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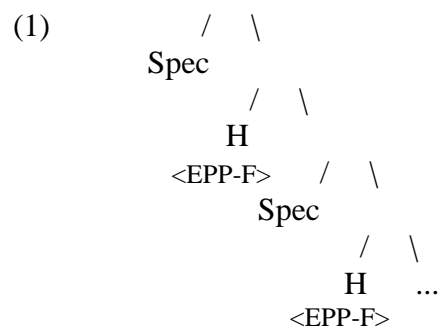tor.aafarli@hf.ntnu.no; kristin.eide@hf.ntnu.no

Predication at the Interface[1]

Abstract

We try to show that predication plays a greater role in syntax than commonly assumed. Specifically, we will argue that predication to a large extent determines both the phrase structure of clauses and trigger syntactic processes that take place in clauses. If we are on the right path, this implies that syntax is basically semantically driven, given that predication is semantically construed.

1   Introduction

We will start out with a recent Chomskyan idea, namely the assumption that the subject requirement or EPP triggers generalized movement to specifier positions (Chomsky 2000, 2001). Thus, in Chomsky´s newest version of the Minimalist checking theory all core functional projections in the structure of a clause have heads containing EPP-features, which then are the features that drive movement to the respective specifier positions, cf. (1).

```
(1)              /   \
          Spec
                  /  \
              H
         <EPP-F>    /   \
               Spec
                      /  \
                    H    ...
                 <EPP-F>
```

Notice that Chomsky construes the EPP-features as uninterpretable features that have no semantic import, i.e. the EPP-features are just abstract linguistic properties that trigger syntactic processes. However, uninterpretable features and checking theory generally have been criticized, in particular by Roberts & Roussou (1999). Among other things, Roberts and Roussou argue that checking theory "requires the introduction of features whose sole purpose is to be deleted", so that these features "are really only diacritics for movement" (op. cit.: 5). Roberts and Roussou do not find this satisfactory, especially not in a minimalist theory. Therefore, they call for a non-checking theory that contains only interpretable occurrences of features. In a similar vein, Chomsky seems to cast some doubt on his own notion of EPP-feature. Thus, he

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[1] This paper is a collocation of two papers. Sections 1-8 are written by the first author. Some of the ideas contained there have been presented at conferences or workshops in Belfast (January 2001), Changsha, China (June 2001), Trondheim (October 2001), and Oslo (November 2001). Thanks to the audiences for valuable feedback. Sections 9-15 are written by the second author. The ideas contained there are mainly adapted from the author´s recent doctoral dissertation (Eide 2001). The present joint paper is based on our joint presentation given at the Workshop on Syntax of Predication, ZAS Berlin in November 2001.
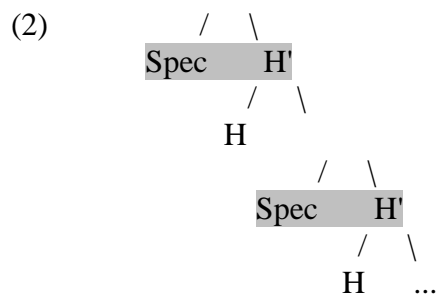
says that an EPP-feature is "an apparent imperfection, which we hope to show is not real by appeal to design specifications [...]"(Chomsky 2001: 40-41). In other words, he seems to suggest that EPP-features are non-primitive and that they should be reduced to more fundamental conditions.

What we will try to do in this paper, is to show that the EPP-features are not real by reducing them to the requirement that a propositional function, i.e. a predicate, must be saturated. In that way, we seek to reconstrue the effects of Chomsky´s "EPP-features" in terms of semantic saturation, i.e. by reducing their effects to conditions of the conceptual–intentional interface. Of course, the idea of reducing EPP effects to predication is not new, cf. e.g. Rothstein (1983), Chomsky (1986), or Heycock (1991). However, as will hopefully become clear in what follows, we will try to give this interesting idea a new twist.

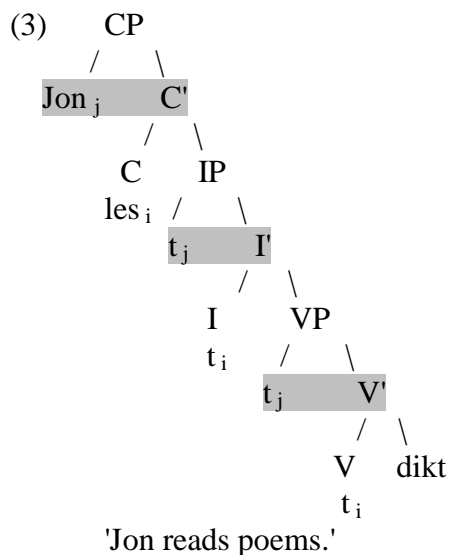## 2　　Layered predication and propositional skeletons

The first problem we are facing is to show how predication is able to do the job that EPP-features do in Chomsky´s analysis, notably to drive movement to the various specifier positions in the functional domain of the clause. In other words, we have to show that predication is not only restricted to the canonical subject–predicate relation of the clause, but that it is relevant at each phrase structural layer of the clause, like Chomsky´s EPP-features are.

Luckily, a relevant conception of predication is already at hand, namely the conception involved in the idea – extensively argued for in Heycock (1991) – that the phrase structure of a clause is divided into layers of predication, such that there is a predicational relation embodied in each of the projections that constitute the basic phrase structure of the clause. This is depicted in (2), where the shaded relation between Spec(ifier) and H' in each phrase structural layer is understood to be a predicational relation.

(2)
```
                /  \
          Spec      H'
                /  \
            H
                /  \
          Spec      H'
                /  \
            H     ...
```

Thus, Heycock claims that there is a predicational relationship not only in the basic clausal VP, as usually claimed, but in the IP layer and CP layer as well. This is depicted in the Norwegian V2-clause shown in (3), where the shading indicates the three subject–predicate relationships embodied in the clause, according to Heycock.[2]

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[2] Our example sentences will mainly be taken from Norwegian (our native language), even though conclusions hopefully will turn out to have general application.

```
(3)      CP
       /    \
   Jon_j    C'
          /   \
        C     IP
      les_i  /   \
           t_j    I'
                 /   \
               I      VP
             t_i    /    \
                  t_j     V'
                        /   \
                       V    dikt
                      t_i
```
'Jon reads poems.'

However, whereas Heycock takes predicational relations to be "read off" from syntactic structure, we will claim – assuming a more pronounced semantically based analysis than she does – that predication has a much more fundamental role to play in relation to syntactic structure. In fact, we will claim that our approach makes it possible to explain why the layered predicational relationships identified by Heycock should exist at all.

To be slightly more specific, we will argue that layers of predicational relations constitute the very backbone of a clause in the sense that, underlying any sentence or clause, there is an abstract semantic structure consisting of independently generated layers of propositional skeletons. Furthermore, we argue that movement, as well as insertion, are triggered by a requirement that the elements involved in these propositional skeletons need to be identified (or made visible).[3] In that way, the syntactic structure of the clause will be, to a considerable degree, explained by reference to the structure of predication.[4]

3   The elements involved in predication

The second problem we are facing is to try to find out more precisely what predication is and try to identify the elements involved in predication.[5] Heycock (1991: 14, 42-43), following Rothstein (1983), distinguishes between a semantic and a syntactic notion of predication. Consider the following passage from Heycock (1991: 43), where she refers to Rothstein´s theory.

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[3] See Vangsnes (1999) for a related notion of identification applied inside the DP. Also notice that, despite many differences, the overall separationist system proposed here is not unlike the separationist systems proposed in Distributed Morphology (insertion of Vocabulary Items in structures consisting of abstract "Morphemes", see Halle & Marantz 1993, Harley & Noyer 1999) or in Construction Grammar (constructions that exist independently of lexical items, see Goldberg 1995). On the other hand, it differs from Minimalist systems where syntactic representations are built "directly" by means of Merge and Move from an array of items taken from the lexicon, no separationism being implied.

[4] Interestingly, Chomsky (2000, 2001) assume that the derivation of a clause proceeds by phases and that phases are propositional, thus in effect adopting a notion of layered predication. Otherwise, however, Chomsky´s analysis differs from the one proposed here, and in particular the notions of proposition or predication do not seem to play any roles as explanatory notions for syntax in Chomsky´s theory.

[5] See Stalmaszczyk (1999) for a very useful overview of how the notion of predication has been understood and applied in generative grammar; also see Svenonius (1994).

(4)   [...] Rothstein claims that subject and predicate are basic *semantic* notions and
        that the subject–predicate relation "must be fundamental in a semantic relation" [...].
        Far more central to her analysis, however, is the proposal that there is an independent
        syntactic notion of subject–predicate [...].

The independent syntactic notion of predication mentioned here is also central to Heycock´s analysis, and it is the notion of predication that is relevant to her idea of layers of predication. However, in our view, a separate (primitive) syntactic notion of predication only bears a metaphorical relation to the corresponding semantic notion, and used for instance to account for the existence of expletive subjects (as Rothstein and Heycock do), it strictly speaking amounts to a *stipulation* that a syntactic predicate expression must have a syntactic subject.
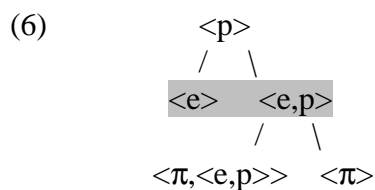
Therefore, to try to strengthen the explanatory power of the notion of predication, we want to reformulate the idea of layers of predication in terms of genuine semantic predication, so that the syntactic elements involved in predication, namely the syntactic predicate expression and the syntactic subject, are analysed as the direct expressions of the semantic elements involved, i.e. the semantic predicate and its predication subject.[6]

What are the basic semantic elements involved in predication? We have already said that a predicate is a propositional function. However, we will now take a further step. Specifically, we will follow Chierchia (1985) and Bowers (1993, 2001) in assuming that predicates are, in the prototypical cases, propositional functions that are formed from property expressions by means of a predication operator, shown in (5) (in Bowers´ 1993 notation).

(5) $\langle\pi, \langle e, p\rangle\rangle$

The predication operator is a function that takes the property element $\langle\pi\rangle$ and forms a propositional function $\langle e, p\rangle$, which in turn takes an entity $\langle e\rangle$ to form a proposition $\langle p\rangle$. According to this analysis, then, a property denoting element does not constitute a predicate on its own, but can be turned into one by means of a predication operator.[7]

The predication operator constitutes the kernel of a complex semantic operator structure that corresponds to a basic propositional skeleton, cf. (6).

(6) $\langle p\rangle$
                   /   \
          $\langle e\rangle$ $\langle e,p\rangle$
                        /   \
          $\langle\pi,\langle e,p\rangle\rangle$ $\langle\pi\rangle$
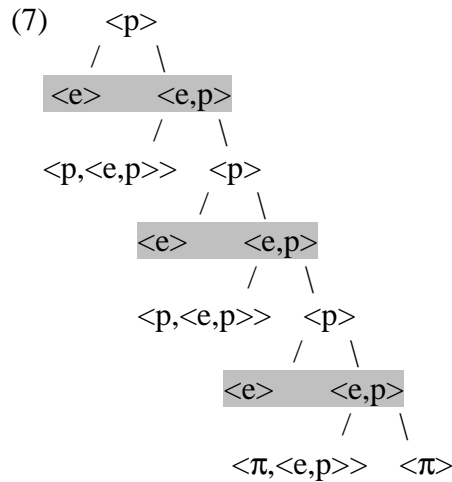
To incorporate this construal of predication into the idea of layered predication, we propose that there is a hierarchy of predication operators ($\langle\pi, \langle e, p\rangle\rangle$ and $\langle p,\langle e,p\rangle\rangle$) where the propositional skeleton produced by the lowest operator, is input to the next lowest operator, and

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[6] Our approach to the predicational syntax–semantics relationship is inspired by Bouchard (1995), who proposes a general principle to the effect that there is a homomorphous relationship between syntactic structure and semantic structure. The present paper develops an application to predication of this general principle that was tried out in Åfarli & Eide (2000).

[7] For instance, an attributive adjective is analyzed as a property denoting element that has not been turned into a predicate (it functions as a modifier), whereas a predicative adjective is analyzed as a property denoting element that has been turned into a predicate by means of a predication operator (the predicate must in turn be saturated to express a proposition), cf. Eide & Åfarli (1999b: 157-159). Notice that the idea that a predicate, i.e. a propositional function, is made from a property element by means of an operator, has some precedents in the philosophy of language, notably Strawson (1974) and Wiggins (1984).

so on.[8] This hierarchical "chaining" of predication operators results in a complex structure of propositional skeletons, as indicated in (7).

(7)
```
        <p>
       /   \
   <e>      <e,p>
           /    \
   <p,<e,p>>    <p>
               /   \
           <e>      <e,p>
                   /    \
           <p,<e,p>>    <p>
                       /   \
                   <e>      <e,p>
                           /    \
                   <π,<e,p>>    <π>
```

In other words, (7) is a complex structure of layered propositional skeletons, which is the kind of object that constitutes the semantic backbone of a clause according to our proposal.

4   Evidence: Binary branching phrase structure

Assuming the underlying semantic structure in (7), the *syntactic* structure of the clause may now be seen as the structural expression of functional application. For instance, in the most deeply embedded propositional skeleton in (7), the predication operator first takes the property element and builds a propositional function element, corresponding to an intermediate phrase consisting of a head and its complement. This is shown in (8).

(8)
```
          <e,p>                           H'
         /    \          <=>             /  \
  <π,<e,p>>   <π>                       H    XP
```
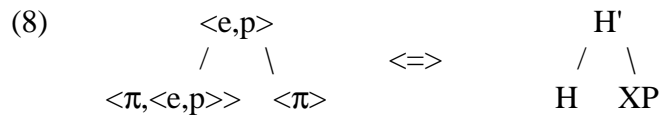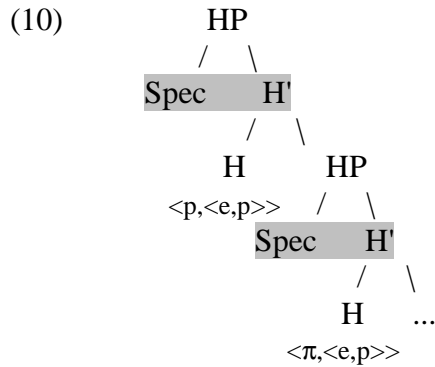
Next, the propositional function displayed as the intermediate phrase takes an entity element, corresponding to a specifier, and yields a propositional element, corresponding to the maximal phrase. This is shown in (9).

(9)
```
          <p>                            HP
         /   \          <=>             /  \
      <e>   <e,p>                    Spec   H'
```
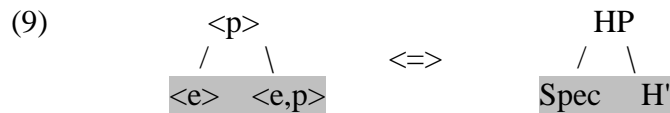
This process can be repeated to yield a structure like (10) (where the only semantic elements shown are the two predication operators corresponding to the two syntactic heads).

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[8] Notice that the lowest predication operator takes a property element (<π>) as input, whereas higher predication operators (typically) take a propositional element (<p>) as input.

(10)

```
                    HP
                   /  \
            Spec      H'
                    /  \
                  H      HP
            <p,<e,p>>   /  \
                   Spec     H'
                          /  \
                        H     ...
                    <π,<e,p>>
```

It can now be seen how an operator structure like (7) constitutes a semantic backbone for the syntactic representation of a clause like e.g. (3). Moreover, the basic phrase structure of the clause is now *explained* as the direct expression of the functional organization of the semantic elements involved in the operator structure. In particular, observe that functional application induces binary branching, which is otherwise motivated on independent grounds (Kayne 1984: IX-XIV). Therefore, on the analysis proposed here, binary branching phrase structure must be seen as a syntactic effect of predication, and to the extent that binary branching is independently motivated, its existence may be taken as support for the predication-based explanation pursued here.

To end this section, notice that an operator structure like (7) is a very rudimentary semantic structure. However, a "full" syntactic or syntactico-semantic structure of a clause is construed after an operator structure is identified by (grammatical or lexical) elements from the mental lexicon, which come with their own inherent morpho-syntactico-semantic properties, which then *enrich* the operator structure by adding syntactico-semantic substance to it. In other words, the elements from the lexicon *simultaneously identify and enrich* the elements of the underlying operator structure. This view of the syntactico-semantic composition of the clause will become particularly important in section 7 where the idea that rudimentary operator structures are a type of "pro forma" structures is exploited to give a semantically based explanation of the subject requirement (EPP).

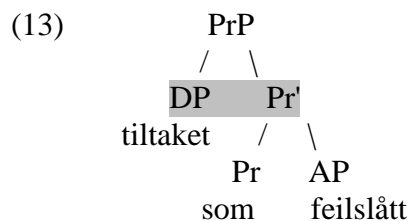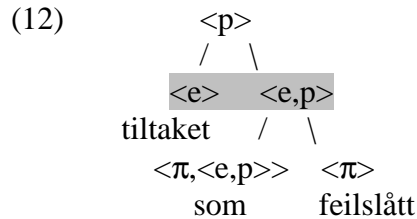## 5   Evidence: The existence of predication particles

One small, but quite striking piece of evidence that clausal structures are the direct expression of underlying operator structures like (6), and in particular that predication is mediated by a predication operator, comes from the existence of predication particles in non-verbal secondary predication. To our knowledge, this point was first made in Bowers (1993: 596-597) to explain the occurrence of the particle *as* in certain small clause complements in English.

To illustrate, consider examples like the following from Norwegian, discussed in Eide (1998) and Eide & Åfarli (1999a, b).

(11)   a. Jon vurderer [tiltaket *(**som**) feilslått]
              Jon consider enterprise-the as unsuccessful
              'Jon considers the enterprise unsuccessful.'
          b. Skjebnen gjorde [Per *(**til**) taxisjåfør]
              destiny-the made Per to taxi-driver
   'Destiny made Per a taxi driver.'

The bracketed small clauses in (11) contain an obligatory predication particle, *som* 'as' in (11a) and *til* 'to' in (11b). The presence of such a particle strongly indicates that there is more

to predication than the two elements assumed traditionally, i.e. the property phrase and its subject. On the analysis proposed here, the third element identified by the predication particle is the predication operator of a propositional skeleton like (6). For instance, the small clause part of (11a) identifies the operator structure in (12), which corresponds to the syntactic representation in (13)

(12)
```
              <p>
             /   \
          <e>    <e,p>
      tiltaket   /   \
          <π,<e,p>>   <π>
              som    feilslått
```

(13)
```
              PrP
             /   \
          DP      Pr'
      tiltaket   /  \
              Pr    AP
              som   feilslått
```

The label Pr used in (13) is proposed in Bowers (1993: 595), where it stands for "Predication", i.e. the *syntactic* category corresponding to the predication operator. We adopt Bowers' general understanding of this category here, although we do not adopt every detail of his analysis of clause structure, as made clear in footnote 12 below.[9]

Another possibility for the identification of the predication operator in a propositional skeleton like (6) seems to be by means of the copula (cf. Eide 1998, Eide & Åfarli 1999a, b). We assume that the copula is a light verb belonging to the category Pr.[10] Thus, we claim that (14) is a possible syntactic representations corresponding to the basic operator structure (functional projections above PrP are not shown).

(14)   ... [PrP tiltaket [Pr' [Pr er] [AP feilslått]]]
              enterprise-the is unsuccessful
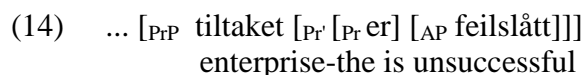
To conclude this section, the small clause complements in (11) and the copula case in (14) constitute strong evidence that there is a third element involved in predication, which on our analysis corresponds to the predication operator. Thus, the data presented here provide further evidence for the existence of the underlying operator structure.

6   Evidence: The two-layered structure of the verb phrase

As pointed out above, the construal of a predicate from a property element by means of a predication operator implies that *two* "terminal" semantic elements are required to constitute a

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[9] See Eide (1998) and Eide & Åfarli (1999a, b) for further discussion of predication particles in Norwegian. Also see Bailyn (1995) on the predication particle *kak* in Russian and Flaate (1998) on the predication particle *als* in German. Notice that the predication operator of small clauses is phonetically realized by a predication particle only in certain circumstances; in Norwegian roughly in cases where its property element is identified by a nominal phrase or where the small claus is embedded under certain verbs. In other cases, the operator is not directly identified by insertion (or movement), even though it is part of the underlying representation, see Eide & Åfarli (1999b) for discussion.
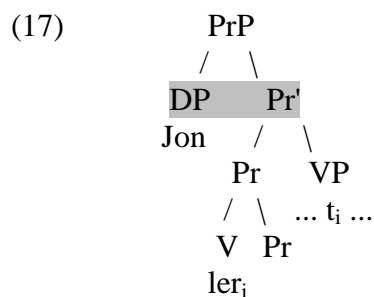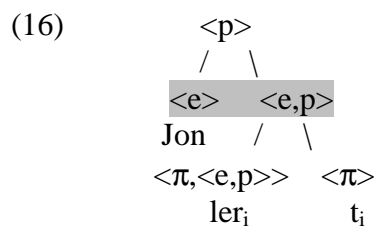
[10] Notice that Bowers (1993) does *not* count the copula as an instantiation of Pr.

predicate, namely the operator element and the property (or content) element. Consequently, on our analysis, it is expected that both these elements have a correlate in the structure of any clause expressing a proposition. As we have already seen, there are in principle two ways of identifying the two "terminal" semantic elements that constitute the predicate. The first possibility is that they are identified by insertion of separate items, as seen with predication particles and property phrases. The other possibility is identification by movement, as seen with verb movement in (3), where the verb first identifies the lower predication operator by insertion and then identifies the two higher predication operators by movement.

Intuitively, a main verb typically plays a double role. It seems to bring about the predication, but it also has a lexical content of its own. Therefore, we would like to propose, following Bowers (1993: 599-600), that a main verb first identifies the property element by insertion, and that it is then obligatorily raised to identify the operator element. Thus, in the case of ordinary main verbs, the double role played by the verb is that it first identifies the property $\langle\pi\rangle$ and then raises to identify the predication operator $\langle\pi,\langle e,p\rangle\rangle$. This correctly implies that a main verb can either be understood as denoting a property or as denoting a propositional function. It also implies that the old style VP, e.g. as used in (3), is now divided into a PrP and a complement (new style) VP.

To illustrate, consider (15), which has the semantic structure in (16) and the corresponding syntactic structure in (17). [11]

(15)   Jon ler.
        'Jon laughs.'

(16) $\langle p\rangle$
               /   \
           $\langle e\rangle$ $\langle e,p\rangle$
           Jon   / \
        $\langle\pi,\langle e,p\rangle\rangle$ $\langle\pi\rangle$
            ler_i t_i

(17)   PrP
               /   \
           DP   Pr'
           Jon   /   \
                Pr   VP
               / \   ... t_i ...
              V   Pr
            ler_i

Notice that the analysis of verb phrases with transitive verbs is slightly more complex, cf. (18).[12]

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[11] We are not concerned with the technicalities of identification in this paper, but for expository reasons one could adopt the mechanics of incorporation suggested in Rizzi & Roberts (1996: 106). In our terms that would amount to a suggestion that the element to be identified is subcategorized for an item that identifies it, i.e. that the element to be identified specifies a slot for the identifier.

[12] The analysis of the verb phrase given here is different from the analysis given in Eide & Åfarli (1999b) in important respects. There it was proposed that the operator and the property element are chunked together in one syntactic projection in the case of main verbs. Here we adopt an analysis that is more similar to the one originally proposed in Bowers (1993). However, there is still one important difference as regrads the analysis of transitive verb phrases. Whereas Bowers analyzes the direct object as the specifier of VP, it is analyzed as the complement of VP here, cf. (18b). The latter analysis is argued for in Eide & Åfarli (1999b: 171-176) and we

(18)   a. Jon les dikt.
          'Jon reads poems.'
        b. ...[$_{PrP}$ Jon [$_{Pr'}$ les$_i$ +Pr [$_{VP}$ t$_i$ dikt]]]
             Jon   reads   poems

Here the verb phrase *les dikt* 'reads poetry' identifies a complex property. Thus, in this instance the property element <π> of the operator structure has the internal composition shown in (19) (it must be compatible with the lexical-conceptual properties of the transitive verb), and the operator structure underlying (18) is (20).

(19)   ... [$_{<π>}$<e,π> [<e>]],

(20)   ... [$_{<p>}$<e> [$_{<e,p>}$<π,<e,p>> [$_{<π>}$<e,π> [<e>]]]]
             Jon   les $_i$ t $_i$ dikt
             Jon   reads   poems

To conclude, an important effect of predication is the division of the verb phrase into a predicational part proper and a property or content part, corresponding to PrP and VP, respectively. This is in accordance with the independently motivated claims of several linguists during the last ten years to the effect that the verb phrase should be divided into an abstract "light" verb and the main verb, see e.g. Hale & Keyser (1993), Kratzer (1993), Harley (1995), Chomsky (1995a), Collins (1997). Although terminology and particular analyses vary, we take it that the general thrust of these analyses supports the present analysis of the verb phrase into a PrP-part and a VP-part. Accordingly, we will from now on use the structure CP–IP–PrP–VP in our exposition of basic clause structure.

Given a CP–IP–PrP–VP structure, in main clauses in a V2-language like e.g. Norwegian, V raises first from V to Pr, and further from Pr to I and from I to C, the successive movement operations being triggered by the requirement that the predication operators be identified. Thus, in a V2 clause the same verb identifies (at least) three predication operators.[13]

7   Evidence: The existence of the subject requirement

Perhaps the strongest evidence for the existence of an underlying operator structure is that it facilitates an explanation of the subject requirement. In this section, we will try to explain how.

Notice first that Rothstein´s and Heycock´s main motivation for adopting a purely syntactic notion of predication that is independent of Theta-role assignment is the existence of expletive subjects (Heycock 1991: 32), as e.g. exemplified in the Norwegian presentational construction in (21).

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still see that argument as valid. We take this opportunity to rectify a terminological inadvertence in Eide & Åfarli (1999b: 172): the appeal to the Left Branch Constraint should preferably be replaced by an appeal to Kayne (1984: 165 ff.) or to a generalized version of the Subject Condition.

[13] If C in declarative main clauses contains a predication operator, non-V2-languages pose an obvious problem, given that they have an empty C. Generally, the precise principles that govern identification are not investigated in this paper, but we have seen that although identification by insertion or movement certainly is the general tendency, there are special cases where an element of the underlying operator structure is not directly identified. Naturally, an analysis of identification of C in V2- vs. non-V2-languages raises the problem of the role of parametrization in identification. Discussion of issues concerning this particular problem belong to future research, but see the brief discussion of parametrization toward the end of section 7.

(21)   **Det** står gjenferd bak mange dører
         it stand ghosts behind many doors
         'Ghosts stand behind many doors.'

Since expletive subjects are semantically empty, they cannot act as the predication subject that a predicate "is about". Hence, the need for a purely *syntactic* function to explain the existence of expletive subjects according to Rothstein and Heycock. But now the question is: Since we have abandoned the syntactic notion of predication and substituted it with the semantic notion of a propositional function, how is the existence of expletive subjects explained?

This crucial problem was discussed in Åfarli & Eide (2000: 35-37), and therefore we will not go fully into it here. However, the essential idea proposed there was that the predication operator should be seen as a proposition building device that happens to open an argument position, rather than a device that yields a predicate that necessarily bears some kind of inherent "aboutness-relation" to a subject. Thus, the perspective is shifted from the traditional view that a predicate ascribes some property to a subject, to a view whereby the formation of a predicate is seen as a necessary step in order to form a proposition. One important consequence of this shift, we claim, is that a propositional function does *not* require a referential subject. The predication operator and its propositional function have performed their semantic task of building a proposition when their associated entity element is identified by a morpho-syntactic item, *whether or not* that item is also enriched by semantic Theta-role substance, as it were. Thus, the possibility that there should exist a substantive Theta-relation between the subject and its predicate is *not* essential for predication, but should rather be seen as an extra.[14] In other words, a clause with an expletive subject is explained in terms of (semantic) predication just as well as clauses with referential Theta-subjects are.

One could object against this analysis that the entity element corresponding to the subject could not possibly be semantically empty (as it apparently would have to be in those cases where it is instantiated by an expletive subject), since that is at odds with the way the notion of an entity element is used in semantic type theory. However, recall from the end of section 4 that the (uninstantiated) operator structure is a type of "pro forma" structure, i.e. a structure "provided in advance to prescribe form", according to one of the definitions of "pro forma" given in the 10th edition of Merriam-Webster's Collegiate Dictionary. The actual instantiation of the entity element in a given case will determine the resulting interpretation as referential (true "entity") or not. Thus, in cases where <e> is instantiated by an expletive subject, presumably a kind of type-shifting or type-specification takes place, from a pro forma entity to what could be called a pseudo-entity. This is not surprising, given our approach, since identification, i.e. instantiation, of the elements of the operator structure as a rule implies semantic enrichment, and therefore leads to a shift in, or rather a specification of the

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[14] This is quite strikingly indicated by certain homophonous verb pairs where one member of the pair is an impersonal presentational verb that does *not* assign any external role, whereas the other member is an ordinary transtive-causative verb that assigns an external role. This is the case with for instance *rulle* 'roll' in Norwegian. Thus, (i) is ambiguous between interpreting *det* 'it' as a referential personal pronoun or as an expletive pronoun, the expletive subject *det* being homonymous with the corresponding referential personal pronoun.
(i)   Det rulla ein stein nedover bakken
         it rolled a stone down slope-the
         (a) 'It (e.g. the child) rolled a stone down the slope.'
         (b) 'There rolled a stone down the slope.'
The operator structure and syntactic structure corresponding to these two interpretations are identical, except that the subject is enriched by an external Theta role in (ia), but not in (ib), leaving an expletive subject in the latter case.
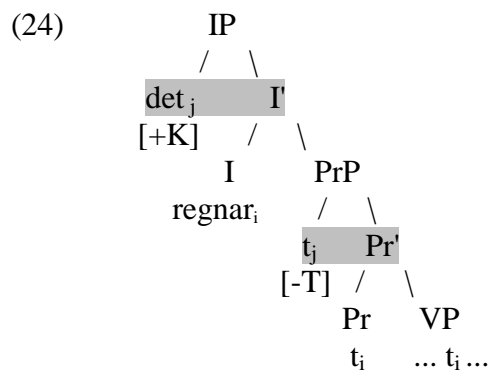
interpretation in relation to the rudimentary operator structure, which only indicates a proto-typical interpretation.

Now, an important aspect of the predicational analysis of the subject requirement (not discussed in Åfarli & Eide 2000), is the assumption that predication does not *license* a subject in the sense that the entity element that saturates the propositional function is *sufficient* for providing a syntactic subject. We will rather claim that predication triggers the *requirement* that the clause must have a subject. It depends on additional language specific principles how or whether a required subject is actually licensed. So, what licenses subjects? Here we take a fairly traditional view (that might need refinements): Subjects are licensed by Theta-role (T) and/or (abstract) Case (K). An external Theta-role is assigned to <Spec, PrP>, depending on the verb raised to Pr, and Case is assigned to <Spec, IP>, depending on the finite nature of I.[15] Thus, we propose that the existence of subjects is a result of the interplay between the requirements of the operator structure and the relevant morpho-syntactico-semantic principles of the given language.

Motivation for this proposal comes from contrasts like those in (22) vs. (23), where the b-versions are English translations of the Norwegian a-versions; the Δs in (23) indicate putative underlying subjects.

(22)   a. Det er fint [at **det** regnar]
        b. It is nice [that **it** rains]
(23)   a. *Det er fint [Δ å regne]
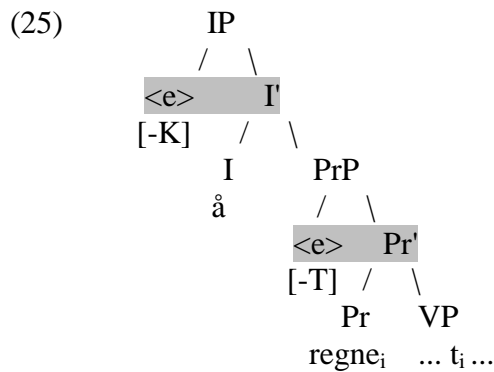   b. *It is nice [Δ to rain]

(22a, b) show grammatical post-adjectival finite clauses (in brackets) with entity elements identified by expletive subjects. Here the subject required by the entity elements in the relevant Specifier positions are licensed by Case. To illustrate, consider the representation of the relevant part of (22a), given in (24):

(24)   IP
               /   \
         det$_j$ I'
         [+K]   /   \
               I   PrP
           regnar$_i$ /   \
                     t$_j$ Pr'
                    [-T] /   \
                        Pr   VP
                        t$_i$ ... t$_i$ ...

The embedded subject *det* 'it' is only licensed by being assigned Case (the embedded I is finite), and therefore the subject is licensed as an expletive subject.

In contrast, (23a, b), with *non-finite* post-adjectival clauses, are ungrammatical. We suggest that the reason for the ungrammaticality is that the (subject) entity elements provided by the embedded predication operators fail to be properly identified, because a subject cannot be licensed in these positions, see (25).

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[15] It is not required that the licensing Theta-role is actually assigned by the verb raised to Pr, cf. structures of the type *det er bra [PRO$_i$ å bli sett t$_i$]* 'it is good to be seen', where PRO´s Theta-role is assigned by the participle. Still, PRO thematically identifies the entity element in the subject position.

(25)

```
                IP
               /  \
            <e>    I'
            [-K]  / \
                 I   PrP
                 å   / \
                  <e>   Pr'
                  [-T] / \
                     Pr   VP
                   regneᵢ ... tᵢ ...
```

That is, the entity elements provided by the operators trigger the subject requirement, but the actual licensing of a subject cannot be accomplished since neither Case nor Theta-role is assigned. Hence the ungrammaticality. [16]

As far as we know, the analysis suggested above provides underpinnings for the subject requirement/EPP that previous analyses have failed to do. Whereas previous analyses have specified the principles that license subjects, including expletive subjects, it seems to us that they have failed to explain why there should be a subject requirement in the first place. What the assumption of the underlying operator structure does, is precisely to explain just that, namely why there is a subject requirement in the first place. We consider this an important independent motivation for the operator structure. Thus, even though subjects may be licensed by different principles in different languages, the subject requirement itself and therefore the existence of subjects, notably the existence of expletive subjects, is derived from the semantic notion of predication on our analysis.

Notice that the analysis proposed here does *not* exclude the possibility of expletive null-subjects in languages like Icelandic and German, which could otherwise be seen as a problem (also cf. Heycock 1991: 50-57). Consider the German example in (26) (from Safir 1985).

(26)   a. Er sagte [dass getanzt wurde]
              he said that danced was
         b. *Er sagte [dass **es** getanzt wurde]
              he said that it danced was

According to our analysis, it is not possible to assume that the complement of the complementizer in (26a) is a bare verb phrase. In fact, on our analysis the embedded clause in (26a) contains two predication operators (corresponding to Pr and I), and therefore the embedded

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[16] Notice that the expletive subject in (22a)/(24) is inserted in <Spec, PrP> first, identifying the entity element there. Then it is raised to <Spec, IP>, identifying the next entity element. This raising is forced since the expletive subject cannot be licensed in <Spec, PrP>, being devoid of a Theta-role. However, raising provides licensing for the <Spec, PrP> subject via the chain to the licensed raised subject in <Spec, IP>. (Independent motivation for the assumption that expletive subjects are not directly generated in IP, but lower down in the basic nexus is given in Åfarli & Eide 2000: 40-45.) Similar reasoning explains the contrast between (i) and (ii) (=(23a)).
(i)   Det begynte å regne.
            it began to rain
(ii)   *Det er fint å regne.
            it is nice to rain
In the raising structure (i), the expletive subject of the matrix verb is raised from the embedded subject position, thus identifying the entity elements corresponding to both the matrix and embedded subject. On the other hand, a similar raising is not possible in (ii), since the post-adjectival clause is not in the complement position (cf. Åfarli & Lutnæs 2001). Therefore, since the embedded subject is not identified, the clause is ungrammatical.

clause also contains corresponding entity elements that must be identified. (Safir – within his framework – reaches a similar conclusion, namely that embedded clauses like the one in the grammatical (26a) contains a covert subject position.)

However, thematic identification of the entity elements that exist in the embedded clause of (26a) is of course impossible since the external Theta-role is suppressed, *getanzt* being a passive verb. Also, as indicated in (26b), the relevant entity elements in <Spec, PrP> and <Spec, IP> are apparently not phonologically identified, as indicated by the exclusion of an overt expletive subject. Therefore, according to our analysis, it seems that (26a) should have been ungrammatical for the same reason as e.g. (23a, b) are.

Interestingly, Safir notices that a sentence corresponding to (26a) with a non-finite complement clause, is in fact *not* grammatical, as expected, see (27).

(27)   *Es ist möglich, [getanzt zu werden]
            it is possible danced to be

Safir explains this difference by assuming that there exists in German an expletive pronoun that is not phonologically realized, but that nevertheless must be assigned Nominative Case. He proposes the parameterized principle given in (28).

(28)   Nom Case must be phonetically realized where it is assigned.

According to Safir, Mainland Scandinavian and English has a positive value for this parameter, whereas German has a negative value, i.e. in German Nominative Case is not necessarily phonologically realized.

In our terms, the parameterized principle in (28) suggests that there are two components involved in Case licensing of the subject in a finite clause: The first and obligatory component is Nominative Case assignment. The parametrization concerns to what extent Nominative Case assignment also implies phonetic visibility, or whether Nominative Case assignment alone is sufficient for licensing. The latter is the case in German, which then allows (and requires) an expletive pro subject in (26a), whereas no subject can be licensed in (27).

Given Safir´s parametrized principle (28), we conclude that the German data do not pose a problem for our analysis; they just illustrate a type of licensing of subjects partly different from the type found in Mainland Scandinavian or English.[17]

8   Evidence: The existence of "outer" expletives

Consider now the <Spec, CP> position. According to our analysis, C is headed by a predication operator, at least in main clauses of the V2-type.[18] That means that the relation between C' and <Spec, CP> is a predicational relation. This is also what Heycock claims, and it is hinted at in Rizzi (1997: 286), where it is suggested that there is a kind of higher predication "within the Comp system".

In declarative main clauses, a topicalized constituent identifies the entity element in <Spec, CP>. Now, one might imagine that topicalization is triggered only for semantic-pragmatic reasons, i.e. to provide a given sentence with a topic. However, if the predicational

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[17] An obvious topic for future research is to investigate to what extent the detailed analyses of subject licensing found in works like Rizzi (1986) or Vikner (1995) can be integrated in the approach pursued here.

[18] As for embedded adverbial and nominal clauses introduced by a complementizer, we assume that the complementizer identify a non-predicational operator. The same might be the case with main clauses of the V1-type.

analysis is on the right track, topicalization is basically triggered for "formal" reasons, namely by the requirement that the entity element in <Spec, CP> be identified (even though the resulting structure gets a particular semantic-pragmatic interpretation in the end).

Now, the test case for the hypothesis that the Comp system contains a predication operator and a corresponding entity element, is whether expletive elements are ever situated in <Spec, CP>. Since an expletive pronoun cannot act as a topic (in a semantic-pragmatic sense), the occurrence of an expletive pronoun in <Spec, CP> suggests that there is more to this position than providing an optional landing site for phrases that are selected as topics for semantic-pragmatic reasons. On our analysis, this "more" is provided by the entity element of the predication operator in the CP-layer, which must be identified, just like entity elements provided by the lower predication operators in IP and PrP.

The occurrence of expletive pronouns in <Spec, CP> is in fact very common. For instance, subject expletives are often raised to <Spec, CP>, e.g. in an example like (21), resulting in a partial structure like (29).

(29)
```
            CP
           /  \
        det_i   C'
               /  \
              C    t_i ...
```
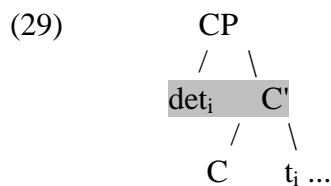
Also, it is a well-known fact that certain languages like German, Icelandic and Yiddish allow expletive pronouns to be directly generated in <Spec, CP>, cf. (30)-(31) (data from Vikner 1995).

(30)   a. **Es** ist ein Junge gekommen   (German)
            there is a boy   come
        b. **fia›** hefur komi› strákur   (Icelandic)
            there has   come   boy
        c. **Es** iz gekumen a yingl   (Yiddish)
            there is come a boy

(31)   a. Gestern ist (***es**) ein Junge gekommen   (German)
            yesterday is there a boy   come
        b. I gær   hefur (***fla›**) komi› strákur   (Icelandic)
            yesterday has there come boy
        c. Nekhtn iz (***es**) gekumen a yingl   (Yiddish)
            yesterday is there come a boy

Structure of (30a):

(32)
```
            CP
           /  \
         es     C'
               /  \
              C    ein Junge gekommen
             ist
```
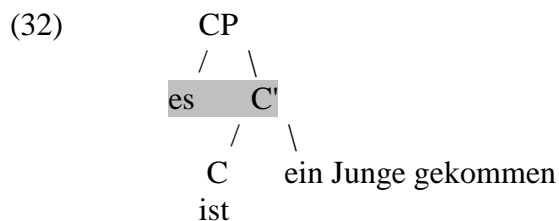
The fact that expletives may be moved to or inserted in <Spec, CP>, as just illustrated, clearly supports the thesis that there is a predicational CP-layer, as we have been propsing.

One might wonder why only subjects, i.e. nominal phrases, are allowed in the specifier positions of the PrP/IP-system, whereas virtually any type of phrasal constituent is allowed in the specifier position of CP. To explain this, we will take our cue from Rizzi (1997: 286) where it is proposed that the predicational nature of the CP-system is due to a Topic-feature. Exploiting that idea, we suggest that C contains a Top property, so that CP is the co-projection of C and Top (Brandner 2001). Furthermore, we assume that Top in C licenses the element that is moved to <Spec, CP> to identify the entity element. Thus, Top assigns a licensing property L in a parallel fashion to the way that tense in I assigns the licensing property Case. However, whereas Agr in I requires that the <Spec, IP> is nominal, no such requirement applies to <Spec, CP>. Therefore, any phrasal category can identify the entity element of CP, i.e. any category can be topicalized.

We conclude that our claim concerning the predicational nature of the CP has been supported. In other words, the existence of "outer" expletives, which are either moved to or inserted in <Spec, CP>, provide yet a kind of syntactic effect of predication that in turn supports the thesis that the clause consists of layers of predicational relations.

9 The thematic properties of the subject and the predicator

Now, consider again the subject–predicate relation, cf. section 7. As pointed out by numerous authors, the existence of a subject–predicate relation is in part independent of thematic saturation; hence, predication is independent of the thematic properties of the subject and the predicate, respectively. We want to address and refine this claim in the following sections.

First of all, the possible combinations of thematic vs. non-thematic properties of the subject and the predicator could be displayed in a table like the following, where the relevant thematic property of the predicator is that of assigning an external theta-role:

(33)

	Thematic subject	Non-thematic subject
Thematic predicator	"Substantive predication"	Non-existent
Non-thematic predicator	"Substantive predication"	"Pseudo-predication"

Note that the term *predicator* is taken here to designate an item which is inserted in or moved to a head position containing a predication operator, e.g. Pr^0, I^0 or C^0. The combination of a thematic predicator with a thematic subject gives rise to a substantive predication relation which simultaneously is a thematic relation, exemplified by (34 a). The combination of a non-thematic predicator with a thematic subject amounts to a raising construction, where the thematic subject is assigned a theta-role at some point in the derivation prior to its raising into the subject position of the non-thematic predicator (cf. 34 b). Even this combination, though, gives rise to what we refer to as a substantive predication relation. Next, a predicator which obligatorily assings an external theta-role demands a thematic subject, hence the combination of a thematic predicator with a non-thematic subject is ungrammatical. And finally, the combination of a non-thematic predicator with a non-thematic subject may be exemplified by a construction like (34 c) or a weather-construction as in (34 d).

(34) a. Nordmenn spiser mye poteter.
         'Norwegians eat a lot of potatoes.'
      b. Nordmenn ser ut til . spise mye poteter.
         'Norwegians seem to eat a lot of potatoes.'
      c. Det ser ut til at Nordmenn spiser mye poteter.
         'It seems that Norwegians eat a lot of potatoes.'
      d. Det regner.
         'It rains.'

The sentences in (34 c) and (34 d) exemplify what we want to dub a "pseudo-predication". This relation is a predication relation by virtue of its instantiating and identifying a saturated predication operator structure in the system outlined here. However, we recongnize the possible objections to the claim that this is an instantiation of "predication proper", as pointed out by numerous authors and exemplified here by Fukui (1986):

> It can hardly be claimed that there is a predicational relation in any normal intuitive sense involved between these pleonastic elements and the predicate phrase.

We meet these objections by referring to the relevant relation as "pseudo-predication". Thus, a pseudo-predication ensues whenever the entity element required to saturate the predication operator is identified by an expletive subject, i.e. whenever it does not encode an "aboutness-relation". On the other hand, a thematic subject gives rise to a substantive predication relation (an "aboutness-relation"), regardless of the thematic properties of the predicator.

In what follows, we will focus on predication in raising constructions, i.e. the relation between a raised thematic subject and what is conceived as a non-thematic predicator.

10   Raising constructions and subject scope

It is well known that raising constructions employing a raised thematic subject give rise to scopal ambiguity w.r.t. the relative scope of the subject and the matrix predicate, cf. the two possible readings of (35):

(35)   Nobody seems to have left.
        I. There is no person x such that x seems to have left.
        II. It seems that no person x has left.

This ambiguity arises in raising constructions with a raised thematic subject only, as the corresponding constructions with expletive subjects give rise to a non-ambiguous wide-scope reading of the matrix predicate:

(36)   It seems that nobody has left.

Furthermore, it has often been claimed that subject-scope ambiguities do not arise in control structures, i.e. constructions where the matrix predicate obligatorily assigns an external theta-role. This claim is illustrated with examples like the following (Hornstein 1998:109): [19]

(37)   a. Someone seems to be reviewing every report.
        b. Someone hoped to review every report.

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[19] Hornstein ascribes these observations to Burzio (1986).

Hornstein claims that whereas (37 a) is ambiguous w.r.t. the relative scope of *someone* and *every report,* (37 b) requires *someone* to scope over *every report.* However, Horstein admits (p.c.) that there exists a range of control structures where we find scopal ambiguities between the quantified phrases *some* and *every,* just like in raising constructions. Cf. for instance the following data:

(38)   a. Someone tried to review every report. (some > every/ every > some)
       b. Somone decided to review every report. (some> every/ every > some)

That is, these control structures allow for an interpretation where for every report, someone tried/decided to review it.

  Although we object to the claim that the relative scope between quantified phrases like *some* and *every* is ambiguous in raising constructions and unambiguous in control structures (since, as shown, even control structures give rise to this ambiguity), we recognize that there exists a scopal ambiguity between a raised thematic subject and the matrix predicate in raising structures which does not exist in control structures; cf. the following contrast:

(39)   a. Nobody seems to have left.
       b. Nobody tried to leave.

The control structure in (39 b) does not allow for a reading where the subject is given narrow scope w.r.t. the matrix verb, unlike (39 a); cf. (35) above. That is, control structures do not allow for their subjects to scope under the matrix predicate, whereas raising structures allow for a narrow-scope as well as a wide-scope construal of the subject w.r.t. the matrix predicate.

11   Subject scope and the predication relation

This contrast between control structures and raising constructions has been implemented in a number of approaches; cf. e.g. May (1977, 1985), Bobaljik (1998), Sauerland (1998) among many others. It has been argued by many authors that the contrast between raising structures and control structures as regards possible subject scope is due to an availability of a lower position for the subject at LF in raising constructions but not in control constructions. The following illustration is adopted from Wurmbrand (1999):

(40)   a.   **Control**   b. **Raising**

SCOPE: SUBJ > VERB   SUBJ > VERB > SUBJ

17
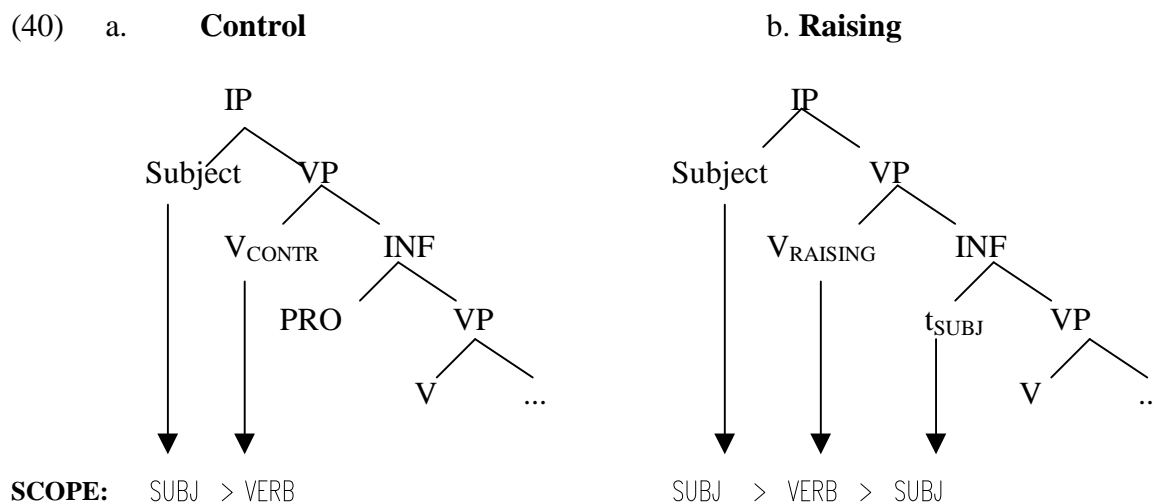
Assigning narrow scope to the subject in a raising construction is often referred to as "lowering" of the subject. Now, an intriguing question is whether or not "lowering" of the subject affects the (potential) *predication* relation between the subject and the matrix predicate in any significant way.

It has been claimed that a wide-scope versus narrow-scope reading of the subject in raising constructions correlates with the presence versus absence of a predication relation between this subject and the matrix verb, cf. e.g. Zubizarreta (1982), who provides the following data.

(41)   a. Nobody seems to have left but somebody seems to have left.
        b. (∀x (x does not seem to have left)) but (seems (∃x (x have left)))

Zubizarreta claims that (41 a) could be construed as non-contradictory, e.g. on the interpretation specified in (41 b). The reason for the lack of contradiction, she continues, is that in the first part of (41 b), but crucially, not in the second part, *seem* is *predicated* of x. That is, Zubizarreta's claim is that "lowering" of the subject correlates with the absence of a predication relation between the "lowered" subject and the matrix predicate *seem.*

We want to reject this claim here. In our approach, a predicate must be saturated by an entity element in order to encode a proposition. It is impossible to express a proposition by any other means than by instantiating the predication structure; i.e. one cannot choose to leave the predicate unsaturated, as suggested by Zubizarreta's claims above. The predication structure must be instantiated, and the entity element required by the predication operator must be identified. The element is not identified unless it is licensed, either by Case (e.g. expletives and raised subjects) or by being assigned a (n external) theta-role (PRO). English, like Norwegian, does not allow for a null-realization of nominative Case, hence the predication subject of *seem* in the second part of (41 b) could not be a "null expletive". Furthermore, this subject cannot be PRO, since *seem* is finite and hence does not accept a PRO subject. In addition, *seem* is not construed as assigning an external theta-role. Thus, there is no vocabulary item to identify the entity element required by the predication operator instantiated by *seem,* and its subject position cannot be empty. Accordingly, we reject the claim that "lowering" of the subject correlates with the absence of a predication relation between this subject and the matrix predicate *seem.*

12   Subject scope and thematic ambiguity

Instead, we want to claim that subject-scope ambiguities reside in thematic ambiguities. Specifically, we want to propose that there can be no subject-scope ambiguity where no thematic ambiguity exists. To support this claim, we want to point out that certain raising verbs, like e.g. epistemic modals, which never assign an external theta-role to their subjects, do not give rise to non-contradictory readings of the kind observed with *seem* in (41) above. Cf. the following data, which (according to my informants) are impossible to construe as non-contradictory, in contrast to (41) above:

(42)   Nobody must have left but somebody must have left.

Now, epistemic modals are always construed as having scope over their subject (proposition scope). Deontic modals may be construed as scoping over their subjects (proposition scope) or under their subjects. In the latter case, we get what is referred to as a subject-oriented reading (Barbiers 1995, 1999) of the modal. We want to claim here that a subject-oriented reading of a deontic modal involves the assigning of an external theta-role from the modal to

the subject, whereas a proposition-scope deontic modal, just like an epistemic modal, does *not* assign an external theta-role to the subject. One result of this thematic ambiguity of deontic modals is that they give rise to non-contradictory readings of constructions like (41) and (42) above:

(43)   Nobody must leave but somebody must leave.
   (e.g. it is required that nobody leaves but somebody has an obligation to leave)

13   Modals in pseudocleft constructions

Only subject-oriented modals accept a pseudoclefted complement in Norwegian, (cf. 44 a and b) whereas proposition scope modals reject a pseudoclefted complement, whether the modal is deontic (cf. 44 c) or epistemic (cf. 44 d):

(44)   a. Det (som) Jon m., er . v're arkitekt.
           it (that) Jon must, is to be architect
          'What Jon must do, is to be an architect.' (subject-oriented deontic modal)

        b. Det eneste du skal, er å gjøre leksene.
           it only you shall, is to do homework-DEF
          'The only thing you will do, is your homework.' (subject-oriented deontic modal)

        c.*Det en kvinne burde, er å bli vår neste statsminister.
           it a woman should, is to become our next prime minister
          (Intended: What should happen is that a woman becomes our next prime minister;
          i.e. proposition scope deontic modal.)

        d. *Det (som) Jon må, er å være arkitekt.
           it (that) Jon must, is to be architect
          'What Jon must be, is an architect.' (* on an epistemic reading of the modal)

We explain these facts by assuming that a narrow-scope reading of the subject requires the overt syntactic access to a subject position below the modal; i.e. the "lowering" position. When this lower subject position is elided, as in (44) above, "lowering" becomes impossible, and a proposition scope reading of the modal is unavailable. That is, we suggest that the pre-copula relative clause in (44 a) has a structure like the following:

(45)
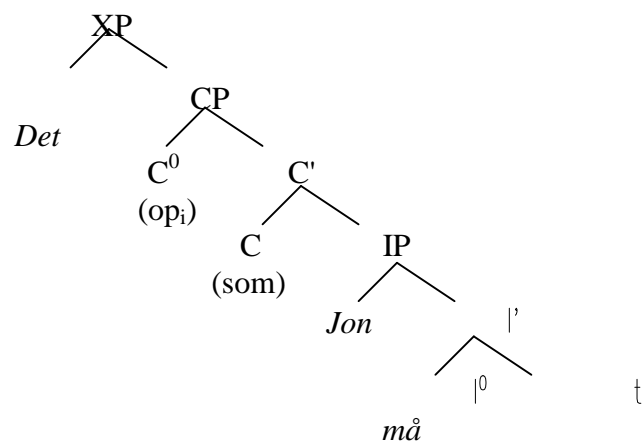
If these assumptions are correct, we would expect that providing the structure with a lower subject position within the syntactic scope of the modal ought to give rise to proposition-scope readings of the same modal; i.e. a narrow-scope reading of the subject. This expectation is borne out; cf. (46):

(46) a. Det Jon må være, er arkitekt.
          it Jon must be, is architect
          'What Jon must be, is an architect.'

      b. ?Noe (som) en kvinne burde bli, er vår neste statsminister.
          something (that) a woman should become, is our next prime minister
          'What a woman should become, is our next prime minister.'

We assign to the relative clause in (46 a) the structure in (47):

(47)
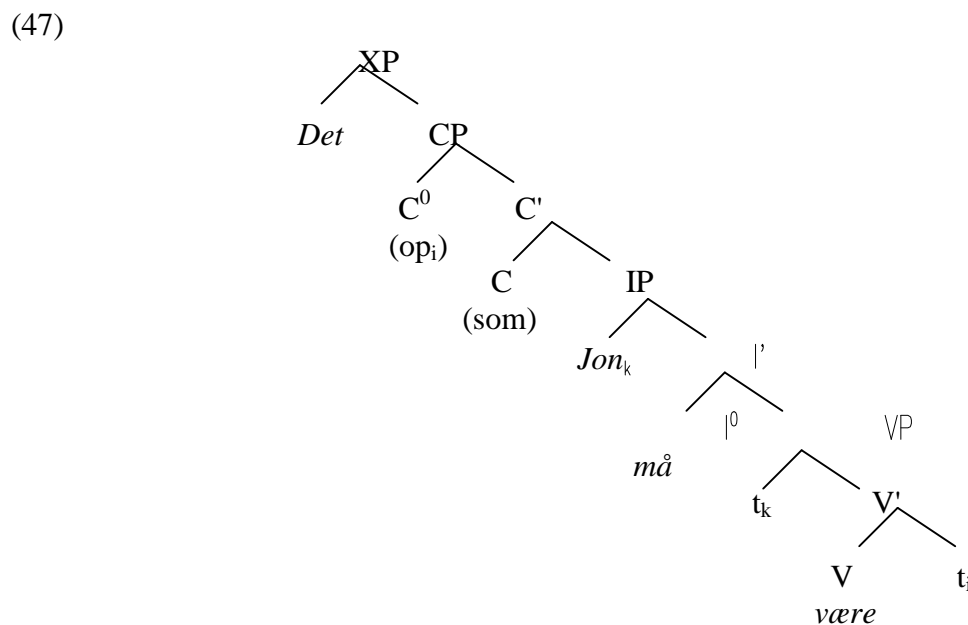
In these cases, there exists a subject position <Spec, VP> within the scope of the modal, which is retained within this structure, unlike in (45) above. This suffices to allow for the "lowering" of the subject, and the proposition-scope reading of the modal is available.

14   The thematic ambiguity of *seem*

Claiming that subject-scope ambiguity in raising constructions is due to thematic ambiguity of the raising predicate amounts to claiming that most raising verbs come in two varieties, one "true" raising version which does not assign an external theta-role to the raised subject, and another version which does assign an external theta-role to its subject. Although there exist "true" raising verbs which do not have a version assigning an external theta-role, e.g. epistemic modals, we claim that prototypical raising verbs like *seem* and *appear* and their Norwegian counterpart *se ut til å* have both versions. These assumptions are supported by data like the following from Chomsky (1995b), where the PRO subject is said to display a "quasi-agentive" reading:

(48)   PRO to appear (/seem) to be intelligent is harder than one might think.

Raising verbs with no theta-assigning version, like epistemic modals, are ungrammatical in this construction (cf. also Vikner 1988):

(49)   */??PRO å måtte være morderen er vanskelig å holde ut.
          to mustINF be the killer is difficult to cope with
          'To have to be the killer is hard to cope with.' (* epistemic reading)

There seems to exist a semantic difference between the two versions of *seem,* such that the theta-assigning version requires direct visual access to the subject by the speaker, whereas the non-thematic version does not. To exemplify, take the sentence in (50).

(50)   John seems to be sick.

This sentence has two distinct interpretations, one where the speaker has direct visual access to John and decides that John is showing signs of sickness, and another meaning the same as *it seems that John is sick*, which could be uttered as an explanation why John is not in class. That is, the interpretation where the subject *John* is given narrow scope w.r.t. *seem* does not require the speaker to have direct visual access to *John.*
        Interestingly, only the theta-assigning version, i.e. the "direct visual access" version accepts a pseudoclefted complement in Norwegian, cf. (51):

(51)   Det Jon ser ut til, er å være syk/*borte.
          it Jon sees out to, is to be sick/*gone
          'What John seems to be, is sick/gone.'

Recall from the previous subsection that proposition-scope modals (deontic or epistemic) reject a pseudo-clefted complement, whereas subject-oriented modals, which seemingly assign an external theta-role to their subjects,[20] accept a pseudoclefted complement. By analogy, we claim that the "direct visual access" reading of *seem/se ut til* involves the assigning of an external theta role to the subject, whereas the proposition scope reading of *seem*, involving a narrow-scope subject, does not assign an external theta-role. This thematic ambiguity of *seem* is responsible for the subject-scope ambiguity observed with this raising verb, such that the thematic version gives wide scope to the subject, whereas the non-thematic version gives rise to a narrow scope reading of the subject.[21]

15   Subject "lowering" and the predication relation

As shown in the previous subsections, there are indications that what has become known as "lowering" of the subject in raising constructions in fact amounts to an actual lowering of this subject. I.e., this procedure is dependent on overt syntactic access to a subject-position within the syntactic scope of the raising verb, e.g. the modal. When this lower subject position is

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[20] The theta-role assigned to the modal on the subject-oriented reading is sometimes referred to as an *adjunct* theta-role (e.g. Zubizarreta 1982, 1987 and Roberts 1985, 1993), an *additional* theta-role (Vikner 1988, Thráinsson and Vikner 1995), or a *secondary* theta-role (Picallo 1990).

[21] We should mention here that we adhere to the assumptions in Enç1991) that what is known as wide-scope versus narrow-scope readings of *indefinites* is not encoded in syntactic positions like upper and lower subject positions. Instead, these readings reside in a lexical ambiguity of indefinites; cf. also Eide (2001) for a more detailed discussion of this subject.

elided, for instance when the complement of the modal is pseudoclefted, subject "lowering" is impossible, and a proposition scope reading of the modal (or raising verb) is unavailable.

One way of implementing these facts is to adopt the recent theory of A-chains put forward in Hornstein (1998, 1999, 2000). Horstein suggests that A-links, not A-chains, are the real obejcts of interpretation at LF. Thus, Horstein makes the following assumption:

(52)   At the CI Interface (LF) an A-chain has one and only one visible link.

"Lowering", Hornstein claims (1998:102), is effected when higher links of an A-chain are deleted and a lower link is retained. (52) simply requires that all but one link delete. It does not specify which one is retained nor does it favor the deletion of lower links over higher ones. However, there exist restrictions on this "lowering". One such restriction could be formulated as follows:

(53)   a. Delete all links in the A-chain except one. BUT:
         b. The retained link must be at least as high in the structure as the topmost θ-position.

(53 b) accounts for the fact that obligatory theta-assigners, such as control verbs, do not allow for their subjects to scope under them.

Now, as shown by this outline, we do not rule out the possibility that there exists covert movement such as "lowering" of a raised thematic subject. However, "lowering" does not affect the *predication* relation between this subject and the matrix predicate. Specifically, although the pseudocleft data suggest that proposition scope raising verbs such as epistemic modals (and the proposition scope, non-thematic version of *seem*) involve interpreting a non-topmost link of the A-chain, this operation does not undo the predication relation between the matrix verb and the "lowered" subject. To illustrate, take the sentence in (54).

(54)   Jon må ha knust vasen.
   'Jon must have broken the vase.'

On an epistemic reading, the modal does not assign an external theta-role to the subject. Pseudoclefting the complement of the modal renders the epistemic reading unavailable, cf. (55):

(55)   *Det Jon må, er å ha knust vasen.
          it Jon must, is to have broken vase-DEF
         (Intended: 'What Jon must have done is broken the vase.')

This strongly indicates that the lower subject position, i.e. a subject position within the scope of the modal, is essential to a proposition scope reading, including an epistemic reading, of the modal. Assume that overt syntactic access to the lower subject position is essential for subject "lowering" to take place because this subject position contains the A-link retained at LF. However, if this is correct, it cannot be the case that predication relations are read off the same structures.

Specifically, if all links but one in an A-chain are deleted by LF (as claimed by Hornstein), and if the retained link is situated in a subject position below the topmost predicator, as seems to be happening in the case of subject "lowering", then the topmost predication operator would be unsaturated at the relevant syntactic level (i.e. LF). Cf. the structure in (56), which depicts the pre-copula relative clause of a psedocleft construction:

(56)
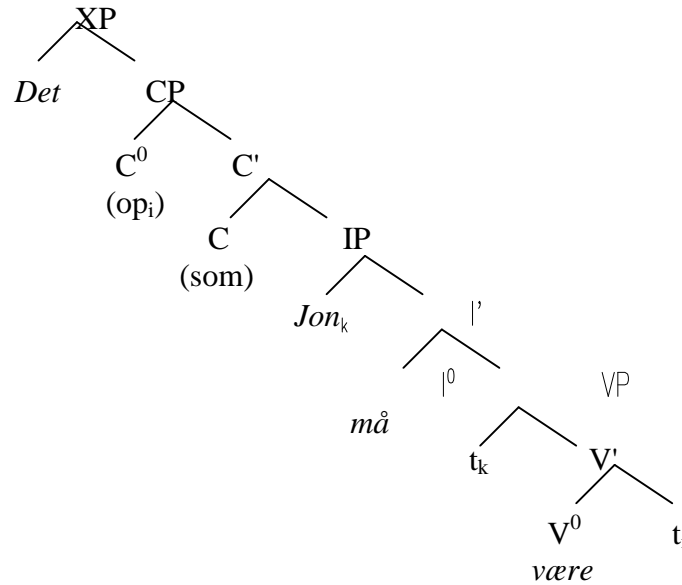
Subject "lowering" in this structure involves retaining the A-link t_k in <Spec, VP> instead of the A-link Jon_k in <Spec, IP>. That is, the link Jon_k is deleted by LF. Now, if predication relations were read off this LF-structure, then the predication operator in I^0 would be left unsaturated; i.e. the entity element required by the predication operator situated in I^0 would not be identified, since the subject position <Spec, IP> is in effect empty at LF. This would not be allowed by the system outlined above, since a predication operator cannot be unsaturated when it encodes a proposition; but much more importantly, it does not capture our intuitions about the predication relation between *Jon* and the modal *må*. No matter the scopal construal of the subject, our intuition is that there exists a predication relation, and furthermore, a *substantive* (i.e. "aboutness") predication relation between *Jon* and *må*. That is, our intuitions (as well as the system outlined in the present work) indicate that there is a predication relation between *Jon* and the modal *må*. On the other hand, the pseuocleft data suggest that an epistemic reading of the modal involves a lowering of the subject which leaves the subject position of *må* empty at LF. There are several possible solutions to this problem.

One possibility would be to invoke the "All-for-One-Principle" assumed within the Minimalist Program (the term is due to Hornstein 1998). Put simply, this principle refers to the assumption that if a link in a chain checks a feature than all links of that chain also check that feature. Applied to the structure above, one might suggest that the A-link $[Jon_k$, $t_k]$ identifies the entity elements of the predication operators situated in I^0 and V^0 respectively, before the A-link in <Spec, IP> is deleted and the A-link in <Spec, VP> is retained. However, there is a problem with this assumption within a Horstein-type approach. In Horstein's system, movement is actually [Copy + Deletion], which means that any principle referring to chains is unavailable. In fact, there is no A-chain at any point in the derivation. The only derivational history retained is the collection of features (including theta-features) transferred from syntactic heads to DP by means of checking.[22]

One way to circumvent the problem sketched above would be to reject Hornstein's claim that movement is [copy + deletion] and assume instead that the entire A-chain is estab-

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[22] Hornstein (1998, fn. 9): "Lasnik (1995) proposes treating theta-roles as features of verbs. These features can be checked D/NPs A D/NP bears the theta-role corresponding to the theta-feature of the verb that it checks. One can think of this thematic checking operation as a way of transferring the feature from the verb to the nominal [...]. We can represent this by treating theta-roles as features that D/NPs acquire by merging with predicates within lexical domains. This is what the present analysis assumes."

lished before all but one link is deleted; i.e. that this deletion is a late syntactic operation. In this picture, all predication relations are visible at the CI/LF interface, encoded by the retained A-link by means of the "All-for-One-Principle".

16   Conclusion

We have argued that predication is a, if not *the*, decisive factor molding the fundamental syntactic traits of clauses. Thus, we have argued that layers of predicational operator structures construed as layers of propositional skeletons are the basic semantic objects that explain both basic syntactic architecture and the basic syntactic processes that take place in clauses. Needless to say, we have just scratched the surface of some of the very basic problems and questions raised by the hypotheses and ideas advanced in this paper, but we hope to have provided enough evidence to convince the reader that they are worth trying out.

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