choice, (12b). In both contexts, the existence of the argument denoted by the wh-word is non-negotiable, which is why a non-cleft (requesting existential identification) is less preferred[3]. Clefted wh-questions are thus intrinsically connected to a presupposition of existence.

(12)   a. Vem var det som ringde?
       Who was   it   that   called

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[2] Of course, the clefted sentence in (11) may be denied as well, but only by cancelling out the obvious presupposition: A: *Vem var det som köpte bilen*? ('Who was it that bought the car') B: *Du måste ha fått fel för dig, bilen är ännu inte såld*! ('You have gotten it all wrong, the car hasn't been sold yet!')

[3] Note the emphasis on choice and preference. A standard wh-question may of course be used in any context. This follows from the discussion above: in requesting existential identification one also requests the referential identification (identification being a subset of existence). Hence, it is infeliticious to ask only for the identity of a referent if its existence is unknown, i.e. posing a cleft-question in a presupposition-free context.

b. Vem är det som står där borta?
　　Who is　it　that　　is　over　there

If the difference between clefted and non-clefted wh-questions can be related to the presuppositions and implicatures they give rise to, we would predict argument wh-questions with existential verbs to behave similarly to clefts. That is, the lexical properties of the verb should induce an existential presupposition similar to the one found in clefts. This prediction is borne out. As illustrated below, existential wh-questions cannot be feliticiously denied, a fact that indicates that the implication of existence is presupposed rather than pragmatically implicated. Note also that existential wh-questions cannot be clefted in Swedish:

(13)　a. A: Vem är det?
　　　　　　　Who is that
　　　　B: #Ingen / Det är Lisa
　　　　　　　Nobody / it is Lisa
　　　b. *Vem är det som det är?

　　　　Who is it that it is

(14)　a. A: Vad är det?
　　　　　　what is　it
　　　　B: #Ingenting / Det är en avokado
　　　　　　　Nothing /　　it　is　an　avocado
　　　b. *Vad är det som det är?
　　　　What is　it　that　it is

As stated in the previous section, the proposed categorization of the different types of wh-questions is based on their semantic properties, not on the wh-word often associated with them. Thus, a prototypical 'argument' wh-word can be used for other purposes than requesting arguments; for example, *vad* ('what') is often used to request an event, as in (7a) above and (15) and (16) below. Interestingly though, such questions seem to behave similarly to argument questions: the non-clefted variety induces an existential implicature, whereas the clefted one induces a presupposition[4].

(15)　A: Vad　ska du göra imorgon?
　　　　　　What will you　do　tomorrow
　　　　　　'What are your plans for tomorrow?'

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[4] As Christer Platzack (p.c.) pointed out to me, there is a distinct difference also in the interpretation of the verb *göra* in the clefted and non-clefted question. *Göra* in clefted contexts seems to necessarily get main verb interpretation, as opposed to *göra* in non-clefts, which may be clearly supportive: A: *Vad ska du göra i helgen?* B: *Bara ta det lugnt* vs. A: *Vad är det du ska göra i helgen?* B: ??*Bara ta det lugnt*.

B: Ingenting / Jag ska åka till Paris
Nothing  /  I  will  go to Paris

(16)  A: Vad är det (som) du ska göra imorgon?
What is it    that you will do    tomorrow

B: #Ingenting / Jag ska åka till Paris
Nothing  /  I  will go  to  Paris

Some of these event-requesting *what*-questions do induce strong presuppositions, and perhaps it is for this reason they show a strong reluctance for being clefted. Pragmatically, these kinds of questions express surprise or deviations from the expected:

(17)  a. A: Vad gör du här?!                                    (surprised)
What do you here
'What are you doing here

B: #Ingenting[5] / Jag ville bara  kolla    en sak  / Jag är här på
semester
Nothing /      I wanted just (to) check something / I am here on vacation

b. A: ??Vad är det som du gör här?!                      (surprised)
What is    it   that you do here

It is to me not clear why the question in (17) behaves as it does, but it should be noted that it might be roughly paraphrased by a yes/no-question (*Är du här?* ('Are you here?')). This may suggest that the question in (17) is not necessarily an information-seeking question at all. But I will leave this area unexplored for the time being.

Summarizing this section on argument wh-questions in Swedish, I suggest that non-clefted wh-questions prototypically request *existential identification* of a wh-word whose existence is implied via a generalized conversational implicature. Clefted wh-questions, on the other hand, prototypically request *referential specification* of an argument whose existence is presupposed. Non-clefted wh-questions constructed with existential verbs behave similarly to clefts (although they cannot in themselves be clefted) in that they request *referential specification*.

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[5] Admittedly, this answer sounds very likely in certain contexts. But crucially, we have to distinguish between speaker-denial and presupposition-denial. If B answers "nothing" in a context where A has reason to believe that B was up to something, B's answer will likely be interpreted as "I did nothing suspicious", or something of that sort. This use of *nothing* is of course similar to saying "There's nothing happening nowadays", which is taken to mean "nothing interesting" rather than "nothing at all". Hence, it does not deny existence as such.

## 2.2 Framing wh-questions

Wh-questions introduced by framing wh-words come in two varieties: *spatio-temporal* and *circumstantial*. Note first that both types seem to presuppose rather than (pragmatically) implicate the truth of the expressed proposition, as the following examples illustrate:

(18) a. **When** did you move to New York?
>> you have moved to New York

b. **Where** did you buy that sweater?
>> you have bought that sweater

c. **How** can you afford your rent?
>> you can afford your rent

Let us first consider spatiotemporal wh-questions. Naturally, all events must be spatiotemporally anchored (in some way or another), which is reflected syntactically by the presence of finiteness features. As Platzack (1998:59) remarks: "Without this anchoring of the time line associated with the predication, no truth value can be determined, hence finiteness can be said to make a proposition out of a predication". From this it follows that even though the exact time and place of an expressed event (or state) may be underspecified in a given utterance, the existence of such a place and time is necessarily presupposed. In the terminology introduced above, requesting spatiotemporal information thus equals requesting *referential specification* of a certain time and/or place.

Consequently, non-clefted spatiotemporal questions are fundamentally different from non-clefted argument questions: the former request *referential specification*, the latter *existential identification*. This difference becomes evident when we consider negative answers to spatiotemporal questions, which inevitably lead to the cancellation of (the truth of) the proposition. Since spatiotemporal wh-words give rise to an existential presupposition, non-clefted spatiotemporal questions cannot be feliticiously answered in the negative, as opposed to non-clefted argument questions:

(19) A: **When** did John buy that book?
B: #Never
(20) A: **Where** did John buy that book?
B: #Nowhere

Crucially, clefted spatiotemporal wh-questions have a slightly different function from clefted argument questions. Because of the obvious redundancy of

clefting a presupposed question (the reason for clefting being to make it presuppositional), clefted spatiotemporal questions give rise to a conversational implicature: the requested information has previously been activated in the discourse, or should be regarded as common knowledge that for some reason or another is unavailable to the speaker at the time of utterance (often with the speaker being aware of this).

(21) A: **När** var det (som) Andra Världskriget bröt ut (nu igen)?
     When was it   that   second   world war-the broke out now again
   B: #Aldrig / Det vet väl alla?! / 1939
     Never / Everybody knows that! / 1939

(22) A: **Vart** var det (som) du var på semester (nu igen)?
     Where was it   that   you were on vacation  now again
   B: #Ingenstans / Det har jag sagt tusen gånger! / Israel
     Nowhere   / That have I told (you) (a) thousand times / Israel

The difference between clefted and non-clefted spatiotemporal questions thus seems to be related to information structure considerations: only spatiotemporal information known to the speaker to be discourse old or part of the common ground feliticiously licenses the clefted variety. This use should not be confused with requesting the referential specification of a presupposed time or place, since it rather requests being *reminded* of the referential specification.

Admittedly, clefted argument questions may have the exact same function, but often demand additional material, such as *nu igen* ('now again'), or *nu* ('now') to get this interpretation[6]

(23) A: **Vem** var det *nu* som var först på månen?
     Who was it now that was first on moon-the
     'Who was it again that first set foot on the moon?'
   B: Det borde du veta! / Neil Armstrong
     That ought you know / Neil Armstrong

(24) A: **Vad** var det (som) vi skulle ta med till nästa gång *nu igen*?
     What was it that we should bring for next time now again
   B: Har du redan glömt det?! / Papper och penna
     Have you already forgotten that / paper and (a) pencil

As noted in the introduction of this article, some spatiotemporal wh-words request the specification of syntactic arguments as selected for by the verb (i.e. information belonging to the V-domain), rather than adjoined material (belong-

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[6] This addition, I believe, is highly preferred, but not necessary for this interpretation. The same interpretative result may be achieved with extra stress on the copula: *Vem VAR det som var först på månen?* ('Who WAS it that first walked on the moon').

ing to the I-domain). Even then, these wh-questions induce an existential presupposition (probably because of the existential predicates these spatiotemporal wh-words are arguments to)[7]:

(25)  A: Var står din bil?
        Where is your car
      B: #Ingenstans / I garaget
          Nowhere /   in garage-the

Summarizing this section, I have argued that spatiotemporal questions always request referential specification, rather than existential identification. This is because all propositions must be spatiotemporally anchored, from which it follows that the existence of a time and place of a given event is presupposed. Clefted spatiotemporal questions give rise to a conversational implicature of reminding the speaker of a previously made referential specification.

## 2.3   Propositional wh-questions

Although *why*-questions presuppose the truth of the expressed proposition, they can be answered in the negative without cancelling the presupposition as such, as in (26) below.

(26)  A: **Varför** köpte  du den boken?
          Why   bought you that  book-the
        'Why did you buy that book'
      B: Ingen anledning / Därför att den verkade intressant
          No     reason    /  because   it    seemed interesting
        >> you bought that book

The possibility of wh-denial without denying the proposition distinguishes propositional wh-questions from framing wh-questions, which are presuppositional but non-cancellable. Intuitively, this is so because all propositions must be spatiotemporally anchored in some way or another, but there need to be no clear or obvious reason for the occurrence of an event[8]. Hence, denying the existential presupposition of a propositional wh-word does not equal denying the presupposition induced by the proposition expressed by the wh-question.

At the same time, propositional wh-questions can be distinguished from argument wh-questions, which are cancellable but non-presuppositional (as (9a),

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[7] As pointed out to me by Lars-Åke Henningsson (p.c.), the existential presupposition can also account for the awkwardness of negative existential questions: ??*Vad står inte där?* ('What is not there?') and ??*Vem bor inte där?* ('Who does not live there'). With emphasis on the negative particle, these questions improve considerably, but will have a rhetorical flavor.
[8] This claim is unrelated to the philosophical question of whether any event must have a reason or purpose.

(9b) above show). In the terminology introduced previously in this article, propositional wh-questions neither request existential identification nor referential specification but rather information that must be located outside the expressed proposition.

Clefted propositional questions function similarly to framing ones, however, in that they request re-activation of previously salient information. Thus, the reason for using clefted propositional questions seems again to be related to information structure considerations. As with framing cleft-questions, propositional cleft-questions cannot be feliticiously negated:

(27) A: **Varför** var det (som) du åkte till Israel (nu igen)?
      Why  was it  that you went to  Israel now again
    B: #Ingen anledning / Det har jag ju  sagt!       / För en konferens
      No reason     / that  have  I  PART told (you) said / for a conference

(28) A: **Hur** är det (som) man säger (nu igen)?
      How is it   that  you  say   now again
    B: Minns  du inte det? / Bättre fly  än      illa fäkta
      Remember you not   that /  better (to) run than (to) badly fence
   'Don't you remember?' / 'He who fights and run away lives to fight another day'

## 2.4   Summary

Having discussed three different types of wh-questions and their clefted and non-clefted varieties, we might finally summarize the syntactic, semantic and pragmatic properties connected to each of them. Table 2 provides an overview of the properties discussed:

*Table 2: Properties of wh-questions in Swedish*

| | NC-argument | C-argument | NC-frame | C-frame | NC-prop. | C-prop. |
|---|---|---|---|---|---|---|
| Existential identification | Yes | No | No | No | No | No |
| Referential specification | No | Yes | Yes | Yes | No | No |
| Re-activation of old info. | No | No[9] | No | Yes | No | Yes |
| Presupposition of existence | No | Yes | Yes | Yes | No | Yes |

(Key: NC = non-cleft, C = cleft, Rh = rhetorical)

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[9] Except with additional material, see examples (23) and (24) above.

## 3. NPI-licensing properties of wh-questions

Let us now return to the issue we first set out to discuss: the distribution of NPIs in wh-questions in Swedish. The first question that must be addressed is related to the property of the wh-word itself: is it an overt question operator licensing NPIs within its scope? Assuming an operator based approach has the obvious advantage of providing a generalized explanation for questions: the difference between yes/no-questions and wh-questions would then only be the absence/presence of a phonetically realized operator. This move appears theoretically satisfactory, but it is hardly empirically sufficient. The fact that most wh-words will not license NPIs in information-seeking contexts severely flaws an operator based approach:

(29) a. #**Vem** köpte *någonsin* boken
　　　　　who bought　ever　　book-the
　　b. #**Vad** ska du　*ens* göra idag?
　　　　　What will you even do　　today
　　c. #**När**　vill　du　*ens* träffas imorgon?
　　　　　When want you even　meet　tomorrow
　　d. #**Var** ställde du *någonsin* min nya bok?
　　　　　Where put　　you　ever　　　my　new　book

Since we do not want arbitrariness in the system, the distributional facts of (29) are problematic: if the operator were responsible for the licensing, we would not expect the ungrammaticality above (i.e. the operator should not be sensitive to semantic or pragmatic factors). In comparison, a strong anti-veridical operator like negation always licenses NPIs (even though it may of course give the utterance a slightly different meaning).

　　As touched upon earlier, not all wh-words behave in a similar manner; *why* and *how* may license NPIs without necessarily having a rhetorical flavor, as exemplified in (5) and (6) above, repeated here for convenience:

(30) a. **Varför** skulle jag *någonsin* vilja　göra det?
　　　　　Why　　would　I　　　ever　want (to) do　that
　　b. **Hur** kan jag *någonsin* gottgöra　dig?
　　　　　How can　I　　　ever　　compensate you

In the terminology introduced above, we might relate the licensing of polarity items to the function of question itself, i.e. the kind of information it requests: *existential identification* or *referential specification*. As mentioned several times already, the existential presupposition is closely linked to the presupposition induced by the proposition. Naturally, if the set of referents to which the wh-

word refers is empty, the proposition is false. And vice versa: if the proposition is false, then the set to which the wh-word refers is empty. This reversible relation was illustrated in table 1 above for argument wh-questions. Note that declarative sentences do not have the same semantic properties in this respect, since denying the proposition does not entail the non-existence of any of the arguments (be it a subject or object)[10].

Let us look more closely at two different questions: rhetorical questions and cleft-questions. If we start with the latter, it should be noted that cleft-questions do not license polarity items under any circumstances in Swedish:

(31)  a. *Vem var det som du *någonsin* åt lunch med?
          Who was  it  that you   ever    had lunch with
      b. *Vad var det som du *ens*  ville   fråga mig?
          What was  it   that you even wanted (to) ask  me
      c. *När var det (som) du *någonsin* var  i Paris?
          When was it    that you     ever   were in Paris
      d. *Vart var det (som) du *någonsin* åkte på semester?
          Where was it    that you     ever   went on vacation
      e. *Varför var det (som) du *någonsin* ville     åka till Paris?
          Why  was it   that  you    ever  wanted (to) go  to  Paris
      f. *Hur var det (som) man *ens* skulle börja göra detta?
          How was it   that   you even should  start  doing this

This distributional fact can be related to the reversible logical relations of questions. If the truth of the proposition is presupposed, the existence of the wh-argument is also presupposed. In other words, the wh-word points to a non-empty set. And this, I would argue, is precisely why polarity items cannot be licensed in clefts.

The non-occurrence of NPIs in clefts may thus provide us with a solution to the operator based approach above. Uncontroversially, wh-words can be regarded as 'dummy'-pronouns, i.e. place-holders with variable meanings. From that viewpoint, it follows that a wh-word in itself has very few semantic and syntactic properties. But it also follows that being a place-holder, it inherits whatever properties can be attributed to the item it replaces (i.e. its referent). This approach is inspired by the discussion on wh-questions in Jackendoff (1972:315), from which the following quote is taken[11]:

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[10] For example, *John didn't buy the book* does not equal the non-existence of John (or the book for that matter).

[11] Naturally, Jackendoff does not make the distinction explicated in this paper between *existential identification* and *referential specification*.

> The meaning of $C_{wh}$ is that the identification of a referent depends on the answer to the question. *Wh* occurs in a position closely parallel to negatives (*who, what, where, when, which* vs. *nobody, nothing, nowhere, never, no* and perhaps *whether* vs. *not*), so it is plausible that its scope is similar to that of negatives, i.e., all commanded material to the right in surface structure (...). Just as the scope of negation determines the negated part of the sentence, the scope of *wh* determines the questioned part of the sentence.

If we assume in accordance with Jackendoff that the wh-word scopes over everything to the right of it, then we may also assume that a wh-word referring to a downward-entailing expression should be able to license NPIs within its scope. That is, when the wh-word refers to an empty or non-specific set, NPI-licensing becomes possible[12]. Whenever the wh-word refers to specific members of a set (i.e. upward entailing expressions), however, NPIs cannot be licensed within its scope. This is why an information question like *Vem köpte någonsin boken*? ('Who bought ever the book') is just as bad as its answer *\*Sven köpte någonsin boken* ('Sven bought ever the book').

But more importantly, this is why NPI-licensing is incompatible with genuinely information seeking questions, as observed by Klima: only if the speaker already assumes the wh-word to refer to an empty set is an NPI licensed. For example, if it is (to the speaker's mind at least) highly unlikely that there exists someone who would spend 4 years working on polarity items in Swedish, then it is equally unlikely that the proposition that someone would spend four years on polarity items in Swedish is true. And in such a context, a polarity item is feliticiously licensed: *Who would ever spend four years working on NPI-licensing in Swedish?*. Crucially, this is why NPI-licensing wh-questions tend to be interpreted rhetorically. The very function of rhetorical questions is to request information without expecting any, or – in our newly introduced terminology – request referential specification while presupposing non-existence. Following this line of reasoning, it follows that NPIs do not in themselves add a rhetorical flavor to wh-questions. But they can only be licensed whenever the wh-word points to a downward entailing expression. Hence – since questions introduced by such wh-words tend to be interpreted rhetorically – NPI-licensing and rhetorical interpretations are often associated. But crucially, rhetorical interpretations may be achieved independently of the presence/absence of an NPI[13] – and NPI-licensing may take place in non-rhetorical contexts.

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[12] The same is true for personal pronouns, whose (non)specific reference is dependent on the item they replace. Note for example that *dom* ('they') in Swedish can only get a non-specific reading when licensing NPIs: *Personer/dom som* någonsin *varit i Paris vet vad jag talar om* ('People/those who have ever been to Paris know what I'm talking about').

[13] This claim can be independently corroborated by the fact that NPIs are not necessary for a rhetorical intpretation: *VEM skulle göra något sådant?* ('WHO would do such a thing')

Based on the arguments explicated above, we might reach a quite intuitive understanding of why propositional wh-questions may license NPIs without being rhetorical. The reversible logical relations (i.e. between the presupposition of existence and the presupposition of the truth of the proposition) do not work for these kinds of questions. The truth table for non-clefted propositional wh-questions is presented below.

*Table 3: Truth-table for propositional wh-questions*

| $p$ | | $q$ |
|---|---|---|
| 1 | $\rightarrow$ | 1 |
| 1 | $\nleftarrow$ | 1 |
| 0 | $\leftarrow$ | 0 |
| 0 | $\nrightarrow$ | 0 |

(Where $p$: presupposition of existence, and $q$: the proposition expressed by the wh-question)

As illustrated in this table, the logical relations are not reversible for propositional wh-questions. A presupposition of existence is linked to the truth of the presupposed proposition (i.e. if $p = 1 \rightarrow q = 1$). That is, if there is an obvious reason or motivation for an event, the event must be presupposed. But crucially, if there is no (obvious) reason or motivation for a certain event, it does not necessarily follow that there is no event taking place (i.e. if $p = 0 \nrightarrow q = 0$).

Moreover, presupposing the truth of the proposition does not equal presupposing the existence of a reason corresponding to the wh-argument either: an event can take place without any obvious reason or motivation (i.e. if $q = 1 \nrightarrow p = 1$). The existential presupposition, however, cannot arise without a true proposition; if there is no event, there cannot be a reason or motivation for that event (i.e. if $q = 0 \rightarrow p = 0$.)

NPI-licensing propositional wh-questions are thus compatible with genuine information seeking contexts, since the information requested is independent from the propositional content. That is, the wh-word may point to an empty set without affecting the truth of the proposition. Consequently, the wh-word (pointing to a downward entailing expression) may license NPIs inside a presupposed proposition – which in turn explains why NPI-licensing propositional wh-questions may still be interpreted as requesting information. And the heavy but not necessary bias towards a negative answer can be attributed to the empty set the wh-word refers to.

The information requested in argument and framing wh-questions, on the other hand, is always closely linked to the proposition expressed, either as being

arguments belonging to the VP or the IP. Hence, the wh-word cannot point to an empty set without at the same time affecting the presupposition of the truth of the proposition. The truth-conditions for argument and framing wh-questions is given below (a repetition of table 1 above):

*Table 4: Truth-table for argument and framing wh-questions*

| $p$ | | $q$ |
|---|---|---|
| 1 | $\leftrightarrow$ | 1 |
| 0 | $\leftrightarrow$ | 0 |

(Where $p$: presupposition of existence, and $q$: the proposition expressed by the wh-question)

According to my proposal, NPIs are licensed only when the wh-word refers to a downward entailing expression. The only possibility for an NPI to be licensed in argument and framing wh-questions thus occurs when the wh-word refers to an empty or non-specific set – in which case there is no presupposition of an event either. Consequently, the only interpretation of an NPI-licensing argument and framing wh-question is rhetorical, since a rhetorical question requests referential specification while presupposing non-existence.

     Finally, just a few words on the importance of tense. Because of the reversible logical relations of argument and framing wh-questions, the existence of an event equals the existence of a wh-referent and vice versa. And this explains why rhetorical questions are less easily accessible in the present and simple past tense, but very easily acceptable in the future tense and hypothetical past tense. Naturally, the non-existence of a wh-referent is more easily achieved with events belonging to the future or the hypothetical past than to the present or perfective past.

(32)  a. #När åker jag *någonsin* till Paris?
       When go   I    ever    to  Paris
    b. #När åkte jag *någonsin* till Paris?¨
      When went I    ever     to  Paris
    c. När skulle jag *någonsin* åka till Paris?
      When would I    ever     go  to  Paris
    d. När  ska jag *någonsin* åka till Paris?
      When will  I    ever    go  to  Paris

Summarizing this section, I have argued that wh-words are not inherently licensing operators from a syntactic point of view; this move away from syntax might explain the seemingly arbitrary licensing properties illustrated in (29) above. Rather, wh-words inherit their licensing properties from the expressions

they refer to. This means that syntax only determines the scope of the wh-word, not the licensing properties of it. But in order to defend such a claim, it is important to distinguish between the different roles of semantics and pragmatics. Semantic considerations are clearly important for the non NPI-licensing properties of clefts, since the presupposed status of the proposition expressed within the relative clause gives rise to the existential presupposition of the wh-word. But it seems to me that the non-existence of a referent can never be semantically presupposed, but rather pragmatically (or contextually) implicated. That is, NPIs in wh-questions are semantically blocked but pragmatically licensed. However, my claims need further support and looking into before any language universal implications can be drawn from them.

## 4.    Summary

The focus of this article has been the NPI-licensing properties of wh-questions in Swedish. In order to pinpoint the elusive licensing properties observed in both Swedish and English, I divided wh-questions into three distinct categories: *argument*, *framing* and *propositional* wh-questions. The three groups behave distinctly different with regards to what kind of information they request and how the proposition expressed is semantically related to the wh-word. Argument wh-questions are distinct from the other two groups, in that they request *existential identification*: this is because non-clefted argument questions give rise to an existential *implicature* which can be cancelled by a negative answer.

Framing wh-questions induce an existential presupposition; thus the function of such questions is to request the *referential specification* of the argument denoted by the wh-word rather than the *existential identification*. Clefts, a common way of expressing questions in Swedish, are inherently presupposing environments. But the interpretation of the cleft is also dependent on the wh-word: clefted argument wh-questions request referential specification, whereas clefted framing and propositional wh-questions have a pragmatic function of requesting reactivation of information.

From my viewpoint, wh-words are not syntactically NPI-licensing operators; rather the licensing properties of the wh-word are dependent on the properties of the referent. Since wh-words are place-holders, they inherit whatever properties are associated with the item they replace.

The information requested in argument and framing wh-questions is always closely linked to the proposition expressed: if the wh-word properly refers to a non-empty set, the proposition is by necessity true, whereas if the proposition is false, the wh-word must necessarily refer to an empty set. Since according to my

view NPIs are licensed by the properties of the wh-referent, this explains why NPIs are not compatible with information seeking questions: only when the wh emptily refers is an NPI properly licensed.

Propositional wh-questions do not adhere to these reversible logical relations between the existential proposition and the truth of the proposition. Hence, NPIs may be licensed also in information seeking contexts. This is intuitively understood from the fact that propositional wh-words request information independent from the expressed proposition.

The view on wh-questions advocated here depends heavily on the interaction between syntax, semantics and pragmatics. Such an approach, I believe, should be seen as advantageous rather than theoretically unsatisfactorily, since – in the words of Jackendoff (1972:320) – an interplay approach to language "can reveal generalizations that could not have been dreamed of within a purely syntactic approach".

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# Liberalizing modals and floating clause boundaries[*]

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**Abstract.** In this paper, the distribution of modals in Icelandic *that*-clauses is explored. It will be shown that the presence of certain modals overturns restrictions on root transformations and extraction. Based on this finding, the paper makes two claims: (i) the size of the left periphery is constant irrespective of selectional properties of matrix verbs, and (ii) the observed differences between root and non-root environments arise from a difference in how much of the left periphery of the complement clause is part of the matrix predicate itself. The presence of modals decreases the amount of structure available to the matrix verb.

## 1    Introduction

In this paper, the distribution of modals in Icelandic *that*-clauses will be explored. We will see that the presence of certain modals overturns restrictions on root transformations and availability of extraction in specific environments. More precisely, some modals overturn:

(i)    *restrictions on embedded V2*
(ii)    *ban on extraction from islands*

I will present data that demonstrate in which way modals affect non-root environments. In terms of a syntactic analysis, I make two claims concerning the selectional properties of matrix verbs. Unlike previous analyses, e.g. Haegeman (2006) and Hrafnbjargarson et al. (2007), where it is argued that embedded clauses differ with respect to the amount of projections present in the left periphery, I follow e.g. Haegeman (2007) by assuming that the size of the left periphery is constant. In contrast to Haegeman (2007), however, I

will not argue in favor of an analysis of covert operator movement. Instead, I will argue that the observed differences between root and non-root environments may be deduced from differences in how much of the left periphery of the complement clause is employed, or "taken over", by the matrix verb. As will become clear, the idea is that matrix predicates that do not allow root phenomena such as non-subject initial V2 in their complements employ parts of the embedded left periphery to spell out parts of their meaning. Predicates that allow root phenomena do not.

## 2    Background: Embedded V2

According to standard assumptions about the Scandinavian languages, Mainland Scandinavian (i.e. Danish, Norwegian, and Swedish) and Faroese display limited embedded V2 in the sense that both subject-initial and non-subject initial V2 is restricted to the complements of so-called *bridge verbs* (e.g. Vikner 1995). Unlike these languages, Icelandic has been claimed to always allow embedded V2, also in the complements of non-assertive and factive predicates (e.g. Magnússon 1990, Rögnvaldsson and Thráinsson 1990, Vikner 1995).

(1)  a. *Jon  tvivlar på  att  i morgon  vaknar Maria  tidigt.
        *John  doubts*      *that tomorrow  wakes  Mary   early*
     b. *Jon  ångrar     att  den här boken    har   han   läst.
        *John  regrets*      *that this here book    has   he    read*

(2)  a. Jón   efast um  að  á morgun  fari   María  snemma á fætur.
        *John  doubts*     *that tomorrow  get    Mary   early     up*
     b. Jón   harmar     að  þessa bók  skuli  ég     hafa lesið.
        *John  regrets*     *that this book  shall  I      have read*

A closer investigation reveals that none of the Scandinavian languages display generalized embedded V2 in the sense that both subject-initial and non-subject-topicalization are possible across the relevant environments.

Wiklund et al. (2008) study embedded V2 in Faroese, Icelandic, Norwegian, and Swedish. Their investigation shows that Faroese and Icelandic (or at least varieties of these languages) are subject to the same

restrictions on V2 word order as the other Scandinavian languages. Wiklund et al. test at least two predicates from the five predicate classes in Hooper and Thompson (1973), Class A (strongly assertive predicates – *say*), Class B (weakly assertive predicates – *believe*), Class C (non-assertive predicates – *doubt*), Class D (factive predicates – *regret*), and Class E (semi-factive predicates – *discover*), see Table 1.[1] A brief description of each class will be given in the next section.

Table 1: *Predicate classes*

| Class A | Class B | Class C | Class D | Class E |
|---------|---------|---------|--------------|------------|
| *say* | *believe* | *doubt* | *regret* | *discover* |
| *Claim* | *think* | *deny* | *be sad about* | *understand* |

With respect to the possibility of subject-initial and non-subject initial V2, Class A, B, and E pattern alike; in the complements of these predicates, both V2 word orders are unrestricted. This is illustrated by a Class A predicate from Swedish in (3), and for Icelandic in (4).

(3) a. Han sa att han **kunde inte** sjunga på bröllopet.
      *he said that he could not sing on wedding-the*
    b. Han sa att **den här sången** kunde han sjunga på bröllopet.
      *he said that this here song-the could he sing on wedding-the*

(4) a. Hann sagði að hann **gæti ekki** sungið í brúðkaupinu.
      *he said that he could not sung in wedding-the*
    b. Hann sagði að **þetta lag** gæti hann ekki sungið í brúðkaupinu.
      *he said that this song could he not sung in wedding-the*

Class C predicates behave differently depending on language. Neither of the two V2 word orders (V>Neg or non-subject initial V2) are allowed in the complements of Class C predicates in Norwegian and Swedish, whereas only

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[1] For Icelandic, additional predicates from all classes were tested, see Wiklund et al. (2008: §4).

non-subject initial V2 is restricted under such predicates in Icelandic and Faroese.[2] This is illustrated for Swedish in (5) and for Icelandic in (6).

(5)  a. *Han tvivlar på att   hon **har inte** träffat den här mannen.
         *he    doubts on that she has not   met    this here man-the*
     b. *Han tvivlar på att  **den här mannen**  har hon inte träffat.
         *he    doubts on  that this here man-the  has  she not  met*

(6)  a. Hann efast  um   að   hún **hafi ekki** hitt þennan mann.
        *he    doubts about that she has  not   met this man*
     b. *Hann efast  um   að  **þennan mann** hafi hún ekki hitt.
        *he    doubts about that this man       has she not  met*

Complements of factive predicates (Class D) pattern with complements of non-assertive predicates (Class C). In Faroese and Icelandic, only non-subject initial V2 is restricted in the complements of these predicates, whereas both V2 word orders are restricted in Norwegian and Swedish. This is illustrated for Swedish in (7) and for Icelandic in (8). Table 2 summarizes the findings of Wiklund (2008).

(7)  a. *Han ångrade   att   han **hade inte** sjungit.
        *he    regretted that he   had  not    sung*
     b. *Han ångrade  att  **den här sången**  hade han inte sjungit.
        *he    regretted that this here song-the had  he   not sung*

(8)  a. Hann sá eftir    að   hann **hafði ekki** sungið.
        *he    regretted that he    had   not   sung*
     b. *Hann sá eftir   að  **þetta lag** hafði hann ekki sungið.
        *he    regretted that this song had   he    not  sung*

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[2] Whether subject-initial embedded clauses display V2 or V-to-I/T movement has been debated for over a decade without any results. Such a debate lies outside the scope of the present paper and the analysis I present does not hinge on either of the two alternative analyses. Nevertheless, I follow Wiklund et al. (2008) in their assumption that the word order V > Neg in embedded clauses indicates movement of the verb to the C system instead of the I system, or in other words,  subject-initial V2 instead of V-to-I movement. For a more detailed discussion and arguments in favor of this view, see Hrafnbjargarson et al. (2007), Hróarsdóttir et al. (2007), Wiklund et al (2007), and Wiklund et al. (2008).

Table 2: *The distribution of embedded V2*

|  |  | Swedish | Norwegian | Faroese | Icelandic |
|---|---|---|---|---|---|
| Class A/B/E | V>Neg | √ | √ | √ | √ |
|  | Top | √ | √ | √ | √ |
| Class C/D | V>Neg | * | * | √ | √ |
|  | Top | * | * | * | * |

As Wiklund et al. (2008) point out, the above pattern is quite different from the pattern reported in e.g. Magnússon (1990) Rögnvaldsson and Thráinsson (1990), Vikner (1995), and subsequent work on Icelandic, where it is claimed that Icelandic displays non-subject initial V2 across the board. We show that the verb used to demonstrate this property of Icelandic (i.e. *harma* 'regret') differs from the Mainland Scandinavian counterparts (No. *angre*/ Sw. *ångra*) with regard to presuppositional properties.[3] Apart from this, Wiklund et al. clearly demonstrate that there exists a variant of Icelandic where non-subject initial V2 is restricted to root environments: For the majority of our informants, non-subject topicalization is restricted in the complements of Class C and D predicates. For the same speakers, non-subject topicalization is not restricted in the complements of Class A, B, and E predicates.

Wiklund et al. (2008) conducted two tests on the possibility of V2 word orders in embedded clauses in Icelandic. In the first test, the effect of modals was not controlled for and we observed that some of the informants that were generally skeptical towards embedded topicalization had a tendency to add modals (either *munu* 'will' or *skulu* 'shall') to the example sentences in an attempt to make them grammatical.[4] It is this observation that prompted the present investigation. In a second test, three (of totally thirty)

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[3] There are two notable differences between Swedish *ångra* 'regret' and Icelandic *harma* 'regret'. First, Icelandic *harma*, but not Swedish *ångra* may be used to regret something someone else has done, cf. (1b) and (2b). Second, the content of clauses embedded under *harma*, but not *ångra* may be new information to the addressee, indicating a weaker kind of presupposition, see Wiklund et al. (2008) for further discussion.

[4] Wiklund et al. (2008) consulted six informants, all of whom are linguists with Icelandic as their mother tongue. Admittedly, some of the informants had the reverse tendency, viz. removing modals from test sentences or grading sentences with modals equal to sentences without modals. Given this, it is clear that there is variation with respect to the effect of modals on embedded topicalization. The variant displaying the reverse tendency will not be discussed in the present paper.

test sentences contain modals, two of which may be contrasted with test sentences without modals. Both cases involve a Class D predicate, *sjá eftir* 'regret' and *skammast sín* 'be ashamed', respectively, and the modal *skulu* 'shall'. The examples in (9) and (10) are slightly modified versions of the test sentences used by Wiklund et al.

(9)  a. *Hún   sá eftir því   að   þessar bækur hefði   hún  lesið.
         *she      regretted      that these books   had       she  read*
     b. ?Hún   sá eftir því   að   þessar bækur skyldi  hún  hafa  lesið.
         *she      regretted      that these books   should she  have  read*

(10) a. *Hún skammaðist  sín     fyrir að   þessa bók hafði   hún ekki lesið enn.
         *she   was.ashamed SELF for    that this book   had      she  not   read yet*
     b. ?Hún skammaðist  sín     fyrir að   þessa bók skyldi hún hafa lesið.
         *she   was.ashamed SELF for    that this book   should she  have read*

Given that there are only two minimal pairs, we can only interpret the results as an indication of what is going on: It seems as if the presence of modals cancels the restrictions on non-subject topicalization in the complements of Class D predicates. A natural question to ask at this point is whether this is also the case in the complements of Class C predicates, which according to Wiklund et al. pattern with Class D predicates regarding restrictions on non-subject topicalization in Icelandic. At first sight, this seems to be the case. Topicalization is less marked in clauses embedded under Class C predicates if the embedded clause contains a modal, cf. (11a), which does not contain a modal, vs. (11b), which contains the modal *munu* 'will'.

(11) a. *Hún efast um að   þessar bækur hafi  börnin          nokkurn tíma lesið.
         *she   doubts   that these books   have children-the ever               read*
     b. ?Hún efast um að   þessar bækur muni börnin          nokkurn tíma lesa.
         *she   doubts   that these books   will  children-the ever               read*

As we will see, there are still differences to be found between Class C and D predicates as to which modals may occur in their complements. In the remaining parts of the present paper, judgments are based on my own intuitions about Icelandic. In cases where I have been in doubt, I have

consulted at least two additional speakers of Icelandic.[5] In the next sections. I show that modals have an effect on non-root environments and islandhood of embedded clauses in Icelandic.

## 3      Modals and embedded topicalization

Icelandic has twelve modals, most of which may occur with a root or a non-root sense, see Table 3. The table is based on Eide (2005: 84–85), who in turn cites Thráinsson and Vikner (1995). As we will see, the availability of modals in the complements of Class C and D predicates seems to be dependent on what kind of complements the modal selects. Modals that select bare infinitives occur more easily in the complements of these predicates as opposed to modals that select infinitival complements introduced by the infinitive marker *að*. Therefore, I have reordered the modals alphabetically according to the type of complement they select. Note that I have also added the infinitive marker *að* to the modals that require it.

Table 3: *Icelandic modals*

| *Modal* | *Gloss* | *Root sense* | *Non-root sense* |
|---|---|---|---|
| *mega* | 'may' | deontic | epistemic |
| *munu* | 'will' | ? | epistemic (future?) |
| *skulu* | 'shall' | deontic | evidential |
| *vilja* | 'will' | dynamic | tendency |
| *geta* | 'can' | dynamic | epistemic |
| *eiga að* | 'ought to' | deontic | epistemic |
| *fá að* | 'be allowed to' | deontic | ? |
| *hljóta að* | 'must' | deontic | epistemic |
| *kunna að* | 'can/may' | dynamic, deontic | epistemic |
| *verða að* | 'must' | deontic | evidential, epistemic |
| *þurfa að* | 'need' | dynamic | ? |
| *ætla að* | 'intend' | dynamic | evidential? |

As I have mentioned, not all modals may occur in all types of *that*-clauses in Icelandic. The test in the following sections is therefore twofold. We have to

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[5] The two speakers I consulted are both women, approx. age 45 and 65. Both come from Northeast Iceland, as I do too. Both have lived in Reykjavík for a long time.

find out which of the modals may occur in *that*-clauses in the first place (which will be tested in subject-initial V2 clauses). We also have to find out which of the modals enable non-subject topicalization in non-root contexts. Again, we will be concerned with the predicate classes listed in the above Table 1. We have already seen that non-subject topicalization is restricted in the complements of Class C and D predicates. Nevertheless, I include (ungrammatical) examples of non-subject topicalization in the complements of these classes below, to make the contrast between clauses with and without modals clearer. The below test will be applied on both subject-initiial as well as non-subject initial embedded clauses for each class in turn. The test is illustrated by four examples: The (a)-examples involve the perfect auxiliary *hafa* 'have' instead of a modal. The (b)-examples involve the modals that select bare infinitives. The (c)-example involves the modal geta 'can', which selects a participle. The (d)-example involves the modals that select infinitival complements introduced by the infinitive marker *að*.

(12) a. [$_{Matrix}$ XP V$_{Matrix}$ [$_{Embedded}$ that XP **Auxiliary**$_{perfect}$ V$_{participle}$ ... ]

　　 b. [$_{Matrix}$ XP V$_{Matrix}$ [$_{Embedded}$ that XP **Auxiliary**$_{modal}$ V$_{infinitive}$ ... ]

　　 c. [$_{Matrix}$ XP V$_{Matrix}$ [$_{Embedded}$ that XP **Auxiliary**$_{modal}$ V$_{participle}$ ... ]

　　 d. [$_{Matrix}$ XP V$_{Matrix}$ [$_{Embedded}$ that XP **Auxiliary**$_{modal}$ *að* V$_{infinitive}$ ... ]


*3.1　Class A: Strongly assertive predicates*

Class A predicates embed complements that are cited or reported assertions in the discourse (*indirect assertions* in Hooper and Thompson 1973). These are compatible with root phenomena such as V2 and they allow epistemic modality. The examples in \Next show compatibility of modals with subject-initial V2 clause embedded under the verb *segja* 'say'.

(13) Hún sagði að ...
　　 *she said that*
　　 a. nemendurnir hefðu lesið þessar bækur fyrir prófið.
　　　 *students-the had read these books for exam-the*
　　 b. nemendurnir myndu/ mættu/ skyldu/ vildu lesa þessar bækur fyrir prófið.
　　　 *students-the would may should would read these books for exam-the*

c. nemendurnir  gætu    lesið þessar bækur  fyrir  prófið.
*students-the   could   read these books   for   exam-the*

d. nemendurnir ættu / fengju /         kynnu / hlytu / þyrftu / ætluðu /
*students-the  ought  were.allowed.to may     must   needed intended*
yrðu   að   lesa  þessar bækur fyrir prófið.
*must  to   read these books   for   exam-the*

As can be seen from the examples, all of the modals may occur in subject-initial V2 complements of Class A predicates. Depending on context, each of the modals may occur in a root or a non-root sense. The same holds for non-subject initial V2 complements:

(14) Hún  sagði  að    ...
*she   said   that*
a. þessar bækur hefðu nemendurnir  lesið fyrir prófið.
*these books   had   students-the  read for   exam-the*

b. þessar bækur myndu/mættu / skyldu / vildu  nemendurnir lesa  fyrir prófið.
*these books   would  may    should  would students-the  read for   exam-the*

c. þessar bækur   gætu  nemendurnir lesið  fyrir   prófið.
*these books     could students-the read  for     exam-the*

d. þessar bækur ættu / fengju    /      kynnu / hlytu /þyrftu /ætluðu  /
*these books ought   were.allowed.to may     must   needed intended*
yrðu  nemendurnir að  lesa fyrir  prófið.
*must students-the  to  read for   exam-the*

## 3.2    Class B: Weakly assertive predicates

Class B predicates, like Class A predicates, embed assertions. Class B predicates indicate a weaker commitment to the truth of the embedded statement on behalf of the speaker. Complements of Class B predicates have also been shown to be compatible with V2 and they allow epistemic modality. The examples in (15) show compatibility of modals with subject-initial V2 clause embedded under the verb *halda* 'believe'.

(15) Hún hélt       að    …
     *she  believed  that*
  a. nemendurnir  hefðu  lesið  þessar bækur fyrir   prófið.
     *students-the  had    read  these books  for    exam-the*
  b. nemendurnir   myndu  / mættu  /  skyldu   /  vildu
     *students-the  would   may       should      would*
     lesa   þessar bækur   fyrir prófið.
     *read   these books    for  exam-the*
  c. nemendurnir  gætu  lesið  þessar bækur  fyrir  prófið.
     *students-the  could read  these books    for    exam-the*
  d. nemendurnir  ættu  / fengju    /         kynnu / hlytu / þyrftu / ætluðu/
     *students-the  ought were.allowed.to  may      must   needed intended*
     yrðu  að  lesa þessar bækur fyrir  prófið.
     *must  to  read these books  for    exam-the*

In the same way as modals may occur in the complements of Class A predicates, they are compatible with the complements of Class B predicates. The same holds for non-subject initial V2 clauses embedded under Class B predicates:

(16) Hún hélt       að    …
     *she  believed  that*
  a. þessar bækur hefðu   nemendurnir lesið  fyrir  prófið.
     *these books   had     students-the  read  for    exam-the*
  b. þessar bækur myndu / mættu /skyldu  / vildu   nemendurnir lesa fyrir prófið.
     *these books   would   may     should would students-the read for  exam-the*
  c. þessar bækur  gætu nemendurnir lesið  fyrir  prófið.
     *these books    could students-the  read  for    exam-the*
  a. þessar bækur ættu  / fengju    /        kynnu / hlytu /þyrftu / ætluðu /
     *these books   ought were.allowed.to  may      must   needed intended*
     yrðu  nemendurnir  að lesa  fyrir  prófið.
     *must  students-the    to  read for    exam-the*

*3.3 Class C: Non-assertive predicates*

Complements of Class C predicates are neither asserted nor presupposed. The examples in (17) illustrate the compatibility of modals with subject-initial V2 clauses embedded under the verb *efast* 'doubt'.

(17) Hún   efaðist um   að   ...
     *she   doubted     that*
  a. nemendurnir hefðu   lesið  þessar bækur fyrir  prófið.
     *students-the had     read these books for    exam-the*
  b. nemendurnir   myndu  / mættu /  skyldu  /  vildu
     *students-the   would    may       should     would*
     lesa   þessar bækur   fyrir prófið.
     *read   these books    for  exam-the*
  c. nemendurnir gætu  lesið þessar bækur fyrir  prófið.
     *students-the  could read these books   for    exam-the*
  d. nemendurnir ættu  / fengju  /        kynnu  / *hlytu / þyrftu / ætluðu/
     *students-the ought were.allowed.to may       must    needed intended*
     yrðu  að  lesa þessar bækur fyrir  prófið.
     *must  to  read these books  for    exam-the*

The only modal that is not possible in the above context is the modal *hljóta* 'must'.

     As was mentioned above, non-subject topicalization is restricted in the complements of many Class C predicates in varieties of Icelandic, see Wiklund et al. (2008). In my variety, *efast* 'doubt' is one of the verbs that do not allow topicalization in the embedded clause. The effect of inserting a modal is illustrated below:

(18) Hún   efaðist um   að   ...
     *she   doubted     that*
  a. *þessar bækur  hefðu  nemendurnir lesið  fyrir  prófið.
     *these books       had    students-the read for    exam-the*
  b. þessar bækur   myndu  / mættu   / ?skyldu / *vildu nemendurnir lesa
     *these books   would    may       should    would students-the read*
     fyrir  prófið.
     *for    exam-the*

c. þessar bækur   gætu   nemendurnir  lesið  fyrir   prófið.
   *these books      could students-the   read  for      exam-the*
d. þessar bækur ?ættu   / ?fengju        /      *kynnu / *hlytu / ?þyrftu /
   *these books   ought     were.allowed.to   may       must      needed*
   *ætluðu / ?yrðu nemendurnir að  lesa  fyrir prófíð.
   *intended   must  students-the  to   read for    exam-the*

Example (18a) shows that non-subject topicalization is ungrammatical, under normal circumstances, in a clause embedded under the Class C predicate *efast* 'doubt', i.e. when the embedded clause does not contain a modal. Examples (18b–d) show that non-subject topicalization is much less marked if the embedded clause contains a modal. However, not all modals are able to reverse the restriction on non-subject topicalization under Class C predicates. Noteworthy, modals that select bare infinitives and participles seem better than modals that select infinitival complements introduced by the infinitive marker *að* in this context, cf. (18b and c) with (18d). The pattern we have seen with Class C predicates is further strengthened by the pattern found with Class D predicates.


*3.4    Class D: Factive predicates*
Class D predicates embed facts. They express some emotion or subjective attitude about an event, the existence of which is presupposed. Root phenomena are normally not possible in the complements of these verbs. The examples in (19) illustrate the possibility of modals in subject-initial clauses embedded under the predicate *vera ánægður með* 'be content with'.

(19) Henni  þótti leitt  að    ...
     *her      regretted that*
  a. hún  hafði ekki lesið  þessar bækur.
     *she  had   not  read   these books*
  b. hún  myndi  / mátti / skyldi / vildi   ekki lesa þessar bækur.
     *she  would     may    should   would not   read these books*
  c. hún  gat      ekki lesið  þessar bækur.
     *hún  could  not   read   these books*

d. hún átti / fékk / *kunni /*hlaut / þurfti / ætlaði /
   *she ought were.allowed.to may must needed intended*
   varð ekki að lesa þessar bækur.
   *must not to read these books*

The only modals that are not possible are the modals *kunna* 'may' and *hljóta* 'must'. All the other modals occur in both root and non-root senses. Although the root sense is more salient in the above context, contexts involving only epistemic reading in complements of Class D predicates are easily found, see Bentzen et al. (2008) and §5 below. As was the case with modals in the complements of Class C predicates, modals cancel restrictions on non-subject topicalization in the complements of Class D predicates. (20a) is ungrammatical in my variant, but the examples in (20b and c) are fully grammatical.

(20) Henni þótti leitt að ...
     *her regretted that*
  a. *þessar bækur hafði hún ekki lesið.
     *these books had she no read*
  b. þessar bækur myndi / mátti / skyldi / vildi hún ekki lesa.
     *these books would may should would she not read*
  c. þessar bækur gat hún ekki lesið.
     *these books could she not read*
  d. þessar bækur *átti / *fékk / *kunni / *hlaut / *þurfti / *ætlaði /
     *these books ought were.allowed.to may must needed intended*
     *varð hún ekki að lesa.
     *must she not to read*

Here too, we observe a difference between the modals that select bare infinitives and participles on the one hand and modals that select infinitival complements introduced by the infinitive marker on the other. The former seem to be more capable of overturning restrictions on non-subject topicalization than the former.

*3.5    Class E: Semi-factive predcates*

Class E predicates are perception verbs and verbs of knowledge. These pattern with Class D predicates in embedding complements that are facts. However, they differ from truly factive predicates in that they may lose their factivity in questions, if embedded in the antecedent of a conditional, and under certain modals, see Karttunen (1971). This class patterns with Class A and B in many respects, including the fact that non-subject topicalization is possible in the complements of these predicates, for further discussion, see Wiklund et al (2008). Example (21) shows the compatibility of modals with subject-initial V2 in clauses embedded under the Class E predicate *uppgötva* 'discover'.

(21) Hún   uppgötvaði  að   …
    *she    discovered   that*
  a. nemendurnir  höfðu ekki   lesið  þessar bækur.
    *students-the   had    not    read   these books*
  b. nemendurnir myndu / máttu / skyldu / vildu  ekki lesa þessar bækur.
    *students-the  would   may    should   would ekki read these books*
  c. nemendurnir gátu   ekki   lesið  þessarbækur.
    *students-the   could  not    read   these books*
  d. nemendurnir áttu / fengu   /        kynnu / *hlutu / þurftu / ætluðu /
    *students-the  ought were.allowed.to may    must     needed intended*
    urðu   ekki að lesa þessar bækur.
    *must   not   to readthese books*

The examples in (21) reveal one difference between Class A and B predicates on the one hand and E predicates on the other. As we saw, there were no restrictions on the occurrence of modals in the relevant context embedded under Class A and B predicates. Class E predicates seem to pattern with Class C and D predicates in that the modal *hljóta* 'must' is not possible in embedded subject-initial V2 clauses. The pattern is reversed in case of non-subject topicalization, as *hljóta* may occur in a non-subject initial clause embedded under *uppgötva* 'discover':

(22) Hún   uppgötvaði  að   ...
*she    discovered   that*

a. þessar bækur höfðu   nemendurnir ekki  lesið.
*these books   had     students-the  not   read*

b. þessar bækur myndu /máttu /skyldu / vildu   nemendurnir ekki lesa.
*these books   would   may    should would students-the not read*

c. þessar bækur  gátu  nemendurnir ekki   lesið.
*these books     could students-the  not    read*

a. þessar bækur áttu  / fengu      /       kynnu /hlutu /þurftu / ætluðu /
*these books   ought were.allowed.to may    must   needed intended*
urðu  nemendurnir  ekki  að  lesa.
*must students-the    ekki  to  read*

Since topicalization is always unrestricted in the complements of Class E predicates, and since the modal is restricted to contexts of topicalization, as illustrated in (22), one could suspect, from the difference between subject vs. non-subject initial V2 and *hljóta* 'must' above, that the claim that modals overturn restrictions on root transformations is based on false premises and that topicalization opened up for the insertion of modals in the embedded clause. Even if this potentially could explain the grammaticality of *hljóta* 'must' in (22d), topicalization is not possible in the absence of modals in the complements of Class C and D predicates. This we saw above. Thus, modals enable root transformations, not the other way around.

*3.6   Summary*
Only two modals (*kunna* 'can/may' and *hljóta* 'must') cannot occur in finite *that*-clauses. *Kunna* cannot occur in clauses embedded under factive (Class D) predicates, whereas *hljóta* is prevented from occurring in the complements of non-assertive (Class C), factive (Class D), and semi-factive (Class E) predicates. Neither of the two modals enable non-subject topicalization in the embedded clause (although Class E seemed problematic in this respect, as we have seen). Table 4 summarizes the distribution of modals in finite subject-initial *that*-clauses.

Table 4: *Distribution of modals in subject-initial* that-*clauses*

| Modal | Gloss | Class A / B | Class C | Class D | Class E |
|-------|-------|:-----------:|:-------:|:-------:|:-------:|
| *mega* | 'may' | √ | √ | √ | √ |
| *munu* | 'will' | √ | √ | √ | √ |
| *skulu* | 'shall' | √ | √ | √ | √ |
| *vilja* | 'will' | √ | √ | √ | √ |
| *geta* | 'can' | √ | √ | √ | √ |
| *eiga að* | 'ought to' | √ | √ | √ | √ |
| *fá að* | 'be allowed to' | √ | √ | √ | √ |
| *kunna að* | 'can/may' | √ | √ | * | √ |
| *hljóta að* | 'must' | √ | * | * | * |
| *verða að* | 'must' | √ | √ | √ | √ |
| *þurfa að* | 'need' | √ | √ | √ | √ |
| *ætla að* | 'intend' | √ | √ | √ | √ |

The above data suggest that modals differ as to how capable they are at canceling restrictions on non-subject topicalization in *that*-clauses under certain predicates in Icelandic. Modals that select bare infinitives (e.g. *munu* 'will' and *skulu* 'shall') and modals that select participles (*geta* 'can') are more capable of overturning such restrictions than modals that select for infinitival complements with the infinitival marker. The results are summarized in Table 5.

Table 5: *Modals and non-subject topicalization*

| *Modal* | *Gloss* | Class A / B / E | Class C | Class D |
|---------|---------|:---:|:---:|:---:|
| *mega* | 'may' | √ | √ | √ |
| *munu* | 'will' | √ | √ | √ |
| *skulu* | 'shall' | √ | ? | √ |
| *vilja* | 'will' | √ | * | √ |
| *geta* | 'can' | √ | √ | √ |
| *eiga að* | 'ought to' | √ | ? | * |
| *fá að* | 'be allowed to' | √ | ? | * |
| *kunna að* | 'can/may' | √ | * | * |
| *hljóta að* | 'must' | √ | * | * |
| *verða að* | 'must' | √ | ? | * |
| *þurfa að* | 'need' | √ | ? | * |
| *ætla að* | 'intend' | √ | * | * |

A natural question to ask at this point is whether modals also have an effect on the possibility of topicalization in embedded questions, relative clauses, etc. (i.e. the *traditional* non-V2 contexts). The answer to such a question is negative:

(23) a. *Hún spurði hvort þessar bækur hefðu nemendurnir ekki lesið.
   *she   asked   whether these books   had   students-the   not   read*
   b. *Hún spurði hvort þessar bækur skyldu nemendurnir ekki lesa.
   *she   asked   whether these books   should students-the   not   read*

(24) a. *Öllum börnum sem svona bækur hafa foreldrar gefið ...
   *all children   that such books   have parents   given*
   b. *Öllum börnum sem svona bækur skyldu foreldrar hafa gefið ...
   *all children   that such books   should parents   have given*

As the examples illustrate, modals do not enable non-subject topicalization in embedded questions, (23), nor in object relative clauses, (24).

So, perhaps there is something about the nature of *að* 'that'? Subject clauses, which are also introduced by *að*, normally resist root phenomena and Icelandic shows no exception to this generalization, see (25a). Subject

clauses involving modals, however, follow the above pattern: Non-subject topicalization is possible in the presence of the modal *skulu* 'shall', (25b).

(25) a. *Að þessar bækur höfðu nemendurnir ekki lesið ...
   *that these books had students-the not read*
  b. ?Að þessar bækur skyldu nemendurnir ekki hafa lesið ...
   *that these books should students-the not have read*
  ... kom virkilega á óvart.
   *came really  on surprise*

Having shown that modals enable non-subject topicalization in non-root environments in Icelandic, I will now turn to another phenomena that has also been related to the root status of embedded clauses, namely extraction and islandhood.

## 4  Extraction

As discussed by Bentzen et al. (2007), subject-initial V2, as well as non-subject initial V2, is an island for extraction in Norwegian and Swedish. In Faroese and Icelandic, only non-subject initial V2 is. Bentzen et al. relate the differences observed between the languages to differences in root status of V2 in the relevant languages. According to them, subject-initial V2 as well as non-subject initial V2, is a root phenomenon in Norwegian and Swedish, whereas in Faroese and Icelandic, only non-subject initial V2 counts as a root phenomenon:[6]

Table 6: *Islandhood and root status of V2*

|  |  | Fa. | Ic. | No. | Sw. |
|---|---|---|---|---|---|
| Subject-initial V2 | Root | – | – | + | + |
|  | Island | – | – | + | + |
| Non-subject initial V2 | Root | + | + | + | + |
|  | Island | + | + | + | + |

Class belonging does not seem relevant for the possibility of extraction in Icelandic since extraction is equally grammatical from complements of Class

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[6] Table 6 is taken from Bentzen et al. (2007).

C and D predicates as extraction from complements of Class A, B, and E. The example in (26) is meant to illustrate the islandhood of non-subject initial V2 in Icelandic. Example (26a) is an attempt to extract a subject from a clause in which the direct object has been topicalized. Example (26b) shows extraction of an indirect object from the same clause.

(26) a. *Hver$_i$ sagði hann að þessar bækur hefði t$_i$ ekki gefið Kára?
    *who said he that these books had not given Kári*
    b. *Hverjum$_i$ sagði hann að þessar bækur hefði hann ekki gefið t$_i$?
    *who said he that these books had he not given*

Subject-initial V2 is not an island in Icelandic, and as the examples in (27) illustrate, both subject and object extraction are possible from such clauses.

(27) a. Hver$_i$ sagði hann að t$_i$ gæti ekki sungið þetta lag?
    *who said he that could not sing this song*
    b. Hvað$_i$ sagði hann að hann gæti ekki sungið t$_i$?
    *what said he that he could not sing*

Likewise, adjuncts can be extracted from subject-initial V2 clauses in Icelandic. As the answers to the question in (28Q) indicate, the adjunct may either originate from the matrix clause (identifying the place of utterance), (28A$_1$), or from the embedded clause (identifying the reason why you had not met the queen), (28A$_2$).

(28) Q Af hverju$_i$ sagðirðu t$_i$ að þú hefðir ekki hitt drottninguna t$_i$?
    *why said.you that you had not met queen-the*
    A$_1$ Ég sagði það af því að mér fannst þú ættir að vita það.
    *I said it because me found you should to know it*
    A$_2$ Hún hafði ekki tíma til að hitta mig.
    *she had not time to to meet me*

As we have already seen, the presence of modals enables non-subject initial V2 in non-root contexts in Icelandic. Interestingly, the presence of modals also enables object extraction from non-subject initial V2 clauses, (29a). For

some reason, subject extraction is equally marked regardless of whether a modal is present or not, (29b).

(29) a. Hverjum$_i$ sagði hann að þessar bækur myndi hann ekki gefa t$_i$?
      *who      said he   that these books  would he    not give*

    b. *Hver$_i$ sagði hann að þessar bækur myndi t$_i$ ekki gefa Kára?
      *who    said he   that these books  would    not give Kári*

The presence of modals also overturns the ban on extraction from adjuncts in non-subject initial V2 clauses, cf (30) and (31). Although it is clear that the extracted constituent originates from within the adjunct, any doubt should be eliminated by the question/answer sequence in (31). The answer to such a question cannot identify the place of utterance, it can only identify the place where ships should not search for cod.

(30) *Hvaða svæði segja fiskifræðingar að á hrygningartímanum
     *which   area  say   marine.biologists  that in spawning.season-the*
     leiti   skipin    ekki eftir þorski á?
     *search ships-the not after cod    on*

(31) Q Hvaða svæði segja fiskifræðingar að á hrygningartímanum
       *which   area  say   marine.biologists  that in spawning.season-the*
       skuli skipin    ekki leita   eftir þorski á?
       *shall ships-the not  search after cod    on*
    A$_1$ #Þeir sögðu það á Austurvelli.
      *they   said   it    on Austurvöllur.square*
    A$_2$ Undan     ósum Þjórsár.
      *from.under  mouth Þjórsá.river*

It should now be clear that not only does the presence of modals change the root status of embedded clauses, but also their islandhood. The presence of modals renders object extraction and adjunct extraction possible.

Before I turn to the tentative analysis that I would like to propose, I will discuss in which way epistemic modality in non-root contexts gives support to the idea that the size of the left periphery of the complement clause is constant.

## 5 Epistemic modality

Epistemic modality is normally considered to be restricted to root environments, see e.g. Haegeman (2006) and Whitman (1989) who postulates a link between topicalization and the availability of epistemic modal markers in Korean. But in many languages, including the Scandinavian languages, modals may occur in their epistemic sense in non-root contexts, i.e. in the complements of non-assertive and factive verbs, see Bentzen et al. (2008). Example (32) illustrates how the two modals *geta* 'can' and *skulu* 'shall' may turn up in their epistemic/evidential sense in the complements of non-assertive predicate *efast* 'doubt'.

(32) a. Jón  efast um að  veðrið       geti batnað      á morgun
         *John  doubts    that weather.the can  get.better   tomorrow*
     b. Jón  efast um að  norskur fiskur  skuli   vera besti fiskur í heimi.
        *John doubts    that Norwegian fish should be    best  fish    in the world*

In a similar way, both modals may have an epistemic/evidential sense in the complement of the factive predicate *þykja leitt* 'regret':

(33) a. Jóni  þykir leitt  að  veðrið       getur versnað     á morgun.
         John regrets      that weather.the can   get.worse  tomorrow
     b. Jóni  þykir leitt  að  norskur fiskur   skuli   vera besti fiskur í heimi.
        *John regrets      that Norwegian fish should be   best  fish    in the world*

Haegeman (2007) draws a parallel between epistemic modality and various root phenomena which she relates to the Force projection in the left periphery. The data that I have presented here support the existence of such a link, although the nature of this link seems rather complex. Looking at the Class A, B, and E environments, we find both epistemic modality and non-subject topicalization, whithout one depending on the other. Turning to Class C and D environments, however, non-subject topicalization is dependent on the presence of modals in the Icelandic examples that we have seen. A further complication is the fact that also some of the root modals seem capable of making non-subject topicalization available. I will leave this latter fact for future research and make a tentative proposal on the depency relation between "higher" modals and root phenomena.

On the assumption that non-root (epistemic) modality is relatively high in the clausal domain, the data in (32) and (33), where the modal occurs in its non-root sense, suggest that these high positions are present in the embedded clauses under Class C and D predicates. Based on the link mentioned above, I take these positions to be the upper part of the left periphery. I will it leave open whether or not these projections are identical to those proposed by Cinque (1999: 106) or related to them via some kind of Agree relation. In essence, I am proposing that the size of the CP domain is constant across complement types, following Haegeman (2007), contra Haegeman (2006) and Hrafnbjargarson et al. (2007) who propose that complements where root phenomena is restricted only contain the lower part of CP, i.e. Fin. The latter analysis can only be maintained if one assumes that the relevant modals may exceptionally force the presence of more structure. Rather than focusing on the potential exceptionality involved in these cases, I will present an approach where their existence is predicted from the structure that is already there.

Haegeman (2007) argues that the differences between root and non-root status of certain embedded clauses may be derived from covert operator movement into the Force projection, thereby preventing various root phenomena from occurring in the relevant clauses. It is not entirely clear how the Icelandic facts presented above should be accounted for in such an analysis. If we maintain the covert operator movement analysis, the modal should in theory not have any effect on the root status or the islandhood of the relevant embedded clause. The data point in a different direction. The modal, which arguably employs the upper part of the CP layer, opens up for topicalization, extraction, and other kinds of root transformations. A natural question to ask at this moment, then, is how we account for the fact that root transformations are possible in clauses containing modals, but not in clauses without them. In the next section, I will present a tentative analysis that does not involve covert operator movement. Instead, I propose that parts of the CP layer of the embedded clause are needed to convey the meaning of the matrix predicate. As we will see, my proposal does not eliminate the operator itself, but it eliminates the need for covert movement of the relevant operator. If a modal is present in the embedded clause, it will take over part of the CP layer making it available for root transformations and extraction. In what

follows I will concentrate on root phenomena, leaving the extraction facts for future research.


## 6 A tentative analysis

I propose that the difference between Class A, B, and E predicates on the one hand and Class C and D predicates on the other hand is that the latter use parts of the clauses they embed to spell out their meaning. This is why they normally do not allow root phenomena in the embedded clause. Exactly what this meaning is in semantic terms and how it maps onto the relevant structure remains unsolved in the current paper, but I assume that it has to do with e.g. the presuppositional and factive properties of the verb involved.

The tree structure in (34) illustrates how Class C and D predicates use the lowest part of the matrix clause and the upper part of the embedded clause, including the complementizer. The gray areas in the tree structure are the part of the clausal spine needed for these predicate classes to spell out the meaning of the matrix verb.

(34)  *Class C and D*
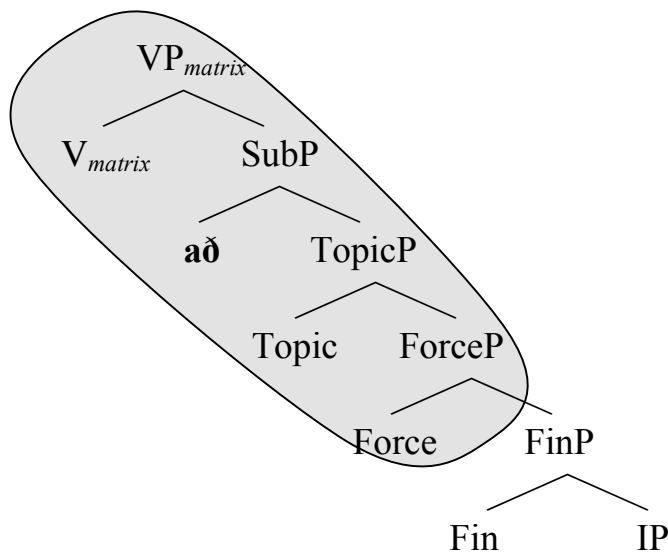


In (35), which illustrates Class A, B, and E predicates, the gray area only covers the lowest part of the matrix clause. i.e. these predicates do not need more structure to spell out their meaning.

(35)  *Class A and B*

```
        VP_matrix
       /      \
  V_matrix    SubP
             /    \
           að     TopicP
                  /     \
               Topic    ForceP
                       /     \
                    Force    FinP
                            /    \
                          Fin    IP
```
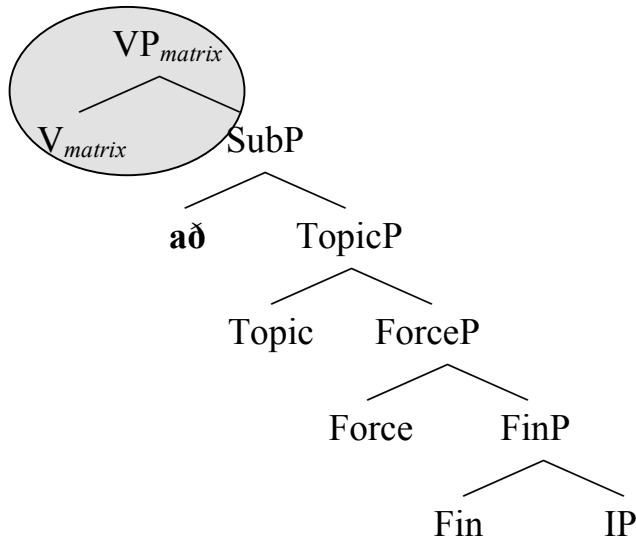
In essence, my proposal implies that factive predicates and non-assertive predicates employ more structure than assertive (and semi-factive) predicates. Although the present analysis, in one sense, shares with the truncation analysis of Haegeman (2006) and Hrafnbjargarson et al. (2007) the proposal that factive complements are smaller than non-factive complements, the structure is not missing on the present analysis. It is used by the matrix predicate. Since the size of the CP in the complement clause is kept constant, the present analysis can be seen as a hybrid between the truncation analysis and Haegeman (2007).[7] It is precisely this hybridity, I claim, that captures the Icelandic data presented above as we will see shortly. Whether these are exceptional or not, I have nothing to say about.

According to Zubizaretta (2001), factive predicates, unlike propositional attitude verbs (or, in different terminology, assertive predicates), contain an assertion operator which is lexicalized by the complementizer. According to her, this explains why the complementizer is obligatory in the complements verbs like *regret*, but not in the complements

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[7] A truncation analysis that goes in a different direction seem to be proposed by Barbiers (2002: 51) who implies that factive complements involve more structure than non-factive complements. His claim is that the difference comes from the presence of a Force feature which is present in factive clauses, but not in propositional clauses. According to Barbiers, "factive clauses can trigger movement to SpecForceP because Force is complete and may be assigned an EPP feature. On the other hand, propositional clauses are defective in that they lack Force".

of verbs like *think*. The complementizer *að* 'that' is less prone to delete in Icelandic, compared to e.g. Swedish *att* 'that', and given certain assumptions, the present analysis captures the generalization that the complementizer is obligatory in the complement of factive verbs, even in Swedish. In Swedish, *att* is obligatorily present in the complements of both factive (*ångra* 'regret') and non-assertive (*förneka* 'deny') predicates. In stead of assuming that the complementizer is a lexicalized assertion operator, it may be the case that the complementizer spells out parts of the meaning of the matrix verb and that it may spell out different types of features depending on the matrix predicate. For verbs like *regret*, the complementizer would serve as a factive operator. This may also be the case for semi-factive verbs (Class E) which require the overt realization of a complementizer in Swedish. Class E, however does not employ larger chunks of the left periphery, and does therefore pattern with Class A and B predicates with respect to root phenomena:

(36)   *Class E*
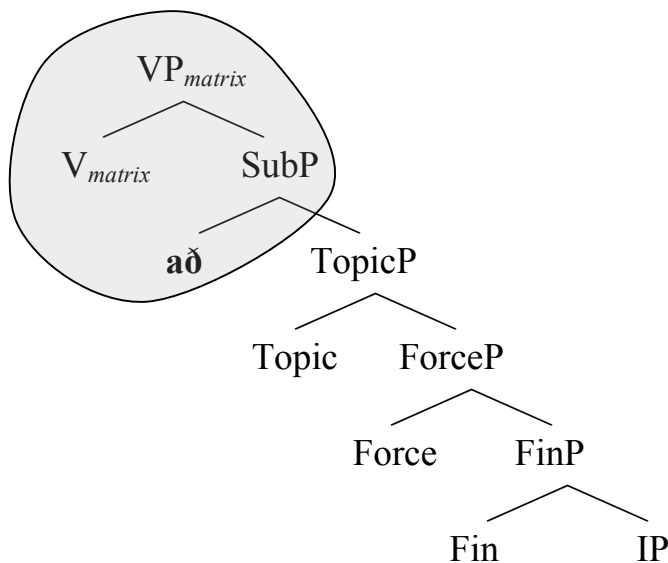


The complementizer does not spell out parts of the meaning of assertive verbs and semi-factives, which in turn means, that the complementizer is not a part of the matrix predicate, and therefore, not obligatorily present in all languages.

If there is a modal in the clause, it will take over the part of the clause which the matrix verb (a Class C or D predicate in the relevant case) would otherwise use, but the complementizer would still be part of the space used to

spell out the meaning of the matrix predicate. The modal, so to say, releases the part of the CP domain that is usually related to root phenomena.

(37)   *Class C and D: Modal in the embedded clause*
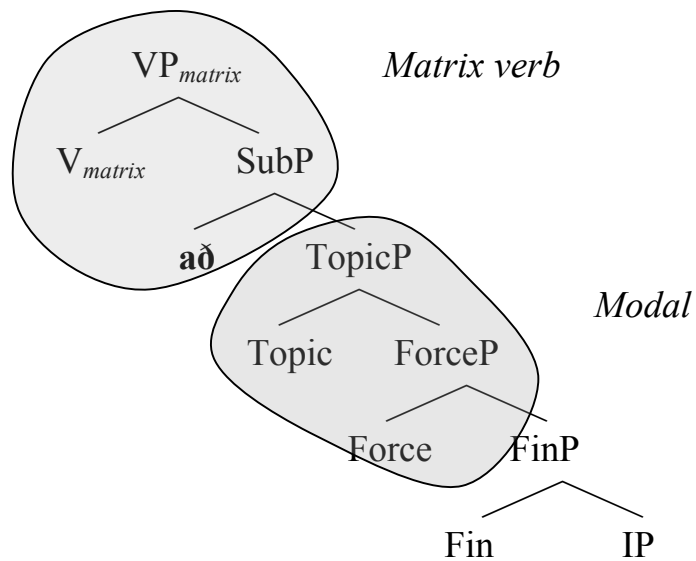


## 7      Conclusions

I have presented data from Icelandic concerning modals and their ability to overturn certain restrictions on root transformations, extraction, and epistemic reading. More precisely, the presence of certain modals has an effect on the structure of the embedded clause, such that non-subject topicalization, extraction become possible in contexts where they are otherwise impossible. In all of these cases, the presence of modals seems to involve parts of the left periphery. I have argued for a tentative analysis, suggesting that certain matrix verbs employ parts of their embedded clauses to spell out their meaning. This ability to grab into the embedded clause is cancelled by the presence of modal verbs, which in turn opens up for the possibility of a wide range of phenomena which are normally restricted in the relevant contexts. The advantage of such an analysis is twofold. The size of the left periphery of embedded clauses is kept constant, and there is no need for covert operator movement to explain the absence of root phenomena in these environments.

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# Points of convergence between functional and formal approaches to syntactic analysis

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**Abstract**

The paper discusss two different approaches to linguistic theory and their relation to empirical issues in syntactic analysis. The two approaches chosen are probably the two most widespread ones in Scandinavian linguistics, here seen as representing a functional and a formal view respectively: The functional approach is represented by Paul Diderichsen's (1936, 1941, 1946, 1964) *sætningsskema*, 'sentence model', and the formal approach is represented by analysis whose main features are common to the principles and parameters framework (Chomsky 1986) and the minimalist programme (Chomsky 1995).

Section 2 argues that the difference between theoretical and empirical lingustics is not an opposition but an interdependence, and section 3 discusses various differences within the two approaches.

After these preliminary discussions, section 4 gives a detailed introduction to clausal architecture in the two approaches, and sections 5 and 6 directly juxtapose the two appproaches, by taking something often considered typical for one approach (the fields and slots in the functional approach, and the movement operations in the formal approach), and examining what they correspond to in the other approach.

The paper concludes that the approaches have more things in common than on might think, and linguists would therefore be well-advised to pay attention to insights gained in approaches different from their own.

## 1. Introduction

The aim of this paper[1] is to discuss two rather different approaches to linguistic theory and their relation to empirical issues in syntactic analysis. It is based on our work within a project on object positions carried out at the University of Aarhus 2005-2007. The purpose of the project was to combine and compare what is usually labelled formal and functional approaches to linguistics.

Our general experience from the project is that the two approaches, in spite of a number of differences, have a high number of fundamental assumptions in common, and that it is therefore not only possible but also fruitful to approach the same problems and phenomena from the two perspectives. As we shall try to show, a great deal of compatibility may be found between the two approaches, in the sense that the conclusions reached by one side by no means exclude what the other side claims concerning the same phenomenon.

In sections 2 and 3, we shall first be concerned with the common ground for the formal and functional approaches. In section 4 we discuss the two approaches in detail, in section 4.1 a typical functional analysis of clause structure and in 4.2 a typical formal one, before we present the points of convergence between the analyses in section 5. In section 6 and the appendix, we discuss some more related ideas, viz. syntactic movement in section 6 and the status of constructed examples in the appendix. Section 7 is the conclusion.

## 2. Theoretical and empirical linguistics

The way we see it, both formal and functional approaches completely agree with the following dictum from Bourdieu (1988:774–775)[2]:

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[2] Bourdieu's formulation here is a paraphrase of Kant (1929:93):
> *Thoughts without content are empty, intuitions without concepts are blind. [...] The understanding can intuit nothing, the senses can think nothing. Only through their union can knowledge arise. But that is no reason for confounding the contribution of either with that of the other; rather it is a strong reason for carefully separating and distinguishing the one from the other.*

(1)  *Theory without empirical research is empty, empirical research without theory is blind*

i.e. that linguistic theory needs empirical support and linguistic data need theoretical interpretation. The latter of these two points is made more forcefully by Neil Smith (1989:32):

(2)  *Any attempt to provide explanations presupposes a theory. The difference between so-called theory-neutral and theoretically based explanations is not really one between the presence and absence of an appeal to theory, but a difference in the sophistication and depth of the two theories involved.*

The two approaches also agree that the optimal theoretical hypothesis is the one that by means of the fewest auxiliary assumptions ("the lowest cost") yields the highest number of further testable predictions ("the highest returns"), cf. e.g. the "empirical principle" of Hjelmslev (1943:11). The formal and the functional approaches only start to disagree when it comes to deciding whether the higher returns given by hypothesis A over other hypotheses B or C justify the higher costs (also e.g. in terms of abstractness) that hypothesis A might have compared to its competitors.

An objection against rather abstract approaches, which has been raised e.g. against formal approaches such as generative linguistics is that the formal approaches are far too specific and furthermore hampered by being a priori. But the claim against an a priori approach is, from a philosophical point of view, untenable.

(3)  *About thirty years ago there was much talk that geologists ought only to observe and not theorise; [ … ] at this rate a man might as well go into a gravel-pit and count the pebbles and describe the colours. How odd it is that anyone should not see that all observation must be for or against some view if it is to be of any service.*

(Charles Darwin in a letter to Henry Fawcett 18.09.1861,
*www.darwinproject.ac.uk/darwinletters/calendar/entry-3257.html*,
cited e.g. in Gould 1992 and in Shermer 2001)

(4) *Bien loin que l'objet précède le point de vue, on dirait que c'est le point de vue qui crée l'objet, et d'allieurs rien ne nous dit d'avance que l'une de ces manières de considérer   le fait en question soit antérieure ou supérieure aux autres.*

<div align="right">Ferdinand de Saussure (1972:23)</div>

[Far from the claim that the object has priority over the approach, one could say that the point of view creates the object, and by the way nothing guarantees us in advance that one method of approaching the facts in question is more fundamental or better than any other.]

No systemic approach to linguistics can avoid a priori concepts completely, and hence the claim that a priori concepts are necessarily invalid would seem to belong to an out-dated version of positivism. The whole conception of the clause consisting of phrases as found in traditional grammar is as much a priori as any generative model.

## 3.  Radicalism within the formal and the functional approaches

Often thought of as an across-the board-opposition in linguistics, the distinction between formal and functional approaches actually covers many different aspects worth considering separately.[3]

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

There are, however, numerous intermediate positions. The main feature distinguishing the different versions of each approach is how "radical" it is. Radical formal linguists assume content and communicative function to be of no interest whatsoever, whereas radical functional linguists take content and communicative function to be absolutely essential for the distinctions made in the actual analysis (cf. Newmeyer 1998:17).

Proponents of the non-radical versions of the two approaches are still able

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[3] For a discussion of a linguistic tool which is seen by some as being particular to formal linguistics, namely that of constructed or elicited examples, see the appendix.

to interact and indeed learn from one another. This is witnessed e.g. by the increasing interest on the part of formal linguists in discourse phenomena (e.g. Rizzi 1997, Newmeyer 1998, Platzack 2001a,b).

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

Furthermore, certain aspects of the two approaches are very closely related, even if sometimes the conclusions drawn are interpreted in quite different ways. One of these aspects is the underlying assumption that language is a system. System in this context is not to be taken in the Saussurean way, considering language to be a superindividual phenomenon. Instead, both the formal and the functional approaches agree on the basic assumption that language is situated in the mind, and that it interacts with the cognitive non-linguistic apparatus in the mind. In other words, both formal and functional linguists would seem to agree that investigation into cognitive and psychological features of the brain is crucial to an understanding of linguistic phenomena. This constitutes what we might call the Chomskyan heritage in modern linguistics. Chomsky's conception of language as a feature of the mind has become a *conditio sine qua non* for linguistic analysis, e.g. in the way that almost all linguists find the distinction between competence and performance to be a useful tool.

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

## 4. Clausal architecture in the formal and functional approaches

So far, we have set out similarities between formal and functional approaches on a general, meta-theoretical level. We now want to continue on a more concrete

level, with a comparison between a typical functional analysis of Danish clause structure in section 4.1 and a typical formal one in section 4.2.

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

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

At first glance Diderichsen may appear to be a relatively ordinary structuralist syntactician. However, his approach relies on a number of assumptions about what sentences do in texts, i.e. a typical functionalist approach. These assumptions also form the basis for the current understanding among Danish (and Scandinavian) linguists that Diderichsen's syntactic models form a natural part of a functional approach.

In order to understand Diderichsen as a functional theory, two aspects of this theory are crucial: One is his interpretation of the surface string as a means of introducing discourse elements, and the other is his understanding of the sentence as a speech act. The first is expressed in the organisation of the sentence into fields. The original labels pointed to the function of the sentence in the discourse; the fields were labelled ***Fundamental field***, ***Nexus field*** and ***Content field***, respectively, according to the distribution of the contextual functions across the sentence, moving from 'old information' to 'new'. That these labels were given up towards the end of his career (see Diderichsen 1964) is perhaps less important; given that they were an essential part of the concept when Diderichsen conceived his analytical tools, and the basic idea of organizing the sentence in such field relies on the view that information structure runs along these lines. Without the labels the field structure would lose its meaning.

Another important aspect of Diderichsen's functional affinities is his understanding of the sentence as a speech act. As opposed to the field structure, this aspect of Diderichsen's reasoning had less direct influence on his syntactic models. The most important source for this part of Diderichsen's thinking is his paper on the modal character of the sentence (Diderichsen 1939). What he really does in this somewhat enigmatic paper is to explain the sentence not as a

classical logical concept, but as a contribution to a concrete speech situation. Unfortunately, his argumentation on this point is quite long-winded and demands rather complex quotes; for which we have to refer the reader to other treatments, e.g. Jørgensen (2000c, to appear).

The present-day interpretation of Diderichsen's syntax as functional is seen in this quote from Heltoft (1992:18):

*In Danish topological tradition (Paul Diderichsen's sentence frame) the three main functions of word order correspond by and large to the tripartition of the main clause into socalled fields. (...)*

*(5)    Functional interpretation of Diderichsen's sentence frame*

| anaphors, theme, focus | reality | grammatical functions / semantic content |
|---|---|---|
| fundamental field | actuality (or nexus) field | content field |

## 4.1  Diderichsen's fields and slots

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

Slots may encompass constructions of different kinds, e.g. relative clauses may be contained in nominal slots. The slots are determined by the main verb carrying the valency and the constructions attaching directly to it, either through valency or through adverbial modification.

Within Diderichsen's line of thinking, constituents are shown to be justified mainly by the method of isolation in the front position, i.e. a word sequence is a constituent if it can precede the finite verb in a Danish main clause. (6a,b) thus show *den blå bil* and *den røde bil* to be constituents, whereas (6c) does not show that *bil kørt* is a constituent:

| (6) | a. | <u>Den blå bil</u> | er | | kørt | ind i | den røde bil |
|---|---|---|---|---|---|---|---|
| | | *The blue car* | *has* | | *driven* | *in to* | *the red car* |
| | b. | <u>Den røde bil</u> | er | den blå bil | kørt | ind i | |
| | | *The red car* | *has* | *the blue car* | *driven* | *in to* | |
| | c. | *<u>Bil kørt</u> | er | den blå | | ind i | den røde bil |
| | | *Car driven* | *has* | *the blue* | | *in to* | *the red car* |

Apart from this, we find little to motivate the organisation of constituents. Diderichsen hesitated to include relational phenomena (valency, subjects and objects) in his syntactic universe. In his last theoretical approach (Diderichsen 1964), he tried – not quite successfully – to argue for the choice of nominal slots on the basis of case, an approach that collapsed due to the complicated conditions on pronominal case in Danish.[4]

Usually the criteria used to define such slots were of two kinds. One criterion was that at a certain level of analysis, certain phrases were considered equal, e.g. all final adverbs, and were therefore bundled into one and the same slot. Another criterion was what we might now call scrambling: If two elements could exchange positions, they would belong to the same slot.

These criteria, however, must be used with care. Consider the medial adverbs. From a part-of-speech point of view, medial adverbs are defined as a group and may be confined to one slot. If scrambling, however, were the criterion, strict ordering rules might be observed between several minor groups of medial adverbs, a fact that could be used to postulate more than 20 different medial adverbial slots, each of them having only a very restricted number of tenants and hence only present in very few cases.[5]

The field level on the other hand is an overall level of organisation. Diderichsen's original approach used the verbal slots as boundaries for the fields. A Danish main clause was seen as split up into three fields, (7a): one before the finite verb slot (**v**), one starting with the same finite verb slot, and one starting with the infinite verb slot (**V**). A somewhat different but similar analysis was given for an embedded clause, (7b).[6]

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[4] See Jørgensen (2000d: 53-90, 101-135), for a discussion of the complications of case form distribution in Danish, and how relational facts may be incorporated into the sentence model.

[5] The ordering rules of the medial adverbs were described in Mikkelsen (1911: 650-653). See also Cinque (1999:77-106) and Nilsen (1997).

[6] Abbreviations and Danish terminology used in (7) (cf. Diderichsen 1946, 1964):

(7) a.   Main clause:

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

Diderichsen (1946:162)

b.   Embedded clause:

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

cf. Diderichsen (1946:186)

These two models have been very influential, as can be seen from the many treatments that are based on them. The main clause model and embedded clause model above form the basis of the analyses in Hansen (1977:44, 72-74), Heltoft (1986a), Allan et al. (1995:491-498), Jørgensen (2000b:63-78), Togeby (2003:56, 72, 97-99) and Hansen & Heltoft (2003:172-173), among others.

As opposed to the slot level, the field level is definitely not a matter of constituency, as argued in Bjerre (forthcoming), where the field level of the Diderichsen model is discarded for this very reason. As may be deduced from the original names in Diderichsen's papers, the intention behind these fields was to define special areas of the clause where certain morphemes with particular functions in the semantic superstructure find their place. This fits well with the semantic descriptions he gave.

Heltoft (1986a,b) and, following him, Jørgensen (1993, 2000d: 86-89) have suggested a different layout of the fields: A core field encompassing roughly everything that directly depends on the main verb (including the subject), and a

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

frame field containing elements that fit the sentence into its textual and pragmatic context. To the right of the core field, a localisation field may be added, which however is not present in all versions. One version of this model looks as follows, again with the main clause version first, and then the embedded clause version: [7]

---

[7] Abbreviations and Danish terminology used in(8), cf. Hansen & Heltoft (2003:156-173)

|  |  |  |
|---|---|---|
|  | frame field | "rammefelt" |
|  | core field | "kernefelt" |
|  | localisation field | "lokaliseringsfelt" |
| F | foundation field (see below) | "fundamentfelt" |
| R | reality field | "realitetsfelt" |
|  | subject | "subjekt" |
|  | content field | "indholdsfelt" |
| X | [anything] |  |
| $V_f$ | finite verb | "finit verbum" |
| S | subject | "subjekt" |
| SA | sentential adverbial | "sætningsadverbial" |
| $V_i$ | non-finite verb (although in(8b), $V_i$ contains the finite verb, cf. (17) further below) | "infinit verbum" |
| DO | direct object | "direkte objekt" |
| P | (non-temporal) predicate | "prædikativer" |
| BA | bound adverbials | "bundne adverbialer" |
| TSA | time and place adverbials | "tids- og stedsadverbialer" |
| K | conjunction | "konjunktion" |

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

(8) a.  Main clause:

| Frame field | | Core field | | | | | | Localisa-tion field |
|---|---|---|---|---|---|---|---|---|
| **F** | **R** | **Subject** | | **Content field** | | | | |
| **X** | **V$_f$** | **S** | **SA** | **V$_i$** | **DO** | **P** | **BA** | **TSA** |
| måske *maybe* | har *have* | de *they* | først *first* | sendt *sent* | brevet *letter-the* | Ud *Out* | (-) | i går *yesterday* |
| hun *she* | har *has* | (-) | (-) | gjort *done* | det *it* | Færdigt *Finished* | i hånden *by hand* | (-) |

(adapted from Hansen & Heltoft 2003:172)

b.  Embedded clause:

| Frame field | Core field | | | | | | Localisa-tion field |
|---|---|---|---|---|---|---|---|
| **R** | **Subject** | | **Content field** | | | | |
| **K** | **S** | **SA** | **V$_i$** | **DO** | **P** | **BA** | **TSA** |
| hvis *if* | de *they* | først *first* | har sendt *have sent* | det *it* | ud *out* | (-) | i går *Yesterday* |
| fordi *because* | hun *she* | (-) | har gjort *has done* | det *it* | færdigt *finished* | i hånden *by hand* | (-) |

(adapted from Hansen & Heltoft 2003:173)

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

Regardless of how they are defined exactly, the fields do not represent

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

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

Diderichsen (1941:21, 35-36) links this to a diachronic development of subjecthood from what was originally that of *nominativus verbi* (the nominative of the verb), i.e. closely attached to the verbal stem and hence connected with the content side, towards the present state, where the subject is part of the actualisation of the meaning and therefore is part of the nexus. Even if the idea of such a diachronic development may not be tenable, the double nature of subjecthood is described well in this way.[8]

## 4.2 Generative tree structures

In a generative analysis, syntactic constituents all have the same basic structure, namely one shown in (9), often referred to as "X-bar structure":

---

[8]    Notice the parallel with the "VP-internal subject hypothesis" in recent generative theory where the subject is taken to start out from the specifier position of VP and move from there into the specifier position of IP (cf. Haegeman 2006:247-262 and references therein). For reasons of exposition, this movement has been left out of (14) and (16) below.

(9)

```
                        XP
              ┌──────────┴──────────┐
            YP                      X'
         specifier          ┌───────┴───────┐
                           X°              ZP
                          head         complement
```
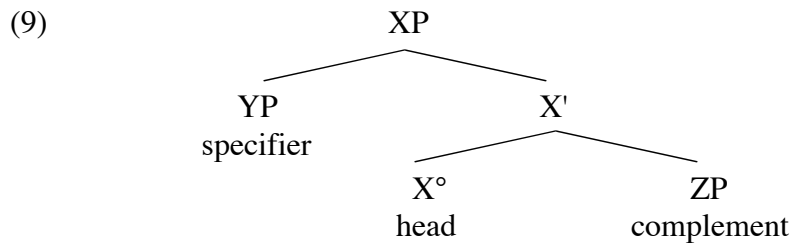
There are three projection levels in (9):

(10) XP  = phrase  /  the maximal projection of X

   X'   = X-bar  /  the intermediate projection of X

   X°  = head   /  the minimal projection of X (= e.g. a word or an even smaller unit)

Saying that XP and X' are projections of X expresses the idea that these constituents are built up around X°, such that i.e. [PP *across the hall*] is built around [P° *across*].

   X (and also Y, Z, and W) in (9), (10), and (12) may stand for one of the following categories:

(11)

| lexical categories (word classes) | "functional" categories |
|---|---|
| N    (noun) <br> V    (verb) <br> P     (preposition) <br> Adj  (adjective) <br> Adv (adverb) | C ("complementiser" <br>        = subordinating conjunction) <br> I  (inflection) <br> D (determiner)[9] <br>    etc. |

   A head is always the head of its own phrase (its own maximal projection), and all maximal projections have a head (are endocentric). Inside a phrase, there is also room for two other phrases, namely in the specifier position and in the complement position.

   The position of the so-called specifier position is normally considered to be fixed, i.e. it is taken to always be the left daughter of XP. The sequence of the head and the complement may on the other hand vary, depending on the language.

   Both heads and phrases (minimal and maximal projections) may move. Heads may only move into other head positions, and phrases may only move

---

[9] A determiner such as *den* 'the' is here seen as the head (D°) of the Determiner Phrase (DP) *den blå bil* 'the blue car'. The complement of D° is the NP *blå bil* 'blue car', and the head (N°) of this NP is *bil* 'car'.

into other phrase positions. X-bar constituents (intermediate projections) may not move at all.

Both heads and phrases may be adjoined to other constituents. Heads may only adjoin to other heads, and phrases may only adjoin to other phrases. X-bar constituents may not be adjoined at all.
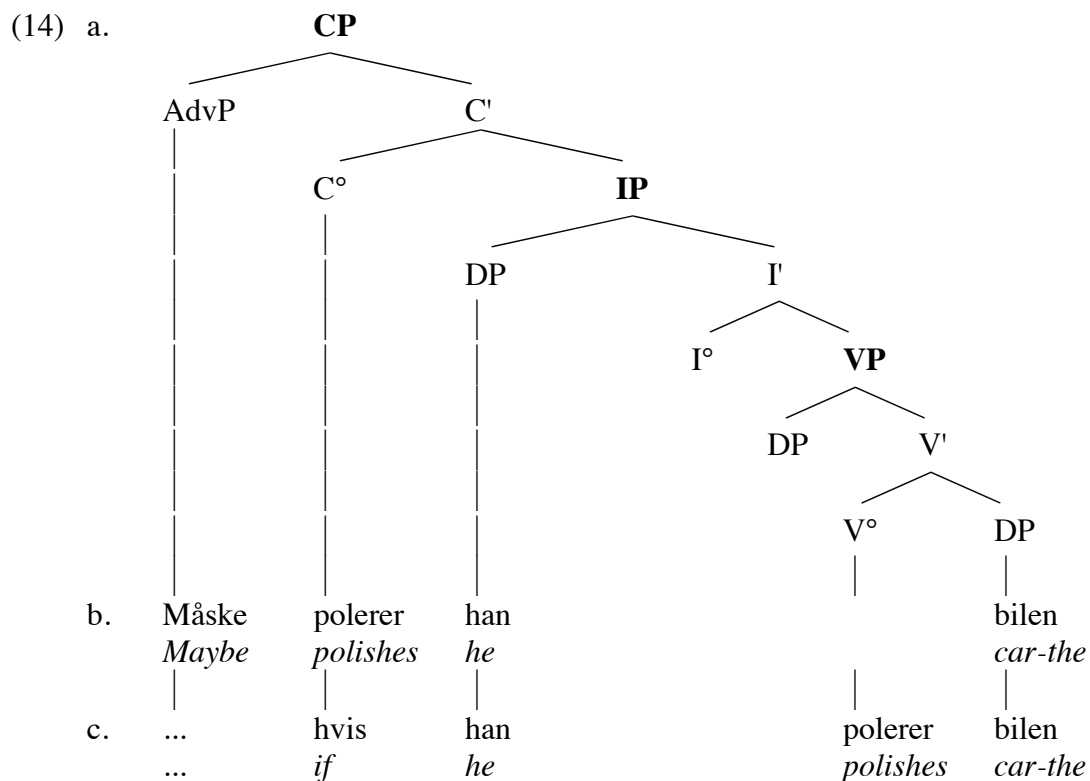
Adjunction takes the following form, where the adjoined constituent, WP/W°, may be adjoined either to the left, as shown, or to the right of the XP/X° that it modifies:

(12)  a.

```
            XP
         ┌──────┴──────┐
        WP            XP
   adjoined position
```

b.

```
            X°
         ┌──────┴──────┐
        W°            X°
   adjoined position
```

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

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

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

(14)  a.

```
                              CP
                   ┌──────────┴──────────┐
                 AdvP                    C'
                  │              ┌───────┴───────┐
                  │             C°               IP
                  │              │        ┌───────┴───────┐
                  │              │       DP               I'
                  │              │        │         ┌──────┴──────┐
                  │              │        │         I°            VP
                  │              │        │               ┌───────┴───────┐
                  │              │        │              DP               V'
                  │              │        │                         ┌──────┴──────┐
                  │              │        │                        V°            DP
                  │              │        │                         │             │
      b.        Måske        polerer     han                                    bilen
               Maybe        polishes      he                                   car-the
                  │              │        │                         │             │
      c.         ...           hvis      han                      polerer       bilen
                 ...            if         he                     polishes      car-the
```

(where movement has taken place in (b), of the finite verb *polerer*, from V° to C°, cf. section 6.2 below.)

Also in the generative analysis, there are tests for constituency, e.g. substitution tests or movement tests (the latter being a version of the commutation test). The underlying idea is that if two or more words (e.g. *the blue car*) may undergo substitution, (15b), or movement (15c) together, then they form a constituent, whereas if two or more words (*polished the blue*) cannot be substituted by anything, (15d), or cannot be moved, (15e), then one possible reason may be that they do not form a constituent:

(15)  a.                          Har  hun  poleret    den  blå  bil  ?
                                   *Has  she  polished  the  blue  car  ?*

    b.                      Har  hun  poleret    <u>den          </u>  ?
                                 *Has  she  polished  it          ?*

    c.    <u>Den  blå   bil</u>     har  hun  poleret                 .
        *The  blue  car*    *has  she  polished*

    d.   *                Har  hun  <u>xxxxx          </u>  bil  ?
                                 *Has  she  xxxxx          car  ?*

    e.   *<u>Poleret   den  blå</u>  har  hun             bil  .
         *Polished  the   blue  has  she*         *car*

(The asterisks in front of (15d,e) signal that these two examples are not well-formed. *xxxxx* in (15d) signals that no pronoun (or other proform) exists that can substitute for the string *poleret den blå* when *bil* is present in the clause but not included in the substitution.)

## 5.  Points of convergence between the formal and functional approaches
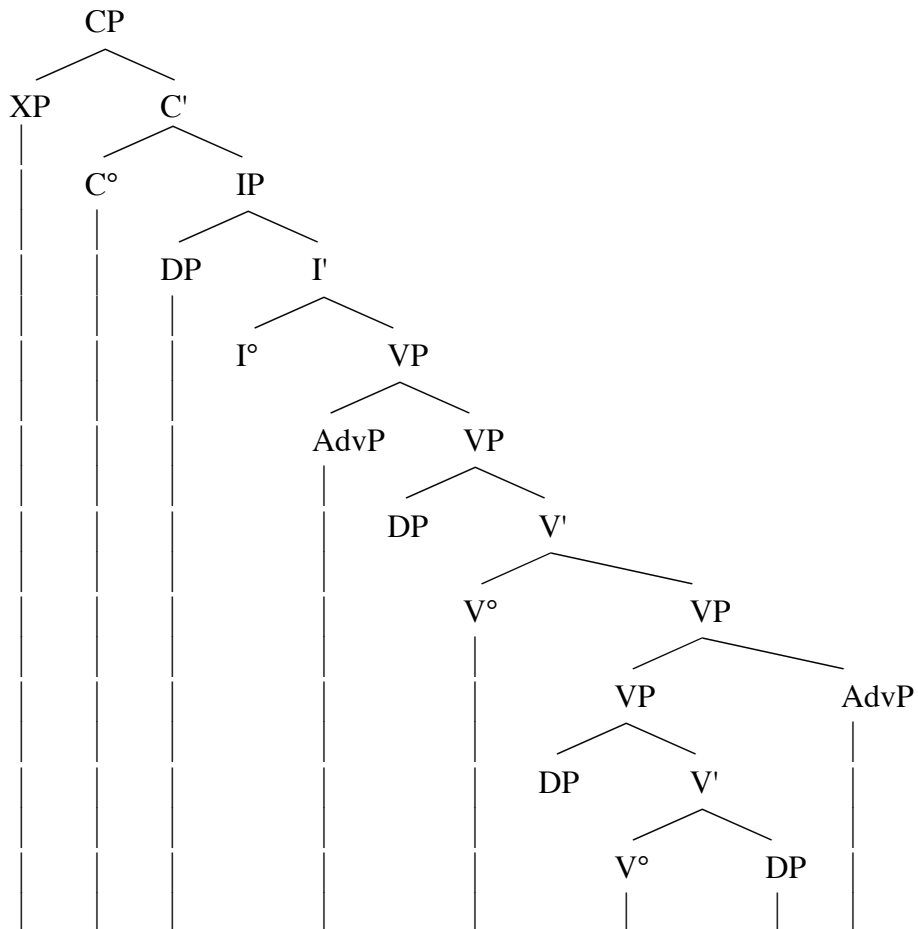## 5.1  Topological slots and their equvalents in the tree structure

As said above, although there are a number of differences between the two approaches to linguistic analysis, there are also points of convergence. One such point (even if the convergence is only partial) has to do with the slots in the Diderichsen analysis and what they correspond to in the generative analysis.

    The generative structure in (16a) below corresponds to the basic generative

structure in (14) above, with the addition that adverbials (and other adjuncts) may be adjoined both on the left side and on the right side of a VP. In (16a), *again* is adjoined to the right of the VP *has polished the car with steel wool*.

The tree in (16a) can be directly compared to the simplified Diderichsen models of constituent order in modern Danish in (16b) for main clauses and in (16c) for embedded onees, cf. (7) and(8) above (and references there):

(16) a.

```
                          CP
                        /    \
                      XP      C'
                      |      /  \
                      |    C°    IP
                      |    |    /  \
                      |    |  DP    I'
                      |    |  |    /  \
                      |    |  |  I°    VP
                      |    |  |  |    /  \
                      |    |  |  | AdvP  VP
                      |    |  |  |  |   /  \
                      |    |  |  |  | DP    V'
                      |    |  |  |  | |    /  \
                      |    |  |  |  | |  V°    VP
                      |    |  |  |  | |  |    /  \
                      |    |  |  |  | |  |   VP   AdvP
                      |    |  |  |  | |  |  /  \    |
                      |    |  |  |  | |  | DP   V'  |
                      |    |  |  |  | |  |  |  /  \ |
                      |    |  |  |  | |  |  | V°  DP|
```

b.

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

c.

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

It is perhaps indicative of this convergence between formal and functional analysis that the first person to suggest the correspondence shown in (16b,c) between Diderichsen's analysis of Danish **main** clauses and Diderichsen's analysis of Danish **embedded** clauses was a generative syntactician, Christer Platzack (1985:71, fn 5). It is also interesting to note that this suggestion was in turn taken up by the functional syntactician Lars Heltoft (1986a:108), cf. also Hansen & Heltoft (2003), as shown in(8) above.

As may be seen in (16a,b,c), the slots in the Diderichsen analysis have directly corresponding positions in the generative tree structure. The following list shows where either approach should be able to understand and build on insights gained in the other approach:

(17)    **Diderichsen (1946), cf. (7a,b)**      **Tree structures, cf. (14) & (16)**

    a.    F  (foundation field)             = CP-spec

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

    c.    n (subject position)             = IP-spec

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

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

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

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

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

---

**Excursus:**

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

(i)    a.    ... at han ikke [$_V$ kan]    [$_V$ <u>have mødt</u>]    [$_N$ den nye minister]    personligt.

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

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

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

(ii)    [<u>Den nye minister</u>] kan han ikke have mødt personligt.

        *The new minister can he not have met personally*

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

    The Diderichsen analysis takes them to occupy one and the same slot, (ia), because they occur to the right of one established constituent (the finite verb) and to the left of another established constituent (the object).

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

(iii)    [<u>Mødt</u> den nye minister personligt] kan han ikke <u>have</u>,

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

        *Met the new minister personally he cannot have*

            *but he can perhaps well have talked in telephone with her*

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

It is not a particularly constructive line of inquiry to debate which model makes most sense from a scientific point of view. The generative model might very well fall victim to Occam's razor if the only task for syntactic theory should be to account for the syntax of Danish, as it assumes many more positions than are needed to account for the actual items of Danish syntax. In this sense a sentence model of the Diderichsen type may be sufficient to account for Danish syntax.

    As has been demonstrated from time to time (Askedal 1986, Bleken 1971,

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

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

Take as an example the I°-position, which is one of the positions in the generative tree (16a) that are always empty in Danish, and which would therefore seem to be superfluous. However, in French, in Icelandic and in older stages of Danish, finite verbs occur in I°, and this position in the structure can therefore be a starting point for saying something principled about differences between languages (as e.g. in Vikner 1997, 1999b, 2005a). When it comes to the topological models, different languages need different (pairs of) models in the Diderichsen view (one pair for Danish/Swedish/Norwegian as in (16b,c), another pair for old Danish/Icelandic, cf. Diderichsen 1941:89, and a completely different model for e.g. German, cf. e.g. Wöllstein-Leisten et al. 1997:53-75, etc.). Such an approach would therefore not give any principled reason why Danish does not follow the model for German or why German does not follow the Danish one. This could be seen as the price paid by the Diderichsen model(s) for not containing any positions which are never filled.[10]
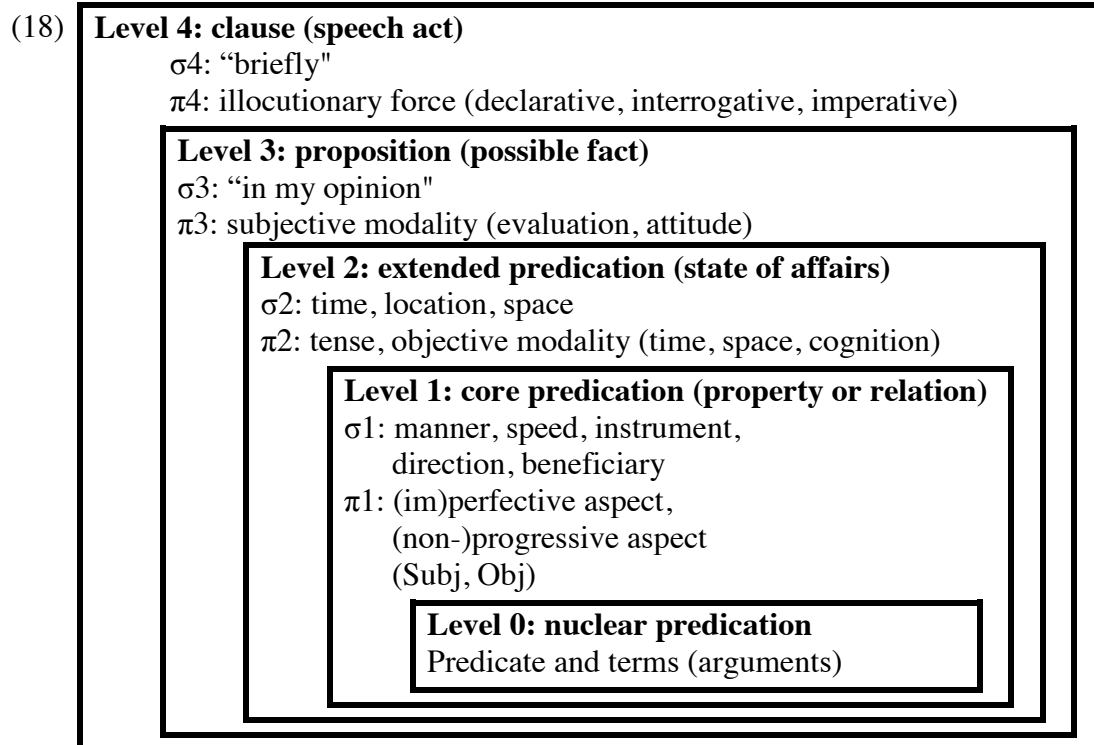
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[10] The other two positions in the generative tree (16a) that have no equivalents in the Diderichsen analysis in (16b,c) are the specifier positions in the two VPs. As mentioned in footnote 8 above, a number of formal analyses take these positions to have contained the subject at earlier stages of the derivation.
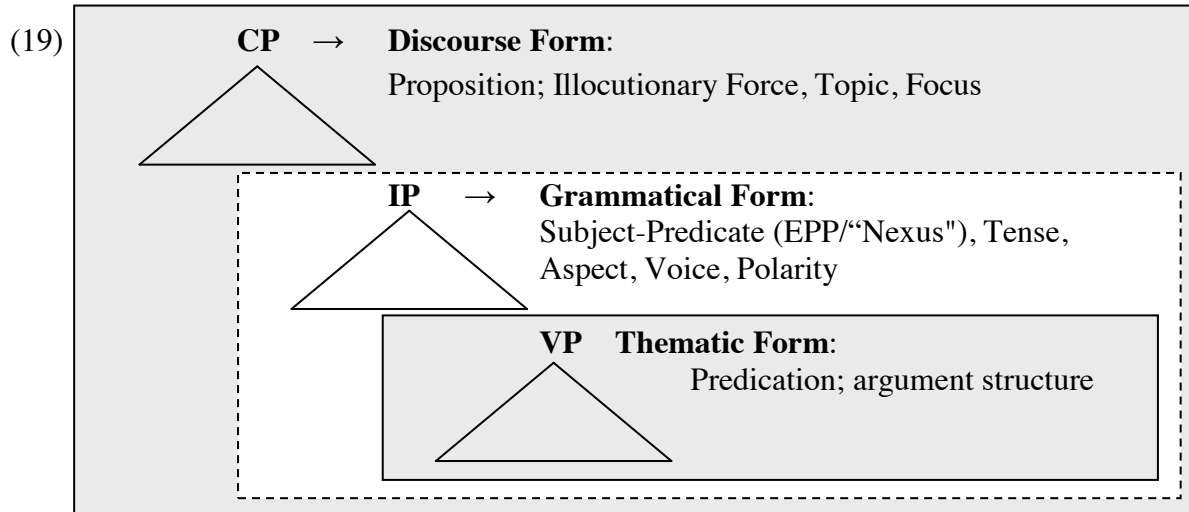
## 5.2 Topological fields and their equvalents in the tree structure

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

The main parts of the generative structure, i.e. CP, IP and VP, can be seen as convergent with commonly accepted domains in functional analyses of clause structure. The layered structure of e.g. Harder (2005:101-110) is found in "classic" Dutch functional grammar (Dik 1997:67, here cited from Christensen 2005:51), where each level takes in more and more constituents of the clause, and where $\pi$ stands for "grammatical operators" and $\sigma$ for "lexical satellites" (e.g. adverbials):

(18)

**Level 4: clause (speech act)**
$\sigma 4$: "briefly"
$\pi 4$: illocutionary force (declarative, interrogative, imperative)

**Level 3: proposition (possible fact)**
$\sigma 3$: "in my opinion"
$\pi 3$: subjective modality (evaluation, attitude)

**Level 2: extended predication (state of affairs)**
$\sigma 2$: time, location, space
$\pi 2$: tense, objective modality (time, space, cognition)

**Level 1: core predication (property or relation)**
$\sigma 1$: manner, speed, instrument,
    direction, beneficiary
$\pi 1$: (im)perfective aspect,
    (non-)progressive aspect
    (Subj, Obj)

**Level 0: nuclear predication**
Predicate and terms (arguments)

The same layered structure is also found in the more recent versions of generative linguistics, cf. the following illustration adapted from Christensen (2005:30), which is in turn based on Platzack (2001a,b):

(19)

| CP | → | **Discourse Form**: Proposition; Illocutionary Force, Topic, Focus |
| --- | --- | --- |
| | | **IP** → **Grammatical Form**: Subject-Predicate (EPP/"Nexus"), Tense, Aspect, Voice, Polarity |
| | | **VP Thematic Form**: Predication; argument structure |

At first sight, this convergence between functional grammar and generative syntax may seem not to include the Diderichsen model: Whereas each of the levels in both (18) and (19) contains the next lower level, the Diderichsen fields are discrete entities, which do not contain each other. This difference may be less crucial than one might expect, however, for two reasons.

One reason is that some of the proponents of Diderichsen take some fields to be part of other fields, e.g. in Hansen & Heltoft (2003:172), the content field is part of the core field, as shown in (8) above (similarly in Togeby 2003:268 and Blom 2006:43, and actually also in Diderichsen 1946:186, text above the tables).

The second and more important reason is that even though Diderichsen's fields are not part of each other, the insights are basically the same in all three frameworks: The generative view of what happens at the IP-level (which comprises the VP, cf. (19)) or Dik's (1997:67) view of what happens at his level 2 (which comprises level 1, cf. (18)) are both very much parallel to Diderichsen's view of what happens in the nexus field, even if the content field is not part of the nexus field, cf. (7):

(20)

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

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

This is because Diderichsen's nexus field corresponds to those parts of the generative tree which are part of the IP but not part of the VP or those parts of functional grammar's level 2 which are not part of level 1.

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

## 6. Movement

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

We shall look at three alleged movements, viz. the position of unstressed object pronouns, the position of the finite verb in main and embedded clauses, and finally what elements may precede the finite verb in main clauses. For ease of exposition, examples have been chosen which closely resemble those used in (16) above.

## 6.1 The position of unstressed object pronouns

In this section, we shall focus on what is known in functional approaches as *letledsreglen*, 'the rule of light objects', and in formal approaches as *object shift*.

The basic observation has two parts. One is that a non-pronominal object always follows a medial adverbial (i.e. an adverbial in Diderichsen's **a**-position = an adverbial left-adjoined to VP), irrespective of whether the adverbial and the object are separated by a verb (21a,b) or not (21c):

(21) a.

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

b.

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

c.

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

The second part of the observation is that an unstressed pronominal object follows a medial adverbial if the adverbial and the object are separated by a verb, (22a,b), or by an object that is stressed. Otherwise the unstressed pronominal object precedes the medial adverbial (22c). In fact, unlike the non-pronominal object, the unstressed pronominal object cannot immediately follow the adverbial, cf. the difference between (21c) and (22d), at least not in "standard" Danish (cf. Pedersen 1993 for dialectal differences in Danish and cf. Vikner 2005b and references therein for the other Scandinavian languages):

| (22) | a. | Nu | har | han | | faktisk | poleret | | den | med ståluld |
|------|----|-----|-----|-----|----|---------|---------|----|-----|-------------|
| | | *Now* | *has* | *he* | | *actually* | *polished* | | *it* | *with steel wool* |
| | b. | ... | fordi | han | | faktisk | polerer | | den | med ståluld |
| | | *...* | *because* | *he* | | *actually* | *polishes* | | *it* | *with steel wool* |
| | c. | Nu | polerer | han | den | faktisk | | | | med ståluld |
| | | *Now* | *polishes* | *he* | *it* | *actually* | | | | *with steel wool* |
| | d. | *Nu | polerer | han | | faktisk | | | den | med ståluld |
| | | *Now polishes* | | *he* | | *actually* | | | *it* | *with steel wool* |

In formal approaches (starting with Holmberg 1986, see Vikner 2005b and references therein), (22c) is an example of movement (object shift) of an unstressed pronominal object from its base position (as seen in (21a,b,c) and (22a,b)) to a different position to the left of the medial adverbial. Such a movement is seen as leaving a so-called trace behind in the base position, which in turn is part of the account for why nothing else can occur in the object position in (22c) although the pronominal object has left this position:

| (23) | | Nu | polerer | han | den | faktisk | bilen | med ståluld |
|------|--|-----|---------|-----|-----|---------|-------|-------------|
| | | *Now* | *polishes* | *he* | *it* | *actually* | *car-the* | *with steel wool* |

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

other.

Another possible analysis of these data is that the unstressed object pronoun cliticises to another element, as suggested in the functional approach by Jørgensen (1991, 2000a,c) and in the formal approach by e.g. Josefsson (1992). The differences between cliticisation and non-cliticisation hypotheses (with their consequences for what qualifies as a host for the clitic) are thus more substantial than the differences between the formal and the functional approaches.    For further discussion of object shift, see e.g. Vikner (2005b), Engels & Vikner (2006), and Bjerre (2007) and references in these works.

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

In Danish embedded clauses, the finite verb follows the medial adverbial and the subject, and immediately precedes the object, (24a), whereas in main clauses, the finite verb always occurs in the second position, preceding the medial adverbial and potentially also preceding the subject, (24b).

| (24) | a. | ... | fordi | han | faktisk | <u>polerer</u> | bilen | med ståluld |
|---|---|---|---|---|---|---|---|---|
| | | ... | *because* | *he* | *actually* | *polishes* | *car-the* | *with steel wool* |
| | b. | Nu | <u>polerer</u> | han | faktisk | | bilen | med ståluld |
| | | *Now* | *polishes* | *he* | *actually* | | *car-the* | *with steel wool* |

The property that the finite verb always occurs in the second position in the main clause (with the exception of main clause *yes/no*-questions and certain conditional clauses, where the finite verb is the first element, see (25a) below) is referred to as "verb second" or V2, and it is a property that Danish has in common with all other Germanic languages, with only one exception: English.

In formal approaches (starting with den Besten 1977, see Vikner 1995, chapter 3, and references therein), (24b) is an example of verb movement from V° (via I°) into C°. In other words, the verb starts out in V° in both (24a,b). In (24a) the finite verb stays in V°, whereas in (24b) it has moved (via I°) into C°. Also here, the movement is seen as leaving a trace behind every time it moves out of a position.

Almost all of the functional approaches have a slot, **v**, which has one position in embedded clauses, F-n-a-**v**-V-N-A, cf. (16c), and another position in main clauses, k-**v**-n-a-V-N-A, cf. (16b), rather than movement from one position to another. The fact that even fewer functional approaches assume movement

here (i.e. concerning the position of the finite verb) than assume movement concerning pronominal objects (section 6.1) or concerning the initial position in main clauses (section 6.3) is not surprising, given that the majority of functional analyses have two different and unrelated analyses for the main and the embedded clause.

## 6.3  The initial position in main clauses

As we mentioned above, the finite verb is always in the second position in Danish main clauses. This is so because there is room for at most one constituent in front of the finite verb in main clauses:

(25)  a.

| | | Har | han | faktisk | poleret | bilen | med ståluld    ? |
|---|---|---|---|---|---|---|---|
| | | *Has* | *he* | *actually* | *polished* | *car-the* | *with steel wool?* |

b.

| | | Han | har | faktisk | poleret | bilen | med ståluld |
|---|---|---|---|---|---|---|---|
| | | *He* | *has* | *actually* | *polished* | *car-the* | *with steel wool* |

c.

| | | Faktisk | har | han | poleret | bilen | med ståluld |
|---|---|---|---|---|---|---|---|
| | | *Actually* | *has* | *he* | *polished* | *car-the* | *with steel wool* |

d.

| | | Bilen | har | han | faktisk | poleret | med ståluld |
|---|---|---|---|---|---|---|---|
| | | *Car-the* | *has* | *he* | *actually* | *polished* | *with steel wool* |

e.

| | | Med ståluld | har | han | faktisk | poleret | bilen |
|---|---|---|---|---|---|---|---|
| | | *With steel wool* | *has* | *he* | *actually* | *polished* | *car-the* |

f.

| | | Ståluld | har | han | faktisk | poleret | bilen | med |
|---|---|---|---|---|---|---|---|---|
| | | *Steel wool* | *has* | *he* | *actually* | *polished* | *car-the* | *with* |

The observation that most constituents of the clause (but no more than one constituent) may precede the finite verb is the empirical basis for Diderichsen's foundational field. This does not mean, however, that there is movement e.g. of the adverbials in (25c,e) from their base positions to the initial position, indeed Diderichsen (1946:185, 190) only talks of placing a constituent in the initial position, even if some of his followers use movement terminology: Hansen (1977:55) directly talks about movement to the foundation field ("opflytning til fundamentfeltet"), and similar expressions are found in Jørgensen (2000b:69, 82) and Blom (2006:116, 139).

In formal approaches (starting again with den Besten 1977, see Vikner 1995, chapter 3, and references therein), (25b-f) are examples of movement of a phrase ("XP" or "maximal projection") from its base position (the empty spaces in (25b-f)) to the specifier position of CP.

As in the two previous sections, the movement here is seen as leaving a trace behind every time it moves out of a position, so that the base position of the moved element cannot be filled by other material, compare e.g. (25b,d) to (26a,b):

(26) a. \*<u>Han</u>    har   <u>hun</u>   faktisk   poleret   bilen    med ståluld
         *He*     *has*   *she*   *actually*   *polished*   *car-the*   *with steel wool*

    b.   \*<u>Bilen</u>   har   han   faktisk   poleret   <u>cyklen</u>   med ståluld
         *Car-the*   *has*   *he*   *actually*   *polished*   *bicycle-the*   *with steel wool*

In order to make a similar prediction within a functional approach, Blom (2006:136) introduces the notion of "topological government" where e.g. a subject in initial position governs the subject position, preventing it from being filled (25b) vs. (26a). It remains to be seen to which extent this and the notion of traces left by movement in the formal approaches will turn out to be notational variants of each other, but the similarities are clearly striking.

Movement and traces in the formal approaches correspond not only to Blom's (2006:136) "topological government" but also to the distinction between Diderichsen's two levels of analysis "topology" and "syntax", which Heltoft (1986a:121) describes as follows: "topological analysis (Where are which constituents placed?) and syntactic analysis (Which constituents may a sentence consist of and how may they be combined?)".

To see how this works in formal approaches, consider (25d), repeated below:

(27)    <u>Bilen</u>   har   han   faktisk   poleret   <u>   </u>   med ståluld
         *Car-the*   *has*   *he*   *actually*   *polished*      *with steel wool*

*Bilen* is in CP-spec (according to Diderichsen's "topology": it is placed in the foundation field) and it has left a trace in its base position, the object position (according to Diderichsen's "syntax": it is the object of *poleret*). This is yet another case of the different approaches arriving at similar insights, but formulating them in ways that do not make the parallelisms immediately evident.

# 7. Conclusion

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

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

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

All syntacticians, regardless of theoretical persuasion, are ultimately interested in explaining language data. Given the complex subject matter of the discipline, we need all the help we can get, and therefore none of us can afford to ignore the results reached within 'the opposite camp'.

We would like to emphasise that this does not mean that linguists should forget all the differences between the two approaches, but merely that they should not forget that in spite of such differences, there are areas where the two approaches can learn from each other and build on each others' insights.

At the end of the day, linguists from the two approaches will still set out in different directions when it comes searching for an explanation, and this is as it should be, given that "the growth of knowledge depends entirely upon disagreement" (Popper 1994:x).

This quote is further explained in Popper (1994:93-94): "Since the method of science is that of critical discussion, it is of great importance that the theories discussed should be tenaciously defended. For only in this way can we learn their real power. And only if criticism meets resistance can we learn the full force of a critical argument."

**Appendix.  Constructed or elicited examples as data**

Whereas formal linguists in general allow the use of constructed or elicited examples, not all functional linguists do, as seen in the following quote from de Beaugrande (1998:774):

(28) *Instead of painstakingly gathering corpuses of data in the field, you stay comfortably at home (or in your office) and rationalize about 'language' as represented by handfuls of data which you invent in your role as a 'native speaker', and which you analyze and describe in your role as a 'theoretical linguist'. The dualism of roles ensures that the native speaker (you) and the linguist (also you) reach the same conclusions without the slogging and protracted process of fieldwork constructing and testing hypotheses about a language you first have to learn*

(28) is part of a larger criticism of formal linguistics in general and of Chomsky in particular, and it should therefore be emphasised that it is actually not just formal syntacticians that use constructed examples. A great many functional syntacticians do the same, e.g. Diderichsen (1946) and Hansen (1977), to mention but a few.

In our view, it is actually not crucial whether or not an example is constructed, because, as formulated by Popper (1963:27), "there are no ultimate sources of knowledge". What is important is that based on relevant examples, empirical predictions are made as to what is well-formed and what is ill-formed, i.e. predictions that can be checked against the intuitions of other native speakers and against corpora, and which can be compared to grammatical descriptions of the language in question.

It is obvious and uncontroversial that data invented just 'for fun' (or for some other reason, e.g. laziness, as alleged by de Beaugrande in (28) above) would constitute a highly annoying waste of other researchers' time, but this danger exists with any kind of data, constructed or not. Whatever the origin of their data, linguists, like all other scientists, should feel strongly obliged to check them constantly and thoroughly.

One potential response to the real problems pointed out in by de Beaugrande in (28) above might be to say that linguists should only accept as data something which have actually been said (as advocated by e.g. de Beaugrande 1998 himself, but not by all functional linguists). This approach immediately runs into two classic problems, familiar to any linguist who has ever worked with a corpus of data:

(29) a.    data which should not occur, do occur

     b.    data which should occur, do not occur

Concerning (29a), data which should not occur, but nevertheless do: Various kinds of ill-formed sentences are uttered every day by native speakers. Consider e.g. the following two widely reported slips of the tongue produced by George W. Bush (in Florence, South Carolina, on 11.01.2000, and in Townsend, Tennessee, on 21.02.2001, respectively):

(30) a.    Rarely is the question asked: <u>Is</u> our <u>children</u> learning?

     b.    Teach a child to read, and he or <u>her</u> will be able to pass a literacy test

If linguists were not allowed to check examples with the intuitions of native speakers, they would have to set up grammars and dictionaries for English that allow for such examples, even though native speakers would agree that they are not well-formed (*children* may not be the subject of a verb in the singular, and *her* may not be a subject at all).

Concerning (29b), data which should occur, but nevertheless do not occur: Various kinds of well-formed sentences only occur extremely rarely. One example is the so-called "parasitic gap" construction (see e.g. Taraldsen 1981:491-495 and Engdahl 1986:130), where the initial element (the underlined *how many of the books* in (31)) seem to be linked to two different empty object positions (gaps). *How many of the books* in (31) is linked both to the empty object position in the main clause (the object position of *borrowed*) and to the empty object position in the embedded adverbial clause (the object position of *buying*). It turns out that the empty object position in the embedded clause (the object position of *buying*) is parasitic on the first one, i.e. it is only possible to have an empty object position in the embedded clause if the object position in the main clause is also empty, cf. that if the main clause object position is filled by a pronoun, then the embedded object position cannot be left empty either, (32), but has to be filled as well, (33):

(31) a.    <u>Hvor mange af bøgerne</u> har  du    lånt       ___ i stedet for at købe ___ ?

     b.    <u>How many of the books</u> have you  borrowed   ___ instead of buying   ___ ?

(32) a.    *Hvorfor    har   du    lånt       <u>dem</u>  i stedet for at købe     ___ ?

     b.    *Why       have  you   borrowed  <u>them</u> instead of buying      ___ ?

(33) a.  Hvorfor  har  du  lånt  <u>dem</u> i stedet for at købe  <u>dem</u> ?
     b.  Why  have you  borrowed  <u>them</u> instead of  buying  <u>them</u> ?

The point here is that if linguists' data sets consist only of utterances that have actually occurred, then it is fairly likely that constructions such as these would not be represented, and if linguists are not allowed to check with the intuitions of native speakers, they will have to set up grammars for Danish or English that do not allow for such sentences. This would then miss certain potentially crucial facts concerning Danish or English, given that native speakers agree that there is a significant difference in well-formedness between (31), which are possible, and (32), which are impossible.[11]

Returning to the de Beaugrande quote in (28) above, we are not saying here that constructed examples are any better than ones that have actually occurred, we are merely saying that constructed examples are a possible source of data, just like corpora are, and linguists cannot afford to disregard any type of data source. Notice also that neither constructed examples nor examples that have actually occurred are any good if they go against the intuitions of native speakers.

Furthermore, we agree that problems might occur if a linguist uses herself/himself as informant. However, these problems are particularly likely to arise if a linguist uses ONLY herself/himself as informant and no one else (i.e. the data should be checked and checked and checked again). As opposed to de Beaugrande in (28) above, we see no reason whatsoever to disqualify oneself as an informant (among others), nor do we see any reason for linguists to confine themselves to working only on languages that they are not native speakers of.

We are convinced that, everything else being equal, the group of linguists most suitable to work on a particular language is one that comprises both native speakers and non-native speakers of that language. On one hand every language has certain distinctions that are just so subtle that they are difficult for non-native speakers to be sensitive to, and on the other, non-native speakers often notice things which are taken to be trivial and hence uninteresting by the native speakers.

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[11] Chomsky (1982:39) uses data such as these to argue for innateness, i.e. to argue for the point that some of the grammatical knowledge of their native language that native speakers possess must be there from birth. Chomsky's argument goes as follows: Because this construction is so rare, the knowledge about the difference in grammaticality between (31) and (32) that all native speakers possess - even though most may not realise this - cannot stem from having heard the construction before. Then this knowledge would have to be derivable, or at least partly derivable, from the innate part of the linguistic knowledge of native speakers.

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