Danish Pre-nominals as Specifier Heads

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1. Introduction

This paper presents an outline of a central aspect of an extensive formal analysis of the syntax of the Danish nominal phrase within the framework of Head-Driven Phrase Structure Grammar, cf. Pollard and Sag (1994). The aspect of the analysis I will focus on is nominal phrase structure. Modern theories of phrase structure are commonly based on X-bar Theory and phrase structure conforms to the X-bar schema proposed in Chomsky (1970). Within this tradition, there has been much discussion about the categorial status of nominal phrases. This paper is a contribution to this discussion. I propose a nominal phrase analysis which I refer to as the Specifier Head Analysis to indicate that it is a combination of the NP and DP approaches.

In 2. I give some examples of Danish nominal phrases covered by the analysis. In 3. I introduce two basic assumptions that form the basis of the analysis. A brief outline of the NP and DP analyses and the difference between them is given in 4. 5. is a brief introduction to HPSG. The Specifier Head Analysis is presented in 6. In 7. and 8. respectively, the analysis is applied to two types of pre-nominal, adjectives functioning as specifiers and the Danish definite article. Finally, the paper is concluded in 9.

2. Some Data

In (1) examples of nominal phrases covered by the analysis are shown. The examples are by no means exhaustive. As can be seen only nominal phrases consisting of a noun and possibly pre-nominals are covered.

(1) a. Han kan lide at fortælle ***historier***.
'He likes to tell stories.'
b. Jeg vil skrive ***disse ord***.
'I will write these words.'
c. Undskyld, at vi trættede med ***denne lange historie***.
'Excuse us for tiring you with this long story.'
d. Arrigt rev han ***de mange ark*** i stykker og kylede dem i papirkurven.
'Angrily he tore up the many sheets and threw them in the wastepaper basket.'

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e. ***Mange børn*** ønsker brændende at blive ejer af et dyr.
'Many children ardently wish to become the owner of an animal.'
f. Den lever sit liv ***alle disse mange år*** efter.
'It lives its life all these many years after.'
g. I ***denne min begejstring*** står jeg på sikker grund med Johann Sebastian Bach ved hånden.
'In this my enthusiasm I stand on firm ground with Johann Sebastian Bach at hand.'

Danish nominal phrases form a heterogeneous group in terms of what pre-nominals may precede the noun. E.g. in (1f) three determiners precede the noun *år* (year), the quantifying determiner *alle* (all), the demonstrative determiner *disse* (these) and another quantifying determiner *mange* (many). The nominal phrase in (1g) is an example of a nominal phrase containing multiple definite determiners, in this case the demonstrative determiner *denne* (this) and the possessive determiner *min* (my).

3. Some Basic Assumptions

Throughout this paper I make two basic assumptions wrt. the analysis of phrase structure. It must account for two types of selection wrt. nominal phrases, external selection and internal selection.

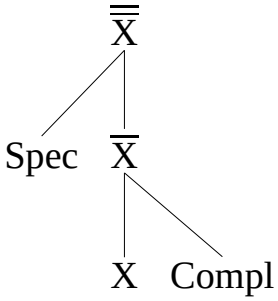
Firstly, for the purpose of external selection, it is an advantage if nominal phrases can be uniquely identified categorially. E.g. when specifying subcategorisation restrictions on verbs, it is an advantage if these can be stated non-disjunctively.

Secondly, it is also an advantage if the distribution of pre-nominals inside nominal phrases can be accounted for in terms of internal selection. This means that ungrammatical combinations of determiners should be ruled out by the analysis.

4. X-bar, Specifiers and Functional Heads

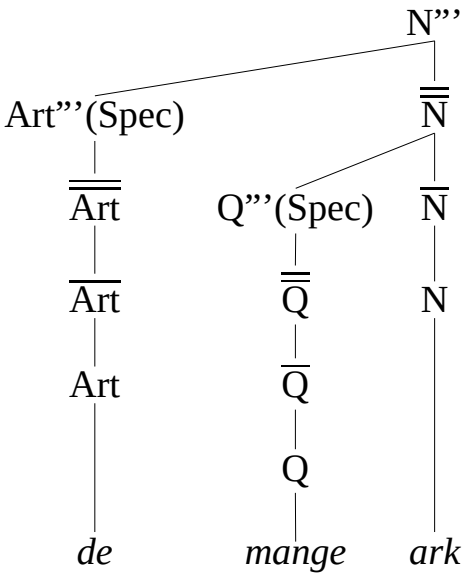
According to Chomsky's X-bar schema a phrase contains an optional specifier attaching at the $\overline{\text{X}}$ level, and complements attaching at the X level, as shown in (2).

(2)



There are two important applications of the schema. To account for noun phrases with more than one specifier, Jackendoff modifies Chomsky's X-bar schema and assumes three levels of description (The Uniform Three Level Hypothesis), cf. Jackendoff (1977). Jackendoff's schema is shown in (3).

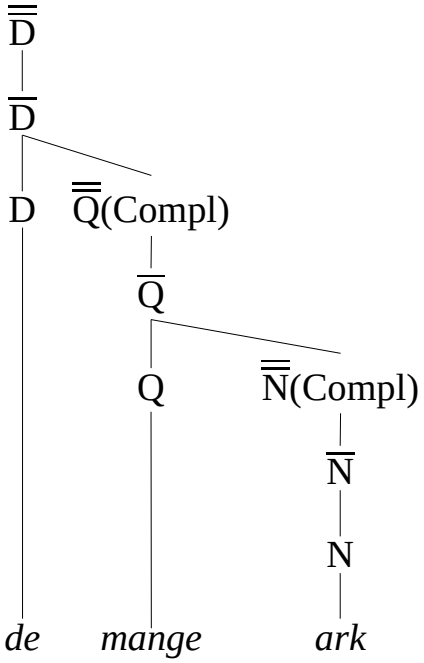
(3)



This modification allows for two specifier positions, one where articles (possessives and certain quantifiers included) plot in and one where quantifiers plot in. Jackendoff assumes that determiners are specifiers, which themselves also conform to the X-bar schema, and the noun is the head. Jackendoff's analysis is an NP analysis, or a specifier analysis, because determiners are analyzed as specifiers.

To account for more complex nominal phrases Abney maintains the two level description, cf. Abney (1987). He assumes that determiners are functional heads, other determiners and the noun are complements. Abney's schema is shown in (4).

(4)



Abney's analysis is a DP analysis or functional head analysis. Delsing (1993) proposes a DP analysis for Scandinavian NPs.

There are advantages of the NP analysis from the point of view of external selection, as a nominal phrase is always a noun phrase. This means that a nominal phrase has a unique categorial definition. Also, determiners are phrases conforming to X-bar themselves. This means that they can have their own dependents and an example like e.g. *de utroligt mange ark* (the incredibly many sheets) where the quantifier determiner has its own specifier can be accounted for.

There are, however, also disadvantages of the NP analysis. It does not account for internal selection, as a specifier cannot select or rule out other specifiers. This is because a specifier has no hand on a following specifier, i.e. they are not sister constituents in a local tree. Also, there are only a limited number of specifier slots. Chomsky's schema cannot account for e.g the Danish example *denne min begejstring* (this my enthusiasm) for the obvious reason that it only allows for one specifier. But neither can Jackendoff's schema because, on the one hand, the two determiners involved are both article determiners and want to plot into the same slot, and, on the other, the structure does not allow for the initial demonstrative determiner to select the possessive determiner, and importantly rule out other definite determiners in this position.

There are also advantages of the DP analysis. Firstly, internal selection is accounted for in terms of complement selection. Secondly, more complex phrase types with multiple determiners can be accounted for by adding more types of functional head.

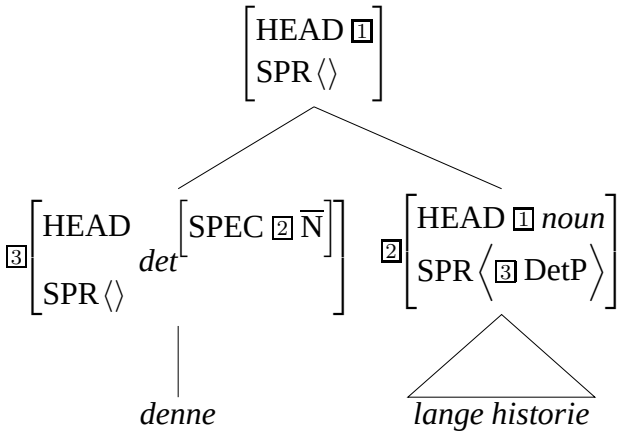
But again, the DP analysis also has disadvantages. From the point of view of external selection, a nominal phrase is now a DP, a QP or an NP (or PossP or AP when more types of functional head are added). This means that a nominal phrase no longer has a unique categorial definition, unless one assumes that all these different categories project into a uniform DP category.

5. HPSG Nominal Phrases

In this section the analysis of nominal phrases as laid out in Pollard and Sag (1994) is introduced. Various selection features are assumed in HPSG. They divide into two groups, valence features and the non-valence features MOD and SPEC. Selection in constructions is central to the analysis of nominal phrases. The type of selection and hence type of resulting construction restricts the possible make-up of the projected nominal phrase.

Determiners are specifiers and pre-nominal adjectives are modifiers in Pollard and Sag (1994). Nouns lexically select a determiner. This is encoded in their SPR attribute and determiners select a nominal, encoded in their SPEC attribute. The representation of the head-specifier construction *denne lange historie* (this long story) is shown in (5).

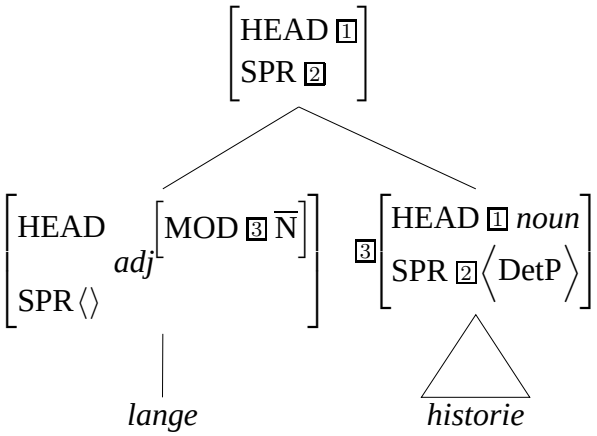
(5)



The head daughter and the mother in the construction structure share the value for their HEAD attributes, indicated by the tag 1, in accordance with the HEAD FEATURE PRINCIPLE. This means that the head daughter, i.e. the nominal, projects its category. The structure sharing indicated for the two features SPEC and SPR ensures the lexical selection explained above, the determiner selects the nominal head, and at the same time the nominal head selects the determiner. That the SPR value on the projected phrase is an empty list indicates that it is a maximal nominal projection.

Adjectives are specified for the selection feature MOD, and select their modified head via the MOD attribute in a *hd-adj-ph* construction. With modifiers there is no mutual selection involved. The representation of the head-adjunct construction *lange historie* (long story) is shown in (6).

(6)



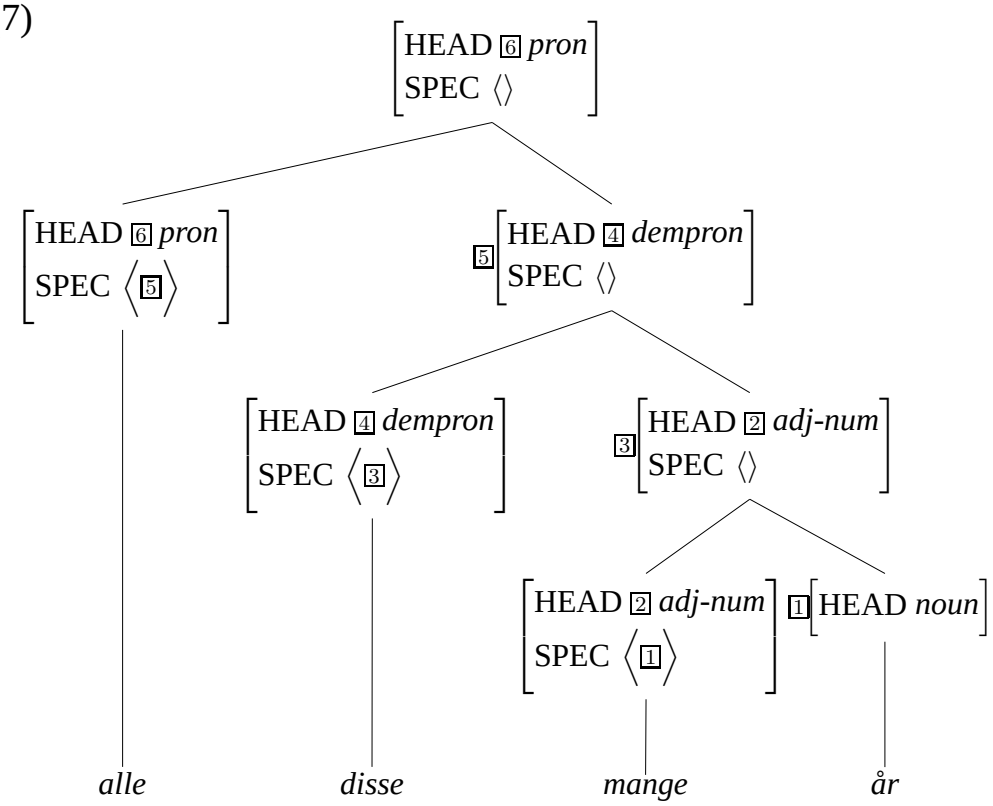
Again the head daughter and the mother in the construction share the value for their HEAD attributes obeying the THE HEAD FEATURE PRINCIPLE. So, the nominal is also the head of this construction and projects its category. The structure sharing indicated for the MOD feature ensures that the adjective modifier selects the nominal head. That the SPR list is non-empty indicates that the projected phrase is not a maximal nominal projection. The phrase has to combine with a determiner phrase to become a maximal nominal projection.

The standard HPSG analysis of determiners is an NP analysis and it more or less has the same advantages and disadvantages as Jackendoff's NP analysis. This means that external, but not internal selection is accounted for. Determiners form determiner phrases, but the nominal head can only take one determiner phrase as specifier.

6. Specifier Heads

The analysis put forward here is a combination of features from both the NP and the DP analyses, so that it has the advantages of both, and at the same time avoids the disadvantages of both. The structure I propose for the nominal phrase *alle disse mange år* (all these many years) is given in (7).

(7)

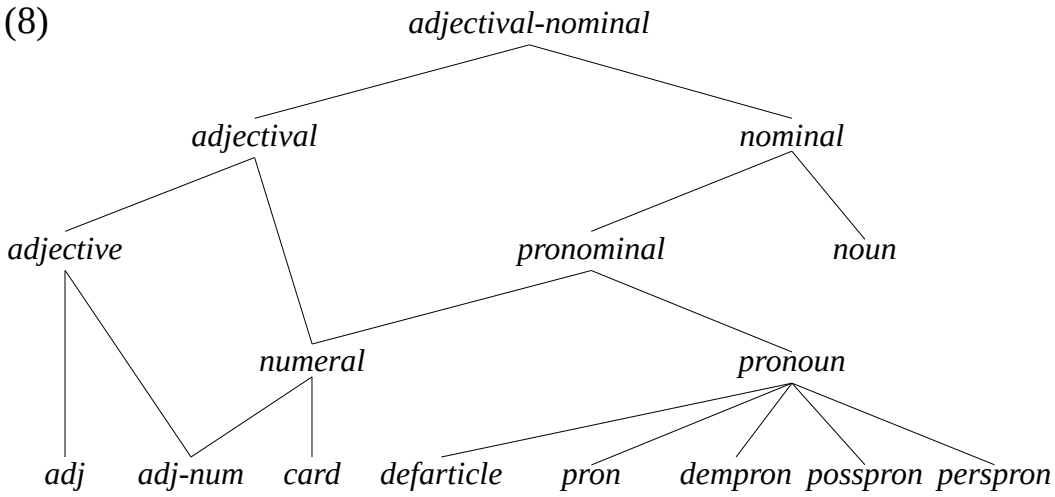


As in the DP analysis, internal selection is accounted for, not in terms of complement selection, but specifier selection. Specifiers are lexically specified as selecting a specific type of non-head nominal, at the same time projecting their own category. Secondly, no fixed number of specifiers is assumed. This means that the Danish example with multiple definite determiners is easily accounted for. The analysis also allows determiners to be specified, e.g. *utroligt mange* (incredibly many), as the specifiers are not functional and can take their own dependents. Finally, external selection is also accounted for, as all nominal phrases can be defined as belonging to one unique category.

This latter aspect of the analysis relies on HPSG type-theory. All nominal phrases can be uniquely defined as belonging to one category because nominal and adjectival types are arranged in a type hierarchy where they

are all subsumed by a common supertype *adjectival-nominal*, as shown in (8).

(8)



As the type hierarchy shows all the types involved in the nominal phrase *alle disse mange år* (all these many years) are subsumed by the type *adjectival-nominal*. This type can be selected by categories external to the nominal phrase, e.g. in connection with subcategorization specification for verbs.

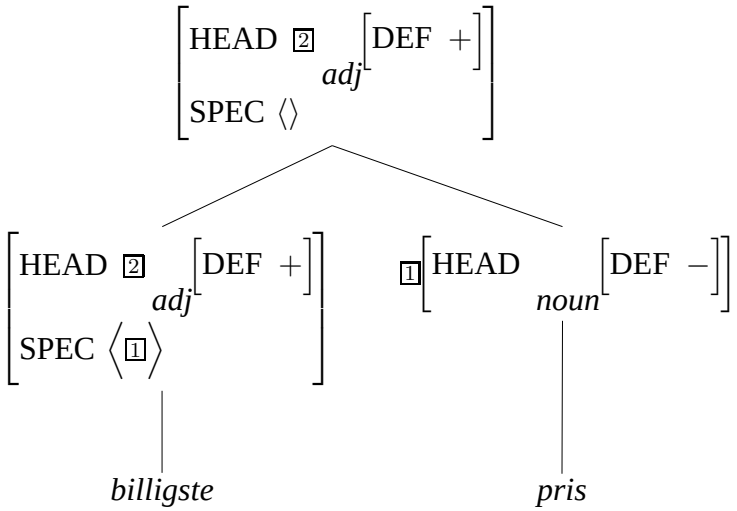
7. Specifier Adjectives

Usually adjectives function as modifiers, but certain adjectives are inherently definite and may function as determiners in the sense that they complete the nominal phrase, or project a non-maximal nominal phrase into a maximal nominal phrase. *Første* (first), *næste* (next), *sidste* (last) and superlatives belong to this group. Examples are given in (9).

(9) a. ***Sidste halvdel*** af august er meget inspirerende.
'Last half of August is very inspiring.'
b. Alt er udført i ***bedste materialer*** og er meget velholdt.
'Everything is made of best materials and is very well-preserved.'
c. ***Billigste pris*** er 8500 kr.
'Cheapest price is 8500 kr.'

The adjective *billigste* (cheapest) is analyzed as a specifier head selecting the nominal non-head sister, projecting its own *adj* category. The nominal phrase is consequently of type *adj* which is a subtype of *adjectival-nominal* for the purpose of external selection. The representation of the nominal phrase is given in (10).

(10)



The definite adjectives are also analyzed as specifiers when there is a preceding non-adjectival specifier, as in (11).

(11) a. Kan du besejre ***de største dyr*** i skoven?
'Can you defeat the largest animals in the forest?'
b.*Kan du besejre ***tre største dyr*** i skoven?
'Can you defeat three largest animals in the forest?'

This allows for an account for the distribution in (11) in terms of internal selection. The constraint is that an initial cardinal does not precede a definite adjective. If the adjectives had been analyzed as modifiers, the information about definiteness would not have been projected to the node immediately dominating *største* (largest).

8. The Danish Definite Article

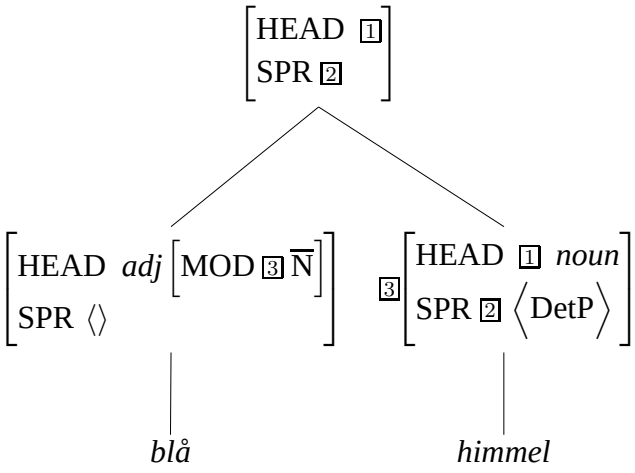
In Danish the definite article does not occur in nominal phrases that do not also contain a modifier. (Definiteness can also be expressed by a definite suffix, sometimes also referred to as an article. However, the definite suffix is not dealt with in this paper.) The examples in (12) illustrate the distribution of the article. It should be noted that (12b) is grammatical on a demonstrative determiner reading of *det* and *den*.

(12) a. Hun mærker sig ***det grå vand*** og ***den blå himmel***.
'She feels the grey water and the blue sky.'

b. *Hun mærker sig ***det vand*** og ***den himmel***.
'She feels the water and the sky.'

This distribution is found in Scandinavian languages, and it causes problems if one wants to account for the distribution of the Danish definite article in adjunction analyses of adjective modifiers put forward for e.g. English and German, cf. e.g. Pollard and Sag (1994), Netter (1994) and Kathol (1998). In such analyses, all modifiers combine with a head-sister nominal and the projected phrase has the same bar-level or the equivalent as the head nominal. The modifier leaves no mark on the projected phrase. This is illustrated in (13) which repeats the adjunction analysis of modifiers in (6).

(13)



This in turn means that a determiner selecting a nominal sister cannot constrain it to a nominal modified by an adjective. There is no obvious solution to this problem given the nature of this dependence which is indeed different from the dependence holding between a specific type of determiner and a specific inflectional form of an adjective, cf. German declension and Scandinavian inflection for definiteness, where the determiner constrains the form of the adjective but does not require its presence.

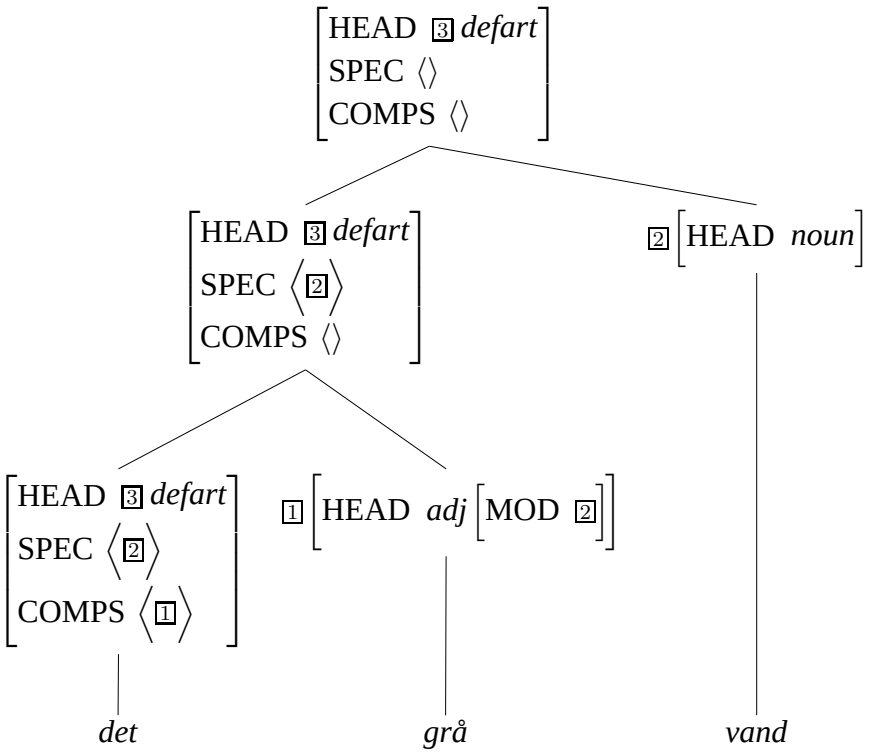
In the present analysis the Danish definite article is analyzed as a transitive determiner requiring an adjective complement in order to function as a specifier of a nominal. This feature sets it apart from all other determiners which are intransitive determiners functioning as specifiers of nominals. The lexical entry for the definite article contains the features given in (14).

(14)
$$\begin{bmatrix} \text{PHON} \left\langle \textit{den} \right\rangle \\ \text{SS}\,|\,\text{LOC}\,|\,\text{CAT} \begin{bmatrix} \text{HEAD} \ \textit{defart} \\ \text{SPEC} \left\langle \boxed{1} \right\rangle \\ \text{COMPS} \left\langle \left[\text{HEAD} \ \textit{adj} \left[\text{MOD} \ \boxed{1} \right] \right] \right\rangle \end{bmatrix} \end{bmatrix}$$

The definite article takes an adjective complement and raises the constituent the adjective modifies to its SPEC list. This means that the complement saturated definite article specifies a nominal sister. Intuitively, the definite article turns an adjective into a determiner.

The analysis of *det blå vand* (the blue water) from (12a) is given in (15).

(15)



The analysis of the Danish definite article presented here is possible because determiners can take their own dependents. The analysis would not have been possible assuming that determiners are functional heads as in the DP analysis.

9. Conclusion

This paper has proposed an alternative to the standard NP and DP analyses of nominal phrases, the Specifier Head Analysis. First of all, the specifier head analysis, comprising features from both the NP and the DP analyses, accounts for both internal and external selection. This means that the analysis accounts for the distribution of multiple determiners inside the nominal phrase, while at the same time nominal phrases headed by different types of determiners are given a unique categorial definition. Secondly, the analysis allows for multiple specifiers in nominal phrases, and specification and complementation of specifiers. The latter features were shown to enable an account of the distribution of definite adjectives and the definite article in Danish.

References:

Abney, Steven Paul. 1987. *The English Noun Phrase in its Sentential Aspect*, Master's thesis, MIT.

Chomsky, Noam. 1970. 'Remarks on nominalization', in Roderick A. Jacobs and Peter S. Rosenbaum (eds.), 'Readings in English Transformational Grammar', Waltham, Massachusetts: Ginn and Company, pp. 184–221.

Delsing, Lars-Oluf. 1993. *The Internal Structure of Noun Phrases in the Scandinavian Languages*, Malmö: Team Offset.

Jackendoff, Ray. 1977. $\overline{X}$ *Syntax: A Study of Phrase Structure*, Cambridge: Massachusetts: MIT Press.

Kathol, Andreas. 1998. 'Determiners as nominal heads', in Gosse Bouma, Geert-Jan Kruijff and Richard Oehrle (eds.), 'Proceedings of FHCG'98, Saarbrücken', pp. 136–143.

Netter, Klaus. 1994. 'Towards a theory of functional heads: German nominal phrases', in John Nerbonne, Klaus Netter and Carl Pollard (eds.), 'German in Head-Driven Phrase Structure Grammar', Stanford: CSLI.

Pollard, Carl and Ivan Sag. 1994. *Head-Driven Phrase Structure Grammar*, Chicago: The University of Chicago Press.