# 17

Prenominals in Dutch

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17.1 Introduction

For modeling the internal structure of noun phrases (Pollard and Sag, 1994, 385) treats the noun as the head and classifies its dependents in terms of a three-fold distinction, first proposed in Chomsky (1970), between complements, adjuncts and specifiers. For a phrase like *the expensive picture of Sandy* the structure looks as follows.
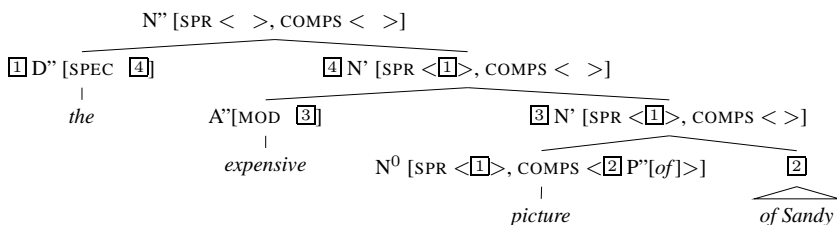
The noun *picture* selects a DetP (D") as its specifier and a PP (P") as its complement. The adjectival modifier is not selected by the noun; instead, it is the noun which is selected by the adjective. This is modeled in terms of the latter's MOD value. In a similar way, the determiner also selects the nominal which it specifies. This is modeled in terms of the feature SPEC; its value specifies the syntactic and semantic constraints which the determiner imposes on its head. The indefinite article, for instance, requires a singular count nominal. The difference between MOD and SPEC is a categorial one: while the members of the lexical categories (N,V,A,P) select their head in terms of MOD, the members of the functional categories (DET, MARKER, . . .) select their head in terms of SPEC.

Typical of this analysis is the emphasis on the differences between determiners and adjectives: they belong to different parts of speech, they are associated with different head features and their role within the NP is fundamentally different.[1] For an analysis of the Dutch NPs, none of these assumptions is particularly helpful; as a matter of fact, there are at least three problems with it, as I will demonstrate in section 2. As an alternative, I will propose a functor treatment for both the determiners and the adjectives. This treatment will £rst be sketched in general terms (section 3) and will then be elaborated in more detail (section 4).

17.2 Three problems for the speci£er treatment

Adopting a broad de£nition of the notion, I will identify the determiners as those prenominals which are in complementary distribution with the articles. By this criterion, the Dutch possessives are determiners, as illustrated by the ungrammaticality of *de mijn hond* 'the my dog' and *mijn de hond* 'my the dog'. Applying this criterion to the Dutch prenominals we arrive at the following—incomplete but representative—sample of determiners.

Possessive	*mijn, ons, uw, jouw, zijn, haar, hun*
Demonstrative	*deze, die, gene*
Quanti£er	*elk, ieder, alle, sommige, geen, enig*

In terms of (Quirk et al., 1985, 253) these are the central determiners: they are distinct from the predeterminers, such as *al* 'all' in *al de kinderen* 'all the children', and from the postdeterminers, such as *beide* 'both' in *zijn beide ouders* 'his both parents'. The purpose of this section is to demonstrate that the determiners had better be treated along the same lines as the adjectives.

17.2.1 The part of speech of the prenominals

When we apply the criteria which are standardly used for motivating part of speech distinctions, it turns out that there is little evidence for treating the Dutch determiners as members of another part of speech than the adjectives.

First, as shown in the table below, the prenominal determiners show the same in¤ectional variation as the prenominal adjectives. It can be captured in terms of two binary distinctions, i.e. [+/−DECL] and [+/−CASE]. The [−C] forms lack a case af£x and may have the declension af£x *-e*. The [+C] forms have a case af£x, i.e. *-n, -r* or *-s*.[2] The table contains various gaps, but since such gaps occur both among the adjectives and the determiners, they con£rm

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[1] This remark also applies to Netter's DP analysis. Netter (1994) treats the determiners as heads, rather than as speci£ers, which makes the contrast with the modifying adjectives even more conspicuous.

[2] In prenominal positions, *goeds-* is invariably incorporated, as in *goedsmoeds* 'good-GEN-courage-GEN'.

the similarity.

Adnominal	[–D,–C]	[+D,–C]	[+C]		
Adjective	*goed*	*goede*	*goeden*	*goeder*	*goeds-*
	koel	*koele*	*koelen*		
	open				
Possessive	*zijn*		*zijnen*	*zijner*	*zijns*
	ons	*onze*	*onzen*	*onzer*	*onzes*
Demonstrative		*deze*	*dezen*	*dezer*	
Quanti£er	*elk*	*elke*			
	enig	*enige*		*eniger*	

Second, determiners can be conjoined with adjectives, as in *deze en soort-gelijke problemen* 'these and similar problems' and *deze en andere steden* 'these and other cities'. That the second conjuncts in these examples are adjectives follows from their compatibility with a determiner, as in *een soort-gelijke oplossing* 'a similar solution' and *zijn andere baan* 'his other job'. The fact that they can be conjoined with a demonstrative determiner is signi£cant, since it is normally not possible to conjoin words which belong to different parts of speech, such as a noun and a verb or an adjective and a preposition.

Both in terms of morphology and distribution the Dutch determiners are, hence, so similar to the prenominal adjectives that it is more reasonable to start from the assumption that they belong to the same part of speech than from the assumption that they must belong to different parts of speech. Further evidence for this conclusion is provided by the fact that many of the determiners are standardly treated as adjectives in other languages. The Italian possessives, for instance, are treated as adjectives, since they cooccur with the articles, as in *il mio cane* 'the my dog', and since they can follow the noun, as in *un amico suo* 'a friend his', see Renzi (1988). The same holds for the Greek demonstratives, which standardly cooccur with the de£nite article, see (Mackridge, 1985, 193).

17.2.2   The optionality of the prenominals

One of the main differences between adjuncts and speci£ers in Pollard and Sag (1994) is that the former are entirely optional, whereas the latter are not. Singular count nouns, for instance, require the presence of a determiner (in English). To capture this difference, the speci£er is lexically selected by the noun in terms of the SPR feature, whereas the adjuncts are not selected. The value of the SPR feature is a list containing one element (DetP). In the lexical entries of singular count nouns its presence is obligatory, but in the entries of mass and plural nouns, it is optional. The obligatoriness of the determiner is hence linked to lexical properties of the noun, such as its number and its being mass or count.

When applied to Dutch, this distinction between optional adjuncts and (sometimes) obligatory speci£ers turns out to be untenable, since all Dutch nouns, including the singular count ones, can be used without determiner. (Haeseryn et al., 1997, 195–210) discusses no less than nine different types of contexts in which this is possible. These include a.o. the predicative use in *is leraar* 'is teacher', the combination with certain prepositions, as in *zonder tapijt* 'without carpet' and *per trein* 'by train', the combination with *als* in *heeft een krokodil als huisdier* 'has a crocodile as pet', and the conjunction in *moeder en kind zijn verdwenen* 'mother and child have disappeared'. The claim that singular count nouns are incomplete without determiner is hence far too strong.[3]

Moreover, the question of whether the determiner is obligatory or optional is not related to lexical properties of the noun. The noun *trein* 'train', for instance, which is singular and count, needs a determiner in **(de) trein is net vertrokken* 'the train has just left', but in *trein 4325 is net vertrokken* 'train 4325 has just left' it sounds more natural without determiner, and in the PP *per trein* 'by train' it may not even take a determiner. Similarly, the singular count noun *viool* 'violin' needs a determiner in **(die) viool is niet gestemd* 'that violin is not tuned', but in *speelt viool* 'plays violin' and *zonder viool* 'without violin' it standardly occurs without determiner. This shows that the omissibility of a determiner is not determined by lexical properties of the noun, but rather by the function of the nominal as a whole. As a consequence, it does not make much sense to use a valence feature for modeling the selection of a determiner, since it is typical of valence features that they encode lexical properties of selectors.

17.2.3 The effect of the prenominals on the level of saturation

Another difference between speci£ers and adjuncts is that the former have an effect on the content of the valence features of their head, whereas the latter have not. More speci£cally, the addition of a determiner triggers the cancellation of the SPR requirement on the noun, whereas the addition of an adjunct does not have any effect on the valence features of its head. This follows from the Valence Principle, as spelled out in Sag (1997). For Dutch, however, there is some clear evidence that the addition of an adjunct CAN affect the degree of saturation of a nominal. To show this let us take the following contrasts.

(1) wit/*witte   goud, geen wit/*witte   goud
     white/*white-DECL gold, no   white/*white-DECL gold

---

[3]From a cross-linguistic perspective, this is hardly surprising, since there are languages which allow an even wider use of bare singulars, such as Latin and Norwegian. On the latter, see Borthen (2000).

(2) het witte/*wit   goud
     the white-DECL/*white gold

If a singular neuter noun, such as *goud* 'gold', combines with an adjective, then the adjective has to be nondeclensed, if there is either no determiner, as in *wit goud*, or an indefinite determiner, as in *geen wit goud*. By contrast, if there is a definite determiner, such as the article *het*, then the adjective has to be declensed. As a consequence, since *goud* 'gold' is a mass noun, both *goud* and *wit goud* can be used without determiner, but *witte goud* 'white-DECL gold' cannot: it is only grammatical, when it is preceded by a definite determiner. In other words, the morphological form of the adjective has an effect on whether or not the nominal needs a determiner. Moreover, it also has an effect on what type of determiner the nominal needs.
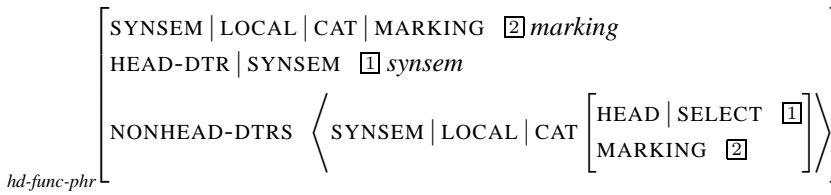
A similar phenomenon concerns the fact that the *-er* forms of the adjectives pre-empt the addition of a determiner. Some relevant examples are the genitive and dative forms in *zaliger gedachtenis* 'holy-GEN remembrance' and *te goeder trouw* 'in good-DAT faith'. While the heads of these nominals are nouns, which can be combined with a determiner, the addition of the case marked adjective makes this impossible, cf. * *de zaliger gedachtenis* and * *de goeder trouw*. This is significant, since the same forms without the *-r* affix are grammatical, cf. *de zalige gedachtenis* and *de goede trouw*.

In sum, whether or not a Dutch nominal needs a determiner also depends on the morphological form of the prenominal adjectives. This confirms the conclusion of the previous paragraph that the distinction between specifiers and adjuncts lacks empirical motivation.

17.3 Outline of an alternative treatment

In keeping with the conclusions of the previous section I will assume that determiners and adjectives belong to the same part of speech (A) and that the dichotomy between adjuncts and specifiers had better be dropped. Instead, I will treat them both as functors. To model their combination with the noun, I employ the type *head-functor*. Characteristic of this type is that it generalizes over all combinations in which the non-head daughter selects the head daughter. As such, it subsumes the *head-adjunct*, *head-specifier* and *head-marker* types of Pollard and Sag (1994). For its definition I employ the version of Van Eynde (1998).[4]

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[4]There is another version, employed in Allegranza (1998), which differs minimally from the one I use.

$$
\begin{bmatrix}
\text{SYNSEM} \,|\, \text{LOCAL} \,|\, \text{CAT} \,|\, \text{MARKING} \quad \boxed{2} \; marking \\[4pt]
\text{HEAD-DTR} \,|\, \text{SYNSEM} \quad \boxed{1} \; synsem \\[10pt]
\text{NONHEAD-DTRS} \quad \left\langle \; \text{SYNSEM} \,|\, \text{LOCAL} \,|\, \text{CAT}
\begin{bmatrix}
\text{HEAD} \,|\, \text{SELECT} \quad \boxed{1} \\
\text{MARKING} \quad \boxed{2}
\end{bmatrix} \right\rangle
\end{bmatrix}
$$

hd-func-phr

The selection of the head daughter by the nonhead daughter is modeled by the SELECT feature of the functor. Just like the MOD and SPEC features, which it replaces, its value is an object of type *synsem*. It can be used to model various types of agreement, as well as semantic constraints, such as the fact that the inde£nite article requires a singular count noun.

The MARKING feature models the syntactic properties which a mother shares with its functor daughter. In Pollard and Sag (1994) it is used to model the combination of a complementizer with a clause. The clause *that we leave*, for instance, is represented as S [MARKING   *marked*], whereas *we leave* is represented as S [MARKING   *unmarked*]. When applied to nouns and adjectives, it can be used to distinguish between marked and unmarked nominals, as in

```
                        N[marked]
            ┌───────────────┴───────────┐
       A[marked]                    N[unmarked]
           │                ┌────────────┴──────┐
         zijn          A[unmarked]          N[unmarked]
                           │            ┌────────┴──────┐
                        kleine      A[unmarked]    N[unmarked]
                                        │               │
                                      rode            £ets
```
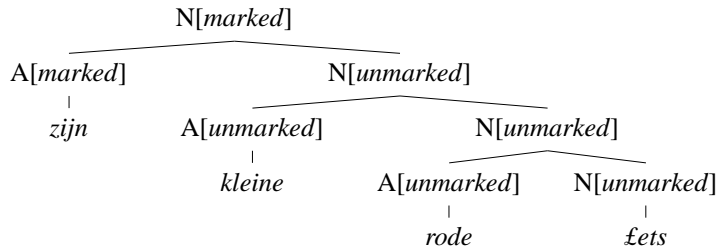
The common nouns receive the value *unmarked* in the lexicon, and the prenominal functors select an unmarked nominal; their own MARKING value can be of type *unmarked*, in which case they can be stacked, or it can be *marked*, in which case stacking is not allowed. For instance, if we treat the adjectives as unmarked and the determiners as marked, then we correctly predict that *kleine rode £ets* 'small-DECL red-DECL bike' and *deze rode £ets* 'this-DECL red-DECL bike' are well-formed, whereas *deze onze £ets* 'this-DECL our-DECL bike' and *rode deze £ets* 'red-DECL this-DECL bike' are not. In other words, we predict that determiners cannot be stacked and that they must precede the adjectives.

At this point, the extension of the use of the MARKING feature may look like a thinly disguised effort to re-introduce the distinction between adjectives and determiners. In practice, though, it does much more than that. For a start, the distinctions which are captured by the MARKING values are log-
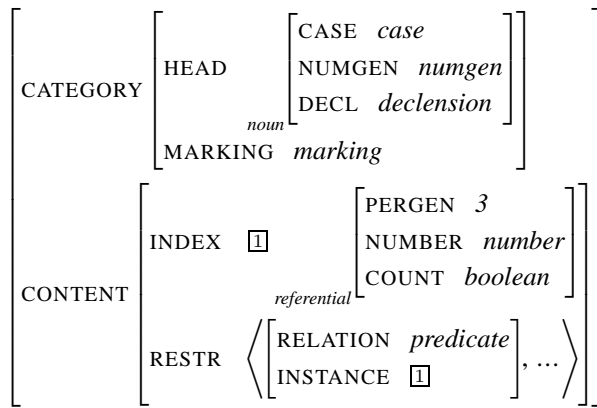
ically independent of the part of speech distinctions. As a consequence, we do not exclude the possibility that an adjective can be *marked* or that a determiner can be *unmarked*. As a matter of fact, we also leave open the option that nouns can be *marked*, which may be useful for the treatment of pronouns and proper nouns. Second, the distinction between *marked* and *unmarked* is only the tip of the iceberg. In order to model the rather intricate interactions between nominals and prenominals, I will employ a more complex hierarchy of MARKING values.
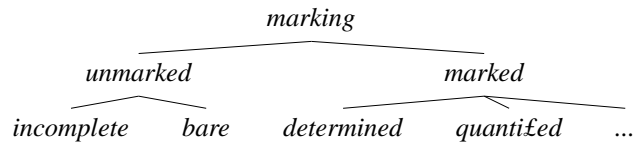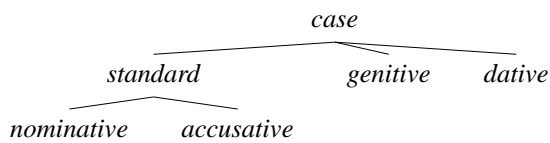

A special subtype of *unmarked* is the type *incomplete*; it is assigned to those nominals which are inherently incomplete, such as *witte goud* 'white-DECL gold'. As a consequence, we get a threefold distinction between nominals which must take a determiner (*incomplete*), nominals which may but need not take a determiner (*bare*), and nominals which may not take a determiner (*marked*). The subtypes of *marked* capture the distinction between the determiners in the strict sense, i.e. the possessives, the demonstratives and the de£nite article, and the quanti£ers, such as *elk* 'each' and *geen* 'no'. The relevance of this distinction will become clear in section 4.

17.4 A head-functor analysis of the Dutch NP

Starting from the assumption that the prenominals are head selecting functors, this section will provide a detailed account of the combination of a noun with its prenominal dependents. A major challenge is the prevention of overgeneration. The grammar should, for instance, accept *onze tafel* 'our-DECL table' and *een tafel* 'a table', while excluding *ons tafel* 'our table' and *alle tafel* 'all table'. To express the relevant constraints I will employ the following morpho-syntactic and semantic features.

$$
\begin{bmatrix}
\text{CATEGORY} & \begin{bmatrix} \text{HEAD} & \underset{noun}{\begin{bmatrix} \text{CASE} & case \\ \text{NUMGEN} & numgen \\ \text{DECL} & declension \end{bmatrix}} \\ \text{MARKING} & marking \end{bmatrix} \\
\text{CONTENT} & \begin{bmatrix} \text{INDEX} & \boxed{1} \ \underset{referential}{\begin{bmatrix} \text{PERGEN} & 3 \\ \text{NUMBER} & number \\ \text{COUNT} & boolean \end{bmatrix}} \\ \text{RESTR} & \left\langle \begin{bmatrix} \text{RELATION} & predicate \\ \text{INSTANCE} & \boxed{1} \end{bmatrix}, \dots \right\rangle \end{bmatrix}
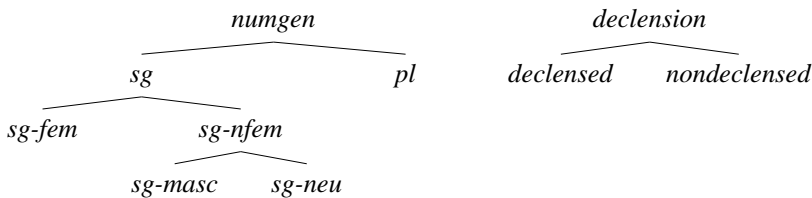\end{bmatrix}
$$

The HEAD value contains a number of features which are traditionally assumed to play a central role in the description of Dutch nominals, i.e. case, number, gender and declension. The inventory of CASE values is the same as for German.

```
                        case
          ┌──────────────┴───────────┐
      standard              genitive    dative
    ┌─────┴──────┐
nominative   accusative
```

Since the distinction between nominative and accusative is systematically neutralized for the common nouns, I have added the underspeci£ed value *standard*. Its more speci£c subtypes can be assigned when the nominal's case value is uni£ed with the selection requirements of an external selector: £nite verbs, for instance, select a nominative subject and most of the prepositions require an accusative object.

The NUMGEN feature provides information about grammatical number and gender. Since the gender distinction is systematically neutralized in plural nominals, I only apply it to the singular ones. The intermediate type for nonfeminine singular nouns is added to simplify the treatment of NP-internal agreement.

```
              numgen                         declension
        ┌───────┴───────┐              ┌─────────┴─────────┐
       sg              pl          declensed         nondeclensed
   ┌────┴─────┐
sg-fem     sg-nfem
        ┌─────┴─────┐
    sg-masc      sg-neu
```

The DECL(ENSION) feature signals whether the nominal contains a declensed form. This information is relevant since nominals with a declensed
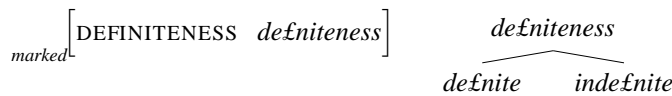
adjective do not combine in the same way with a determiner as nominals with a nondeclensed adjective. The mass noun *goud* 'gold', for instance, and the combination *wit goud* 'white gold' can be used used without determiner or with an indefinite determiner, but the combination *witte goud* 'white-DECL gold' must be preceded by a definite determiner. In the lexicon, the vast majority of nouns gets the underspecified value *declension*; this value is then replaced with a more specific one, when the prenominals are added, since they will usually require the nominal to be either declensed or nondeclensed.

Given the Head Feature Principle, the values of the HEAD features are propagated throughout the nominal projection. This implies that they are not only available for checking various kinds of NP-internal agreement, but also for checking constraints on its external distribution.

The MARKING values are not shared between a phrase and its head daughter, but rather between a phrase and its functor daughter. As such, they are the natural locus for capturing the distinction between definite and indefinite NPs. The relevance of this distinction can be illustrated with the following contrasts.
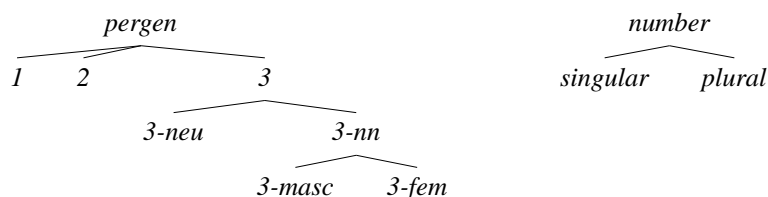
(3) Ik heb gisteren   [geen/hun paarden] gezien.
     I have yesterday [no/their   horses]   seen

     'I saw no/their horses yesterday.'

(4) Ik heb [er]   gisteren   [geen/*hun __] gezien.
     I have [GEN] yesterday [no/*their   __] seen

     'I saw none/*their (of them) yesterday.'

(5) Er   zijn [geen/*hun paarden] in de stal.
     There are [no/*their   horses]   in the stable

     'There are no/*our horses in the stable.'

The quantifying *er* can be extracted from an NP which is introduced by the indefinite *geen*, but not from an NP which is introduced by the definite *hun*. Similarly, the expletive *er* can anticipate an indefinite subject, but not a definite one. Since the definiteness value of the NP is determined by its determiner rather than by its nominal head, the simplest way of integrating this information is to include it in the MARKING value of the determiners.

$$\textit{marked}\begin{bmatrix}\text{DEFINITENESS} & \textit{definiteness}\end{bmatrix} \qquad \begin{array}{c} \textit{definiteness} \\ \overbrace{\qquad\qquad\qquad} \\ \textit{definite} \qquad \textit{indefinite} \end{array}$$

In terms of this feature, the possessives can be marked as definite and the quantifying *geen* 'no' as indefinite.

Turning to the semantic distinctions, I assume, just like Pollard and Sag (1994), that the indices are marked for person, number and gender, but since the gender distinction is systematically neutralized in the £rst and second person, I merge it with the person distinction, employing one feature PERGEN with the following inventory of values.

```
        pergen                          number
   ┌───────┴────────┐                    ┌──┴───┐
   1   2            3              singular    plural
           ┌────────┴────────┐
        3-neu              3-nn
                        ┌────┴────┐
                     3-masc    3-fem
```

These inventories bear an obvious resemblance to the one of the morpho-syntactic NUMGEN feature, but the distinctions which they capture are of another nature: they do not concern properties of the noun as such, but rather the mode of individuation of the noun's referent. To illustrate the difference, let us take the noun *meisje* 'girl-DIM'. Like all diminutive nouns, it is grammatically neuter, but for the purpose of pronominal reference it can be either neuter or feminine. Which of the two prevails, depends on the type of pronoun: for personal pronouns, both are possible, but for relative pronouns it must be neuter and for possessives it must be feminine.[5]

(6) [Dat meisje] heeft geen geluk; [het/ze/*hij] is alweer ontslagen.
     [That girl]   has no   luck; [it/she/*he] is again £red
     'That girl has no luck; she has been £red again.'

(7) Daar staat   [het meisje] [dat/*die] mijn broer   heeft verklikt.
     There stands [the girl]   [that/*who] my   brother has   betrayed
     'There is the girl that betrayed my brother.'

(8) [Dat meisje] heeft [haar/*zijn] broer   verklikt.
     [That girl]   has [her/*its]   brother betrayed
     'That girl has betrayed her brother.'

This demonstrates that the HEAD|NUMGEN value of *meisje* is unambiguously *sg-neu*, whereas its INDEX|PERGEN value is the disjunction of *3-neu* and *3-fem*.[6]

Since the indices concern the mode of individuation of NP referents, they are the natural locus for hosting the distinction between mass nouns and count

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[5]The exclusion of the neuter possessive is probably due to its homonymy with the masculine *zijn* 'its/his'; using this form for reference to a female individual would be misleading.

[6]A detailed argumentation for the need to distinguish between morpho-syntactic agreement and index agreement is provided in Kathol (1999); it contains examples from a host of different languages, including German, Spanish, French and Italian.

nouns. Typical of the count nouns is that their referents are individuated as discrete, and hence as countable. A noun, such as *paard* 'horse', for instance, can be combined with the numeral *één* 'one' in the singular and with the numeral *twee* 'two' in the plural. By contrast, mass nouns cannot be used in this way: both the singular *één goud* 'one gold' and the plural *twee gouden* 'two gold-PLU' are ungrammatical. To capture this distinction I will extend the INDEX values with the boolean feature [+/–COUNT].

$$
\begin{bmatrix}
\text{PERGEN} & pergen \\
\text{NUMBER} & number \\
\text{COUNT} & boolean
\end{bmatrix}_{index}
$$

For most nouns, the value is either positive or negative, but for some it is the underspeci£ed *boolean*; *glas* 'glass', for instance, is a mass noun, when it denotes a kind of material, as in *drie ton glas* 'three ton glass', but it is a count noun, when it denotes a recipient which is made of that material, as in *elk glas* 'each glass.

Summing up, the AVMs of the nominals have been enriched with a number of syntactic and semantic features, in terms of which we can express the constraints on their combination with prenominal dependents. Spelling out these constraints is the major objective of the rest of this section. I will £rst discuss the possessives and demonstratives (section 4.1), then the predicating adjectives (section 4.2) and £nally the quanti£ers (section 4.3).

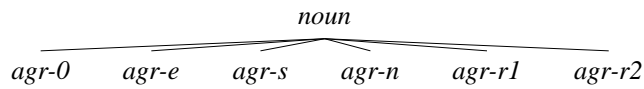### 17.4.1 The possessives and the demonstratives

The possessives and the demonstratives have much in common. They both select an unmarked nominal with a referential index and turn it into a marked NP, more speci£cally one of the type *determined*. As a consequence, the resulting NP is de£nite and inadmissible in positions which are reserved for inde£nite NPs.

$$
\begin{bmatrix}
\text{HEAD} \mid \text{SELECT} \mid \text{LOCAL} &
\begin{bmatrix}
\text{CAT} &
\begin{bmatrix}
\text{HEAD} & _{noun}\begin{bmatrix}\text{DECL} & declensed\end{bmatrix} \\
\text{MARKING} & unmarked
\end{bmatrix} \\
\text{CONTENT} \mid \text{INDEX} & referential
\end{bmatrix} \\
\text{MARKING} & _{determined}\begin{bmatrix}\text{DEFINITENESS} & de£nite\end{bmatrix}
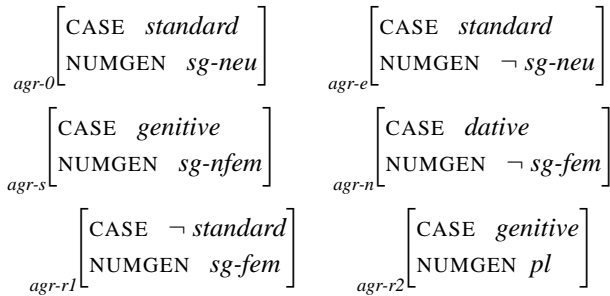\end{bmatrix}
$$

Another common property is that they require their nominal head to be declensed, also if they are not declensed themselves. Since their SELECT|…|DECL value is uni£ed with the DECL value of the nominal, they are compatible with nominals with the value *declensed*, as in *ons zwarte paard* 'our black-DECL horse', and with nominals with the underspeci£ed value *declension*, as in *ons*

paard 'our horse'; they are not compatible, though, with nominals with the value *nondeclensed*, as in **ons zwart paard* 'our black horse'.

Depending on their form, the determiners also impose constraints on the CASE and NUMGEN values of the nominals which they select. To model these I will assume the following partition for the objects of type *noun*.[7]

$$
\begin{array}{c}
noun \\
\hline
\text{agr-0} \quad \text{agr-e} \quad \text{agr-s} \quad \text{agr-n} \quad \text{agr-r1} \quad \text{agr-r2}
\end{array}
$$

The subsorts are associated with more specific values for CASE and NUMGEN.

$$
agr\text{-}0 \begin{bmatrix} \text{CASE} & standard \\ \text{NUMGEN} & sg\text{-}neu \end{bmatrix} \qquad agr\text{-}e \begin{bmatrix} \text{CASE} & standard \\ \text{NUMGEN} & \neg\ sg\text{-}neu \end{bmatrix}
$$

$$
agr\text{-}s \begin{bmatrix} \text{CASE} & genitive \\ \text{NUMGEN} & sg\text{-}nfem \end{bmatrix} \qquad agr\text{-}n \begin{bmatrix} \text{CASE} & dative \\ \text{NUMGEN} & \neg\ sg\text{-}fem \end{bmatrix}
$$

$$
agr\text{-}r1 \begin{bmatrix} \text{CASE} & \neg\ standard \\ \text{NUMGEN} & sg\text{-}fem \end{bmatrix} \qquad agr\text{-}r2 \begin{bmatrix} \text{CASE} & genitive \\ \text{NUMGEN} & pl \end{bmatrix}
$$

Given this partition we can now express the constraints which the different forms of the determiners impose on the nominal. The relevant forms are given below.

[–D,–C]	[+D,–C]	[+C]			
mijn		*mijnen*	*mijner*	*mijns*	my
ons	*onze*	*onzen*	*onzer*	*onzes*	our
zijn		*zijnen*	*zijner*	*zijns*	his
	deze		*dezer*		this
	die	*dien*	*dier*		that

The forms without case affix select a nominal in standard case. If they show variation for declension, as in *ons/onze*, then the form without affix ([–D,–C]) selects a singular neuter nominal (*agr-0*), whereas the one with the affix ([+D,–C]) selects a singular nonneuter or plural nominal (*agr-e*). This accounts for the contrast between *ons paard/*ezel/*paarden* 'our horse/*donkey/*horses' and *onze ezel/paarden/*paard* 'our-DECL donkey/horses/*horse'. If the determiner lacks a declensed form, then its [–D] form takes over the function of the [+D] one; forms like *mijn* 'my' and *zijn* 'his' are, hence, compatible with any nominal in standard case. By contrast, if the determiner lacks a nondeclensed form, its [+D] form does not take over

_____

[7]These six types form a partition: they are mutually distinct and together they cover the range of logical possibilities.
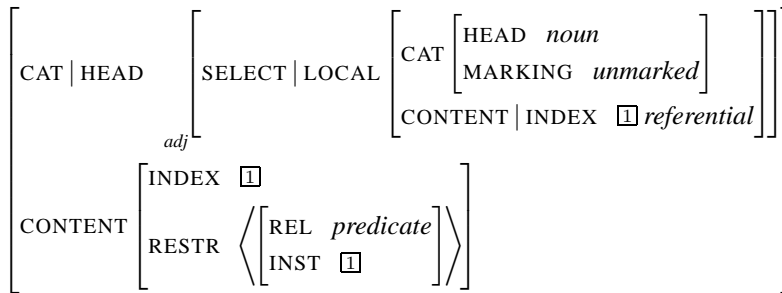
its function: *deze paard* is ungrammatical.[8]

The forms with a case af£x select a genitive or dative nominal. The forms with the *-s* af£x require a genitive which is singular masculine or neuter (*agr-s*), as in *het huis mijns vaders* 'the house my-GEN father-GEN' and *onzes inziens* 'our-GEN opinion-GEN'. The forms with the *-n* af£x select a nonfeminine dative (*agr-n*), as in *te mijnen behoeve* 'at my-DAT need-DAT'. The forms with the *-r* af£x are complementary to the two other ones: they select a singular feminine genitive, as in *de vrienden mijner tante* 'the friends my-GEN aunt', a singular feminine dative, as in *te zijner ere* 'to his-DAT honour-DAT', or a genitive plural, as in *één dezer dagen* 'one this-GEN days'. The former two are covered by *agr-r1* and the latter by *agr-r2*. The reason for making this distinction is that some of the prenominals have only one of them. The predicating adjectives, for instance, have *agr-r1*, but lack *agr-r2*.

Because of the uni£cation of the SELECT|…|CASE value of the determiner with the CASE value of the selected nominal, the addition of a determiner may have the effect of resolving underspeci£cation. The noun *ouders* 'parents', for instance, has the underspeci£ed value *case*, but *mijn ouders* 'my parents' is unambiguously *standard* and *mijner ouders* 'my-GEN parents' is unambiguously *genitive*.

17.4.2 The predicating adjectives

The adjectives which are treated in this section are those which select a nominal with a referential index and which denote a property which is predicated of that same index. A relevant example is the combination *black horse*, in which the adjective further restricts the denotation of the noun: $\{x \mid \langle horse(x), black(x)\rangle\}$.

$$
\begin{bmatrix}
\text{CAT} \mid \text{HEAD} \quad \begin{bmatrix} \text{SELECT} \mid \text{LOCAL} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD} \quad noun \\ \text{MARKING} \quad unmarked \end{bmatrix} \\ \text{CONTENT} \mid \text{INDEX} \quad \boxed{1}\, referential \end{bmatrix} \end{bmatrix}_{adj} \\
\text{CONTENT} \quad \begin{bmatrix} \text{INDEX} \quad \boxed{1} \\ \text{RESTR} \quad \left\langle \begin{bmatrix} \text{REL} \quad predicate \\ \text{INST} \quad \boxed{1} \end{bmatrix} \right\rangle \end{bmatrix}
\end{bmatrix}
$$

The distinctive property of the predicating adjectives is that the predicate which they express is independent of the predicate which is expressed by the nominal. An easy way to identify them is the relative clause test: if the combination [Adj N] can be paraphrased as [N Rel Adj Copula], then the ad-

---

[8]In this combination, *deze* is replaced by the demonstrative pronoun *dit*. Its nondeclensed counterpart *dees* is only used in dialects.

jective is predicating. For instance, since *een klein kind* 'a small child' can be paraphrased as *een kind dat klein is* 'a child that is small', the adjective is predicating. By contrast, since *een industrieel ingenieur* 'an industrial engineer' cannot be paraphrased as *een ingenieur die industrieel is* 'an engineer that is industrial', this adjective is not predicating.

Depending on their form, the predicating adjectives impose different constraints on the nominals which they select. To model them, I start from the following survey of forms.

[–D,–C]	[+D,–C]	[+C]		
goed	*goede*	*goeden*	*goeder*	good
koel	*koele*	*koelen*		cool
open				open

In terms of distribution, there is an important difference with the possessives and demonstratives: while the latter invariably require the nominal to be declensed, the predicating adjectives only require this when they are declensed themselves. If they are not declensed, they select a nominal with the DECLENSION value *nondeclensed*. Since the SELECT|...|DECL value of the adjective is unified with the DECL value of the selected nominal, the [–D] forms are compatible with nominals whose DECL value is *nondeclensed*, as in the combination of *groot* 'tall' with *zwart paard* 'black horse', as well as with nominals whose DECL value is the underspecified *declension*, as in the combination of *groot* 'tall' with *paard* 'horse', but they are not compatible with nominals whose DECL value is *declensed*, as in * *groot zwarte paard* 'tall black-DECL horse'. By contrast, the [+D] forms select a nominal with the value *declensed*, as in *grote zwarte ezel* 'tall-DECL black-DECL donkey'.

The CASE and NUMGEN constraints are similar to the ones of the determiners: the [–D,–C] forms select a singular neuter nominal in standard case (*agr-0*), as in *zwart/*zwarte paard* 'black horse', and the [+D,–C] forms require a singular nonneuter or plural nominal in standard case (*agr-e*), as in *zwarte ezel(s)* 'black-DECL donkey(s)'.[9]

$$
\begin{bmatrix}
\text{HEAD} \mid \text{SELECT} \mid \text{LOC} \mid \text{CAT}
\begin{bmatrix}
\text{HEAD} \quad agr\text{-}0 \begin{bmatrix} \text{DECL} & nondeclensed \end{bmatrix} \\
\text{MARKING} \quad \boxed{1}\ bare
\end{bmatrix} \\
\text{MARKING} \quad \boxed{1}
\end{bmatrix}
$$

---

[9]For adjectives which lack the declensed form, such as *open* 'open', the [–D] form takes over the function of the [+D] form.

$$
\left[\begin{array}{l}
\text{HEAD} \mid \text{SELECT} \mid \text{LOC} \mid \text{CAT} \begin{bmatrix} \text{HEAD} \quad _{agr\text{-}e}\begin{bmatrix} \text{DECL} & declensed \end{bmatrix} \\ \text{MARKING} \quad \boxed{1}\, bare \end{bmatrix} \\
\text{MARKING} \quad \boxed{1}
\end{array}\right]
$$

It may be worth adding that these constraints only hold for the predicating adjectives. If the adjective is not predicating, its nondeclensed form also combines with singular nonneuter nouns, even if there is a separate declensed form. For instance, in spite of the existence of the form *industriële*, it is the nondeclensed form which is used in *industrieel ingenieur* 'industrial engineer'. An interesting minimal pair is *een Vlaams volksvertegenwoordiger* 'a Flemish parlementarian' vs. *een Vlaamse volksvertegenwoordiger* 'a Flemish-DECL deputy'. Both are well-formed, but there is a difference in meaning: while the combination with the nondeclensed form denotes a member of the Flemish Parliament, the combination with the declensed form denotes a member of some Parliament (Flemish, Belgian, European, ...) who is Flemish. As a consequence, while the latter is a predicating adjective, the former is part of a single multi-word expression and hence non-predicating.

Another property of these AVMs which deserves special mention is the fact that they identify the MARKING value of the adjective with the one of the selected nominal. Stacking is hence allowed.

Turning to the forms with a case af£x, the ones with *-n* occur in singular nonfeminine datives, as in *van goeden huize* 'of good-DAT house-DAT', *in koelen bloede* 'in cool-DAT blood-DAT' and *ten eeuwigen dage* 'to-DAT eternal-DAT day-DAT'.

$$
\left[\begin{array}{l}
\text{HEAD} \mid \text{SELECT} \mid \text{LOC} \mid \text{CAT} \begin{bmatrix} \text{HEAD} \quad _{agr\text{-}n}\begin{bmatrix} \text{DECL} & declensed \end{bmatrix} \\ \text{MARKING} \quad \boxed{1}\, bare \end{bmatrix} \\
\text{MARKING} \quad \boxed{1}
\end{array}\right]
$$

The ones with the *-r* af£x occur in singular feminine genitives, such as *zaliger gedachtenis* 'holy-GEN remembrance', and in singular feminine datives, such as *van ganser harte* 'of whole-DAT heart-DAT', but not in plural genitives. A typical property of these forms is that they cannot be preceded by a determiner, cf. * *de zaliger gedachtenis*. In terms of our notation, this implies that their MARKING value is of type *marked*.[10]

---

[10]Since they are marked, they also have a de£niteness value. I assume that this value is *inde£nite*. The fact that NPs with an *-r* adjective cannot occur in the subject position of an existential clause does not provide evidence against this assumption, since this is due to their CASE value: genitives and datives do not appear in subject position.

$$
\begin{bmatrix}
\text{HEAD} \mid \text{SELECT} \mid \text{LOC} \mid \text{CAT}
\begin{bmatrix}
\text{HEAD} \quad _{agr\text{-}r1} \begin{bmatrix} \text{DECL} & \textit{declensed} \end{bmatrix} \\
\text{MARKING} \quad \textit{bare}
\end{bmatrix} \\
\text{MARKING} \quad _{marked} \begin{bmatrix} \text{DEF} & \textit{inde£nite} \end{bmatrix}
\end{bmatrix}
$$

The forms with the *-s* af£x are invariably incorporated, when they occur in prenominal positions, as in *goedsmoeds* 'good-GEN-courage-GEN' and *blootsvoets* 'bare-GEN-foot-GEN'. Their treatment is, hence, a matter of morphology rather than of syntax.

Together, the different forms cover four of the six combinations of CASE and NUMGEN, i.e. *agr-0, agr-e, agr-n* and *agr-r1*. To cover the remaining two, some of the declensed forms have acquired a secondary use. In singular nonfeminine genitives, for instance, it is the *-n* forms, which take over the function of the *-s* forms, as in *de geneugten des goeden levens* 'the pleasures the-GEN good-GEN life-GEN'.[11] A peculiar property of this form, though, is that it must be preceded by the *-s* form of a determiner. To model this, I assume that they mark the nominal as inherently incomplete.

$$
\begin{bmatrix}
\text{HEAD} \mid \text{SELECT} \mid \text{LOC} \mid \text{CAT}
\begin{bmatrix}
\text{HEAD} \quad _{agr\text{-}s} \begin{bmatrix} \text{DECL} & \textit{declensed} \end{bmatrix} \\
\text{MARKING} \quad \textit{unmarked}
\end{bmatrix} \\
\text{MARKING} \quad \textit{incomplete}
\end{bmatrix}
$$

In a similar fashion, it is the *-e* forms which take over the function of the *-r2* forms in plural genitives, as in *de problemen der rijke landen* 'the problems the-GEN rich-DECL countries'. Also here, the adjective has to be preceded by the *-r2* form of a determiner.

$$
\begin{bmatrix}
\text{HEAD} \mid \text{SELECT} \mid \text{LOC} \mid \text{CAT}
\begin{bmatrix}
\text{HEAD} \quad _{agr\text{-}r2} \begin{bmatrix} \text{DECL} & \textit{declensed} \end{bmatrix} \\
\text{MARKING} \quad \textit{unmarked}
\end{bmatrix} \\
\text{MARKING} \quad \textit{incomplete}
\end{bmatrix}
$$

While these additions £ll the obvious gaps, there remain some less conspicuous ones. For a start, since the bare forms of the adjectives ([–D,–C]) are only compatible with *nondeclensed* nominals of type *agr0*, i.e. singular neuter nominals in standard case, we still lack a form which combines with *declensed* nominals of type *agr-0*. This form is apparently the declensed one, as exempli£ed by *ons zwarte paard* 'our black-DECL horse'. To cover this use we need a third AVM for the *-e* forms of the adjectives.

---

[11] Also this form is sometimes incorporated, as in *'s anderendaags* 'the-GEN other-GEN-day-GEN'.

$$\left[\begin{array}{l} \text{HEAD} \mid \text{SELECT} \mid \text{LOC} \mid \text{CAT}\ \left[\begin{array}{l} \text{HEAD}\ _{\textit{agr-0} \vee \textit{agr-r1}}\ \left[\text{DECL}\ \textit{declensed}\right] \\ \text{MARKING}\ \textit{unmarked} \end{array}\right] \\[12pt] \text{MARKING}\ \textit{incomplete} \end{array}\right]$$

Also here, the MARKING value of the adjective accounts for the fact that *zwarte paard* is inherently incomplete. At the same time, since *incomplete* is a subsort of *unmarked*, stacking is allowed, as in *mijn kleine zwarte paard* 'my small-DECL black-DECL horse'.

The last AVM also covers the gap which results from the fact that the *-r1* forms of the adjectives are *marked* and hence incompatible with a determiner. As a consequence, if there is a determiner, the adjective has to take another form. The relevant one is—once again—the *-e* form, both in the genitive, as in *woordenboek der Nederlandse taal* 'dictionary the-GEN Dutch-DECL language' and in the dative, as in *ter meerdere eer en glorie* 'to-the-DAT more-DECL honour and glory'.

Surveying the paradigm, it can be concluded that the *-e* forms and the *-n* forms jointly £ll the gaps which are left by the other forms. For this purpose, though, they need the simultaneous presence of a determiner which makes the distinctions which are neutralised in the adjective.

Summing up, the combination of a predicating adjective with a nominal can have three possible MARKING values. In the majority of cases, it will be *bare*, which means that it may but need not take a determiner, but it can also be *marked* or *incomplete*. In the latter case, the derivation of a wellformed NP requires the addition of a de£nite determiner.

17.4.3   The quanti£ers

The quanti£ers select an unmarked nominal with a referential index and turn it into a quanti£ed object. The addition of *every* to *horse*, for instance, turns the nominal object $\{\text{x} \mid \langle \textit{horse}(\text{x}) \rangle\}$ into the quanti£ed object $\forall\,\text{x} \mid \langle \textit{horse}(\text{x}) \rangle$. Making use of the Q-STORE attribute of Pollard and Sag (1994) I will adopt the following format for the analysis.

$$
\begin{bmatrix}
\text{SYNSEM} \mid \text{LOC} \mid \text{CAT} &
\begin{bmatrix}
\text{HEAD} \mid \text{SELECT} \mid \text{LOC} &
\begin{bmatrix}
\text{CAT} &
\begin{bmatrix}
\text{HEAD} & noun \\
\text{MARKING} & unmarked
\end{bmatrix} \\
\text{CONTENT} & \boxed{1}\ nom\text{-}obj
\end{bmatrix} \\
\text{MARKING} \quad quanti\pounds ed
\end{bmatrix} \\
\text{Q-STORE} \quad
\left\{
\begin{bmatrix}
\text{DET} & semdet \\
\text{RESTIND} & \boxed{1}
\end{bmatrix}_{quant}
\right\}
\end{bmatrix}
$$

The quanti£ers form a large and heterogeneous class, but if we restrict attention to those which are in complementary distribution with the articles, we can limit them to the following ten.[12]

Type	Def	[–D,–C]	[+D,–C]		[+C]	
1	def	*elk*	*elke*			each
		ieder	*iedere*			every
		menig	*menige*			many a
2	def	AL	*alle*	*allen*	*aller*	all
		sommig	*sommige*			certain
3	indef		*ettelijke*			several
			verscheidene			several
			verschillende			several
4	indef	*geen*		*genen*	*gener*	no
		enig	*enige*		*eniger*	any

Semantically, there are four types of quanti£ers. The ones of the £rst type require a singular count nominal, as in *elk paard* 'each horse'. Combinations with mass nouns, as in *elk bier* 'each beer', are not necessarily ungrammatical, but have a nonstandard interpretation: the addition of the quanti£er triggers a shift from the usual [–COUNT] interpretation to a 'kind-of' interpretation. To model this, I assume that these quanti£ers have two AVMs: one in which they combine with a singular count noun to yield an interpretation which is represented by the usual PC formula $\forall x \mid <P(x)>$, and one in which they combine with a singular mass noun to yield an interpretation which can be represented as $\forall x \mid <kind\text{-}of\text{-}P(x)>$.

The quanti£ers of the second type are complementary to the ones of the £rst: they require either a singular mass noun, as in *alle aandacht* 'all attention', or a plural noun, as in *alle paarden* 'all horses' and *alle ingewanden* 'all intestines'. Their addition may have a disambiguating effect; in *alle glas*

---

[12]The form *al* is singled out by the use of small capitals, since it cooccurs with the de£nite article, as in *al de paarden* 'all the horses'. It will be treated separately below.

'all glass', for instance, the noun unambiguously denotes the total amount of glassy material and not the total amount of recipients which are made of that material.

The quantifers of the third type require a plural count nominal. The combination with a singular noun or a plural mass noun is not possible: nominals like *verscheidene paard* 'several horse' and *ettelijke ingewanden* 'several intestines' are not just semantically anomalous, but simply ill-formed.

The quantifers of the fourth type do not impose any constraints on the index of the nominal. They are equally compatible with mass nouns and count nouns, both in the singular, as in *geen bier* 'no beer' and *geen paard* 'no horse', and in the plural, as in *geen paarden* 'no horses' and *geen ingewanden* 'no intestines.

Orthogonal to the semantic distinction, there is the syntactic one between definite and indefinite quantifers. Compare, for instance, the definite *ieder* 'every' with the indefinite *geen* 'no'.

(9) Ik heb er   toen [geen/*iedere __] ontmoet.
     I   have GEN then [no/*every   __] met.

(10) Er   is geen/*iedere ezel   in de stal.
     There is no/*every   donkey in the stable.

Of the quantifers which are listed in the table, the ones of the first two types are definite, whereas the ones of the last two types are indefinite.

Turning to the morphological variation, the quantifers share the property of the predicating adjectives to require a declensed nominal if and only if they are declensed themselves. This accounts for the contrast between *elk zwart/*zwarte paard* 'each black horse' and *elke zwarte/*zwart ezel* 'each-DECL black-DECL donkey'. The CASE and NUMGEN constraints are the usual ones: the [–D,–C] forms select a singular neuter nominal in standard case (*agr-0*), as in *elk/*elke paard* 'each horse',[13] and the [+D,–C] forms require a singular nonneuter or plural nominal in standard case (*agr-e*), as in *elke ezel* 'each-DECL donkey' and *sommige ezels* 'certain-DECL donkeys'. Predictably, the quantifers of type 3, which only combine with plural nominals, lack the bare form, and the quantifers which lack the declensed form, such as *geen* 'no',[14] use the [–D] forms in their place, as in *geen zwarte ezel(s)* 'no black-DECL donkey(s)'.

Also the forms with a case affix show many similarities with the ones of the predicating adjectives. The *-s* forms are invariably incorporated, as

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[13]The definite *menig* 'many-a' occasionally combines with a nonneuter noun, as in *menig politicus* 'many a politician'.
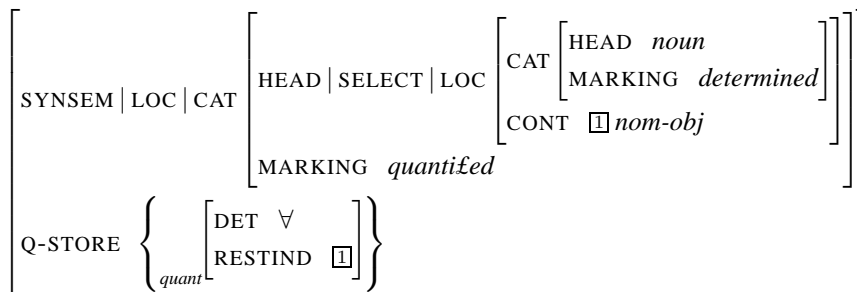
[14]The declensed form *gene* is a demonstrative, meaning 'yonder'.

in *enigszins* 'any-GEN-way-GEN'. The *-n* forms select a nonfeminine dative (*agr-n*), as in *te allen tijde* 'at all-DAT time-DAT' and *in genen dele* 'in no-DAT part-DAT', and the *-r* forms select a singular feminine dative, as in *te eniger tijd* 'at some-DAT time'. The only difference with the predicating adjectives concerns the use of the *-r* forms in plural genitives, as in *proletariërs aller landen* 'proletarians all-GEN countries'.

A special case is *al* 'all'. Morphologically, it is the nondeclensed counterpart of *alle*, but this contrast does not correlate with the usual constraints on the HEAD value of the selected nominal. Instead, the declensed form also combines with singular neuter nominals, as in *alle geduld* 'all-DECL patience', and what differentiates it from the nondeclensed form is its position in the NP: whereas the former is in complementary distribution with the determiners, the latter appears in the predeterminer position, as in *al hun paarden* 'all their horses'. For its analysis, I assume a right branching structure, as in

N[*quanti£ed*]
A[*quanti£ed*]   N[*determined*]
al   A[*determined*]   N[*unmarked*]
                hun   paarden
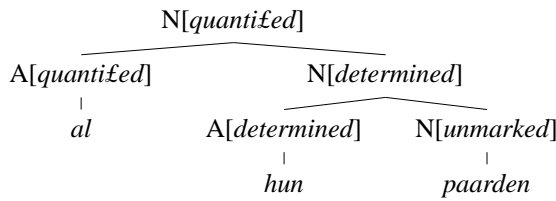
One reason for preferring it to a left branching structure is that the predeterminer can scope over the second conjunct in coordinate NPs, such as *al hun paarden en hun ezels* 'all their horses and their donkeys'. Typical of the predeterminer is that it selects an NP which is introduced by a de£nite determiner. Just like *alle*, it requires this NP to be either singular mass, as in *al die modder* 'all that mud', or plural, as in *al zijn inspanningen* 'all his efforts' respectively. The properties of the latter use can be spelled out as follows.

$$
\begin{bmatrix}
\text{SYNSEM} \mid \text{LOC} \mid \text{CAT} \begin{bmatrix} \text{HEAD} \mid \text{SELECT} \mid \text{LOC} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD} \quad noun \\ \text{MARKING} \quad determined \end{bmatrix} \\ \text{CONT} \quad \boxed{1} \; nom\text{-}obj \end{bmatrix} \\ \text{MARKING} \quad quanti£ed \end{bmatrix} \\
\text{Q-STORE} \quad \left\{ \begin{bmatrix} \text{DET} \quad \forall \\ \text{RESTIND} \quad \boxed{1} \end{bmatrix}_{quant} \right\}
\end{bmatrix}
$$

Stacking is correctly excluded because of the change of the MARKING value.

At this point, we can demonstrate why the inherently incomplete nominals can be combined with possessives or demonstratives, but not with quantifers. For a start, let us take the combination of a declensed adjective with a singular neuter noun, as in *zwarte paard* 'black-DECL horse'. This is compatible with the [–D,–C] forms of the determiners, since they select a declensed nominal, but not with the [–D,–C] forms of the quantifers, since they require a nondeclensed nominal; moreover, their [+D,–C] forms do not qualify either, since they require a singular nonneuter or plural nominal. A similar reasoning applies to the incomplete genitive *goeden levens* 'good-GEN life-GEN'. This nominal cannot be completed by a quantifer, since none of their forms qualify: the [–C] forms do not qualify, since they require a nominal in standard case, and of the [+C] forms the only ones which could qualify are the *-s* forms, but precisely those are lacking from the paradigm. By contrast, the possessives have such forms, and are hence compatible with the inherently incomplete genitive, as in *onzes goeden levens* 'our-GEN good-GEN life-GEN'.

17.5 Conclusion

The specifer treatment of the determiners in Pollard and Sag (1994) rests on a dichotomy between specifying determiners and modifying adjectives. For a language like Dutch this dichotomy causes more problems than it solves. As an alternative I have developed an analysis in which the prenominal specifers and adjuncts are uniformly treated as head selecting functors. The resulting analysis copes succesfully with the phenomena which are problematic for the specifer treatment. In work in progress the present analysis is extended to the articles, the numerals, the nominally used determiners and the use of NPs in prenominal position.

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