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Dimension Classifiers Mediating Nominal Modification

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Abstract

We present a novel analysis of attributive modification patterns like *a green colour car*, based on new data primarily from Dutch and Russian. We argue that the nominal element *colour* is a Dimension Classifier (DimCl) and is in a possessive part-whole relation with the noun *car*. These constructions show properties of inalienable possession. We show why DimCls cannot be viewed as silent nouns (contra Kayne 2005) and argue that these structures start out as *of*-modification of the type *a car of green colour*, with *car* the possessor. We propose that the postnominal constituent optionally moves to a prenominal functional projection that turns mass nouns into count nouns (i.e., SpecDivP; Borer 2005). This explains the novel observation that DimCl is impossible with mass nouns and pseudopartitives. We introduce a battery of tests to distinguish between a DimCl and a lexical N in these postnominal constituents and hold that DimCl involves nouns that pick an objective inherent dimension of the modified noun and must be overtly licensed. Being able to occur in the prenominal modification structure is a distinguishing property of DimCls. Kind nouns, although allowed prenominally, are shown not to belong to DimCls. Based on the divergent behaviour of material, origin and other lower modifiers (cf., the adjectival hierarchy of Scott 2002), we show that these modifiers contain a bound DimCl that is generated directly in SpecDivP, without involving a possessive relation. Finally, we present an overview of various semantic classes of modifiers showing their distribution in relation to DimCls.

Key words

classifiers; adjectives; attributive modification; dimension classifiers; Dutch; Russian

1. Introduction

Dutch allows at least three ways to introduce an attributive modifier showcased in (1), where (1a) presents a regular pattern with an adjacent (agreeing) modifier and noun. (1b) shows that *kleur* ‘colour’ can be inserted between the modifier and the noun. In this case the presence of the modifier appears to be obligatory to license it. In (1c) *kleur* ‘colour’ is introduced within an *of*-modification construction where its presence is obligatory.

- | | | | |
|-----|----|---|---------|
| (1) | a. | Pattern 1: prenominal modification [A N] | [Dutch] |
| | | <i>een groen-e auto</i> | |
| | | a green-COM car | |
| | | ‘a green car’ | |
| | b. | Pattern 2: prenominal modification [A N1 N2] | |
| | | <i>een *(groen-e) kleur auto</i> | |
| | | a green-COM colour car | |
| | | ‘a green car’ | |
| | c. | Pattern 3: postnominal <i>of</i> -modification [N2 of A N1] | |
| | | <i>een auto van (een) groen-e *(kleur)</i> | |
| | | a car of a green-COM colour | |
| | | ‘a car of a green colour’ | |

Notably, while these patterns hold for at least colour (1), shape (2) and size (3) modifiers, pattern 2 and 3 are problematic for modifiers of material (4).

- | | | | |
|-----|----|---|---------|
| (2) | a. | <i>een rond-e tafel</i> | [Dutch] |
| | | a round-COM table | |
| | | ‘a round table’ | |
| | b. | <i>een rond-e (vorm) tafel</i> | |
| | | a round-COM shape table | |
| | | ‘a round table’ | |
| | c. | <i>een tafel van (een) rond-e *(vorm)</i> | |
| | | a table of a round-COM shape | |
| | | ‘a table of a round shape’ | |
-
- | | | | |
|-----|----|--------------------------|---------|
| (3) | a. | <i>een klein-e broek</i> | [Dutch] |
| | | a small-COM trousers | |
| | | ‘small trousers’ | |

- b. *een klein-e (maat) broek*
a small-COM size trousers
'small trousers'
- c. *een broek van (een) klein-e *(maat)*
a trousers of a small-COM size
'trousers of small size'
- (4) a. *een houten stoel* [Dutch]
a wooden chair
'a wooden chair'
- b. *een houten (*materiaal) stoel*
a wooden material chair
'a wooden chair'
- c. *een stoel van hout / ?(houten materiaal)*
a chair of wood / wooden material
'a wooden chair'

Russian shows exactly the same pattern. The modifiers of colour (5), shape (6) and size (7) allow the three patterns in question, where the *of*-modification pattern is realised by genitive morphology; but material modifiers (8) differ.

- (5) a. *zel'on-yj avtomobil'* [Russian]
green-M.NOM car.NOM
'a green car'
- b. *zel'on-ogo cvet-a avtomobil'*
green-M.GEN colour-GEN car.NOM
'a green car'
- c. *avtomobil' zel'on-ogo *(cvet-a)*
car.NOM green-M.GEN colour-GEN
'a car of a green colour'
- (6) a. *krugl-yj stol* [Russian]
round-M.NOM table.NOM
'a round table'
- b. *krugl-oj form-y stol*
round-M.GEN form-GEN table.NOM
'a round table'
- c. *stol krugl-oj form-y*
table.NOM round-F.GEN shape-GEN
'a table of round shape'
- (7) a. *bol'sh-oj stol* [Russian]
big-M.NOM table.NOM
'a big table'
- b. *bol'sh-ogo razmer-a stol*
big-M.GEN size-GEN table.NOM
'a big table'
- c. *stol bol'sh-ogo razmer-a*
table.NOM big-M.GEN size-GEN
'a table of big size'
- (8) a. *derevjann-yj stul* [Russian]
wooden-M.NOM chair.NOM
'a wooden chair'
- b. **derevjann-ogo material-a stul*
wooden-M.GEN material-GEN chair.NOM
'a wooden chair'
- c. *stul *(iz) derev-a / ?(*iz) derevjann-ogo material-a*
chair.NOM from wood-GEN / from wooden-M.GEN material-GEN
'a chair from wooden material / from wood'

The little studied pattern 2 is interesting,¹ as the relation between the modifier and the noun is mediated by a semantically redundant noun the function and properties of which are not clear. In this paper we describe and analyse pattern 2 to contribute to our understanding of nominal modification and the syntax of nominal phrases. We identify the nouns that can occur as N1 in this construction, such as *colour*, *shape*, *size* as Dimension Classifiers (henceforth, DimCls). We show that only those nouns can occur as N1 that express an inherent objective dimension of the N2 they modify. We start the discussion in section 2 by looking at the properties and distribution of DimCls and arguing against a silent noun analysis of the type proposed in Kayne (2005) and propose a novel analysis in section 3 in which the prenominal pattern 2 is derived from the postnominal *of*-modification pattern 3 by movement of the constituent [P A DimCl] across the modified noun to the specifier of Div, a projection that turns mass nouns into count nouns (cf., Borer 2005). This explains the novel observation that pattern 2 is impossible with mass nouns and pseudopartitives. Section 4 discusses evidence for and consequences of this analysis, including multiple DimCls, (im)possible combinations of modifiers and DimCls, the impossibility of material and origin modifiers with DimCl, the distinct status of kind nouns as N1 in pattern 2, *wat voor* ‘what kind of’ questions, and the similarities and differences between our analysis and predicate inversion analyses such as Bennis et al. (1997) and Den Dikken (2006). Section 5 investigates the entire hierarchy of adjective types in the sense of Scott (2002) to establish which adjectives can and which adjectives cannot combine with a DimCl. Section 6 concludes. Our analysis is primarily based on the Dutch data, however, we often use it in comparison with the Russian data and relate to other languages such as Malay or Japanese.

We leave the prenominal agreeing modifier pattern 1 [A N] outside of the scope of the current paper and do not provide an analysis for it. Based on the existing literature we assume that the relation between the noun and the modifier in this case is that of predication. For an extensive discussion of this pattern, we refer the reader to e.g., Cinque (2010).

2. Defining Dimension Classifiers

2.1 Why do we call it a classifier?

The crucial property of elements like *colour*, *shape*, *size* is that they require a modifier to be licensed (9), (10).² In this they highly resemble numeral classifiers (e.g., Mandarin) which are only licit in the environment of a quantificational element (11).³ Despite the fact that DimCls clearly have a nominal nature, they do not have a lexical status. Their bleached semantics supports analysing them as classifiers.

(9)	a.	<i>*een</i>	<i>kleur</i>	<i>auto</i>	[Dutch]
		a	colour	car	
	b.	<i>*een</i>	<i>auto</i>	<i>van</i>	<i>kleur</i>
		a	car	of	colour
(10)	a.	<i>*cvet-a</i>	<i>avtomobil'</i>	[Russian]	
		colour-GEN	car.NOM		
	b.	<i>*avtomobil'</i>	<i>cvet-a</i>		
		car.NOM	colour-GEN		

¹ It is important to note that the pattern 2 belongs to the colloquial register in both Dutch and Russian (and English). This complicates collecting grammaticality judgements. We have the impressions that they get sometimes rejected on normative grounds.

² We will further see that the obligatory licenser does not have to be an adjective.

³ The descriptive literature mentions that in some languages certain adjectives require a classifier, which is usually taken from the inventory of numeral classifiers (Aikhenvald 2000), such as (i) for Thai.

(i)	[data from Aikhenvald 2000: 9.33]					[Thai]
	<i>nók</i>	<i>tua</i>	<i>sīi-khīaw</i>	<i>tua</i>	<i>jāj</i>	
	bird	CL	green	CL	big	
	‘the big green bird’					

Similarly to the Dutch or Russian data in question there is no quantificational element in (i) that could potentially license the classifier the presence of which becomes obligatory in the environment of the adjective. It is, however, also possible that the instances like (i) should be viewed as agreement (Aikhenvald 2000; Liu 2010, Biggs & Luo 2021).

- (11) [data from Jiang et al. 2022: 1a] [Mandarin]
 *(*liang*) *ben* *shu*
 two CL book
 ‘two books’

Yet, while in some cases the overt use of the DimCl can seem redundant (e.g., using overt *colour* when talking about colour modifiers), in cases like (12), when combining different DimCls with the same adjectives, the classifier takes care of picking the relevant dimension of the noun that is being modified. In the Dutch and Russian examples that we introduced in the beginning, the mediating noun-like element also functions as a provider of a dimension for modification (see also Español-Echevarría 2016 and Liu 2010), hence the term Dimension Classifier.

- (12) *Dit is geen mooi-e kleur trui, maar* [Dutch]
 this be.3SG.PRS no beautiful-COM colour sweater, but
een mooi-e vorm trui
 a beautiful-COM shape sweater
 ‘This is not a sweater of a beautiful colour, but of a beautiful shape’

This is similar to the role an adjectival classifier is argued to play in Shantou Teochew (Southern Min Sinitic), where it specifies the comparison class as in (13) and (14) (Biggs & Luo 2021). The fact that the sentence in (14) does not result in the semantic clash despite the negation comes close to the data discussed in Cinque (2010) as evidence for two different sources of modification, where negating the modifier from one source is not in complementary distribution with a modifier from another.

- (13) [data from Biggs & Luo 2021: 22, glosses adjusted] [Shantou Teochew]
 a. *Dua-gai gai nang*
 big-CL N.MOD person
 ‘A tall and strong person (compared to typical people)’
 b. *Dua-tsia gai nang*
 big-CL N.MOD person
 ‘A tall and strong person (compared to taller, stronger people, implied to be basketball or baseball players)’
- (14) [data from Biggs & Luo 2021: 23, glosses adjusted] [Shantou Teochew]
Yi moi dua-tsia, yi ho dua-gai
 3SG NEG big-CL 3SG very big-CL
 ‘He’s not tall (for a basketball player), but he’s tall (for typical people).’

Apart from adjectival modifiers, DimCls can also be licensed by relative clauses (15b), demonstratives and possessives (15c,d). Crucially, however, DimCls cannot be licensed by determiners (15c,d) or numerals (15e).

- (15) (i) Adjectival modifier or relative clause [Dutch]
 a. *Ik heb een *(groen-e) kleur auto gekocht*
 I have.1SG.PRS a green-COM colour car buy.PTCP
 ‘I bought a green colour car’
 b. *Ik heb een kleur ijs gegeten*
 I have.1SG.PRS a colour.COM ice.cream.N eat.PTCP
 *(*die nieuw is*)
 that.COM new be.3SG.PRS
 ‘I ate a colour of ice cream that is new’
- (ii) Demonstrative, possessive, but not (in)definite determiners
 c. *Ik heb deze/*dit/*de/*een kleur ijs*
 I have.1SG.PRS this.COM/this.N/the.COM/a colour.COM ice.cream.N
gekocht
 buy.PTCP
 ‘I bought this colour ice cream’
- d. *Daar rijdt mijn/*de kleur auto*
 there go-3SG.PRS my/the colour car
 ‘There goes a car of my colour’
- (iii) A numeral alone cannot license a Dimension Classifier

- e. *drie* **(groen-e)* *kleur* *auto-s*
 three green-COM colour car-PL
 ‘three green cars’

Importantly, the demonstrative in (15c) and the possessive pronoun in (15d) only modify the Dimension Classifier (N1), not the noun (N2). For example, (15d) does not mean that the car is mine, it only means that the car has a colour that is my (favourite) colour.

The morphosyntactic properties of Dimension Classifiers in (16) also show that the licensing adjective and demonstrative modify the classifier (N1), not N2. Numerals at the same time only scope over lexical nouns. In (16b) *auto-s* and not *kleur* has plural marking. The optionality of the adjective in (16c) shows that we are no longer dealing with a DimCl here. This is also supported by the fact the verb has an agreement relation with *kleuren* and not *ijs*, hence the former is the head noun in this construction. Consequently, in (16d) *kleuren* ‘colour-PL’ is a noun, hence plural agreement on the verb while in (16e) it is a DimCl, hence the verb agrees with the noun *auto-s* (i.e., also plural).

- (16) (i) Adjectives and demonstratives agree in gender with the DimCl (= N1), [Dutch]
 not with the noun (N2)
- a. *Ik heb* *een/deze/*dit* *groen*(-e)* *kleur* *ijs*
 I have.1SG.PRS a/this-COM/this-N green-COM colour-COM ice.cream.N
gegeten
 eat.PTCP
 ‘I ate a green colour of ice’
- (ii) Numerals agree with N2, not with the Dimension Classifier
- b. *Er* *staa-n* *drie* *groen-e* *kleur* *auto-s* *op* *het plein*
 there stand-PL three green-COM colour car-PL on the square
 ‘There are three green colour cars on the square’
- (iii) If N1 is plural (agreement with a numeral or plural demonstrative), it is a noun, not a DimCl
- c. *Er* *ligg-en* *drie* *(groen-e)* *kleur-en* *ijs* *in de koelkast*
 there lay-PL three green-PL colour-PL ice.cream.SG in the fridge
 ‘There are three green colours of ice cream in the fridge’
- d. *Er* *ligg-en* *deze* *(groen-e)* *kleur-en* *ijs* *in de koelkast*
 there lay-PL these-PL green-PL colour-PL ice.cream.SG in the fridge
 ‘There are these green colours of ice cream in the fridge’
- (iv) A demonstrative agrees in number with the DimCl (N1), not with the noun (N2)
- e. *deze* *kleur*(-en)* *auto-s* *staa-n* *op* *straat*
 these-PL colour(-PL) car-PL stand-PL at street
 ‘Cars of this colour are on the street’

The data in (15) and (16) show that in the dimension classifier construction under discussion, demonstratives, possessives and adjectives are a natural class in that they are all able to license a Dimension Classifier and are in a close (agreeing) syntactic relation with it. We argue in this paper that [Dem/Poss A DimCl] is one constituent.

Similarly to Dutch, in Russian a DimCl can be licensed by an adjective, a demonstrative or a possessive (17a). Numerals cannot license DimCls (17b). Unlike Dutch, Russian does not allow a bare prenominal DimCl to be licensed by a relative clause (17c).⁴ We note that postnominally this is possible (17d).

- (17) a. *zel'on-ogo / et-ogo / mo-ego* *cvet-a* *avtomobil'* [Russian]
 green-M.GEN / this-M.GEN / my-M.GEN colour-GEN car.NOM
 ‘a green/this/my colour car’
- b. **dv-uh* *cvet-ov* *avtomobil'*
 two-GEN colour-PL.GEN car.NOM
- c. *On* *kupi-l* **(tak-ogo)* *cvet-a* *mašin-y kotor-yj*
 he buy-3SG.M.PST such-M.GEN colour-GEN car-ACC which-ACC
em-u *posovetova-li*
 he-DAT advise-PL.PST
 ‘He bought a car of the colour that they advised him’

⁴ We leave an explanation of this difference between Russian and Dutch for future research.

- d. *On* *kupi-l* *mašin-y* *cvet-a* *kotor-yj* *em-u*
 he buy-3SG.M.PST car-ACC colour-GEN which-ACC he-DAT
 posovetova-li
 advise-PL.PST
 ‘He bought a car of the colour that they advised him’

2.2 Against a silent noun analysis

The observation that some adjectives can be followed by an element like *colour* (18) stems from Kayne (2005). According to him, colour modifiers always presuppose the presence of a functional element that is defined as a silent noun: an element that can be phonologically null, but the presence of which is encoded in the structure. A silent noun analysis of similar constructions is also adopted for, e.g., Malay (Español-Echevarria 2016), Romanian (Tănase-Dogaru 2021), Japanese (Nagano & Shimada 2015). In the analysis introduced by Kayne (2005), the adjective *green* is a weak antecedent and has [+colour] feature (see Her & Tsai 2015 for arguments against this).

- (18) [data from Kayne 2005: 13] [English]
 John bought a green (colour) car yesterday

Kayne (2005) derives the evidence for the presence of the silent noun from (19), for which he argues that the article *a* is licensed by COLOUR.⁵

- (19) [data from Kayne 2005: 14] [English]
 John’s car is a bright green

An indefinite article is indeed required in English if *colour* is overtly present (20a), however the ungrammaticality of *of* in (20b) suggests that we cannot assume a silent COLOUR there.

- (20) a. *John’s cars are (of) a bright green colour* [English]
 b. *John’s cars are (*of) a bright green*

As also noted in Kayne (2005) (fn. 2) if the article is licensed by COLOUR that is always present in the structure, we would expect the article to be present if the referent is plural, but this is clearly not the case (21).

- (21) **John has a green cars* [English]

The silent noun analysis of the elements in question predicts a free variation between overt and silent forms, which is not the case as the data above already shows. This is also supported by a number of other facts, that will be crucial for our analysis. Firstly, unlike English which does not have gender agreement, Dutch (22) shows that if the genders of the classifier and the noun are different, the modifier will agree with the DimCl if it is present and with the noun in the absence of DimCl. The silent noun analysis would predict no differences in gender patterns between (22a) and (22b). The same holds for Russian (23).

- (22) a. *een* *groen-e* *kleur* *boek* [Dutch]
 a green-COM colour.COM book.N
 ‘a green colour book’
 b. *een* *groen* *boek*
 a green.N book.N
 ‘a green book’
- (23) a. *krasn-ogo* *cvet-a* *knig-a* [Russian]
 red-M.GEN colour-M.GEN book-F.NOM
 ‘a red colour book’
 b. *krasn-aja* *knig-a*
 red-F.NOM book-F.NOM
 ‘a red book’

Secondly, DimCl is not allowed when modifying a mass noun (24a) or a measure noun in the pseudopartitive construction (24a), while modification without a DimCl is allowed in both cases (24b, 25b) (see section 4.1 for the analysis of these patterns).

⁵ Henceforth we adopt the convention to write silent elements in capital letters from Kayne (2005).

- (24) a. *blauw-e* (**kleur*) *water* [Dutch]
 blue-COM colour water
 ‘blue water’
 b. *blauw water*
 blue water
 ‘blue water’
- (25) a. *een zwart-e* (**kleur*) *emmer appel-s* [Dutch]
 a black-COM colour bucket apple-PL
 ‘a black bucket of apples’
 b. *een zwart-e* *emmer appel-s*
 a black-COM bucket apple-PL
 ‘a black bucket of apples’

Thirdly, Russian data shows that when a DimCl is inserted, genitive marking on the modifier and the DimCl is obligatory even in the prenominal position (26a). When the DimCl is not present, no genitive marking is licensed (26b).

- (26) a. *zel'on-ogo* *cvet-a* *avtomobil'* [Russian]
 green-M.GEN colour-GEN car.NOM
 ‘a green car’
 b. *zel'on-yj* (**cvet*) *avtomobil'*
 green-M.NOM colour car.NOM
 ‘a green car’

Finally, the semantics of the structures with and without a DimCl is different, which is also not expected under the silent noun analysis. The presence of a DimCl necessarily triggers a type/kind reading (cf., e.g., Carlson 2005) while in its absence both type/kind and token/unit interpretations are available. The obligatory kind interpretation of the structures with a DimCl is supported by (27a) which shows that they are ungrammatical in a context requiring a high degree of referentiality and by (27b) which shows that only an indefinite determiner is allowed in *of*-modification pattern.

- (27) a. **De groen-e* *kleur auto* *rijd-t* *op* [Dutch]
 the green-DEF colour car ride-3SG.PRS on
straat
 street
 b. *een auto van* (*een*)/(**de*) *groen-e* *(*kleur*)
 a car of a/the green-COM colour
 ‘a car of a green colour’

Additionally, the weak antecedent proposal (Kayne 2005) gives no insight into the grammaticality of cases like (28). Under the analysis of Kayne (2005) *kleur* ‘colour’ is unexpected here because *mooi* ‘nice’ does not have [+colour] and hence should not be able to license *colour*.

- (28) *een mooi-e* *kleur trui* [Dutch]
 a nice-COM colour sweater
 ‘a sweater of a nice colour’

Based on these arguments we conclude that the silent noun analysis does not capture the distribution and semantics of the elements in question and makes some wrong predictions (for more arguments against considering COLOUR as a silent noun see Her & Tsai 2015). In what follows we develop a novel proposal that captures the properties of the structures in question.

2.3 Which nouns can be Dimension Classifiers?

2.3.1 Introduction

Elements that we have so far identified as Dimension Classifiers can also occur as nouns. This raises the question which types of nouns can be Dimension Classifiers, and why. We have seen above in (1)-(8) that *colour*, *size*,

shape belong to the class of nouns in Dutch and Russian that can function as Dimension Classifiers, while *material* is different. This is similar to the distribution of nouns that can occur as postnominal modifiers in the English construction in (29). The latter construction is briefly mentioned in Zamparelli (2014), who refers to Partee (1986; 2002) for the observation that attribute nouns like *colour*, *size*, *weight*, *age*, *length*, *price* are possible in the construction in (29), while *material*, *design*, *property*, *virtue* and *origin* are not. Partee does not mention *shape*, but is clear that *shape* can also occur in (29) (e.g., *a car that shape*).

- (29) [data from Partee 2002: 372, ex. 15] [English]
*a dress that size/that colour/that length/that price/*that material/*that design/?that pattern/*that origin*

As Partee correctly points out, the construction in (29) is not possible in Dutch. Even if there is a preposition *van* ‘of’ between the first noun and the demonstrative in Dutch, this does not make the construction similar to (29), as there is no restriction on the types of noun, e.g., *een product van die origine/van dat materiaal* ‘a product of that origin/of that material’ is fine. Russian parallels Dutch in this respect. Partee remains agnostic as to the question of which property distinguishes attribute nouns that can occur as postnominal modifiers in (29) and nouns that cannot.

2.3.2 Defining properties of Dimension Classifiers

We propose the generalisation in (30):

- (30) In the prenominal pattern 2 [A N1 N2] (e.g., *een groene kleur auto* ‘a green colour car’), where N1 is a Dimension Classifier, N1 must express an objective inherent dimension of N2 and should be overtly licensed.

It is immediately clear that *colour*, *shape*, *size* fall under this generalisation. We show in section 4.5 that material and origin modifiers as well as relational nouns involve inherent dimension classification due to their distinct morphosyntax. In section 5 we will discuss the entire hierarchy of adjectives (in the sense of Scott 2002) and show that the semantic generalisation in (30) indeed holds. The examples in (31a-f) show that DimCls require an overt licenser in the form of an adjectival modifier, a relative clause, a demonstrative or a possessive. Although the surface order of prenominal DimCl pattern is parallel to the pseudopartitive constructions in Dutch (i.e., two adjacent nouns) (30g) shows that pseudopartitives do not require a licensing adjective. The same holds for Russian (32a-e).

- (31) a. *een *(groen-e) kleur auto* [Dutch]
a green-COM colour car
‘a green car’
b. *een kleur auto *(die mooi is)*
a colour car that nice be.3SG.PRS
‘a car with a nice colour’
c. *een *(rond-e) vorm tafel*
a round-COM shape table
‘a round table’
d. *een vorm tafel *(die mooi is)*
a shape table that nice be.3SG.PRS
‘a table with a nice shape’
e. *deze kleur auto*
this.COM colour car
‘a car of this colour’
f. *mijn kleur auto*
my colour car
‘a car of my colour’
g. *een (groen-e) emmer appel-s*
a green-COM bucket apple-PL
‘a (green) bucket of apples’
- (32) a. **(zel'on-ogo cvet-a avtomobil'* [Russian]
green-M.GEN colour-GEN car.NOM
‘a green colour car’

- b. *et-ogo* *cvet-a* *avtomobil'*
this-M.GEN colour-GEN car.NOM
'this colour car'
- c. *mo-ego* *cvet-a* *avtomobil'*
my-M.GEN colour-GEN car.NOM
'my colour car'
- e. *On kupi-l* **(tak-ogo)* *cvet-a* *mašin-y kotor-yj*
he buy-3SG.PST such-M.GEN colour-GEN car-NOM which-NOM
em-u posovetova-l-i
him-DAT advise-PST-PL
'He bought a car of the colour that they advised him'
- e. *(zel'on-oje)* *vedro* *malin-y*
green-F.NOM bucket.NOM raspberry-GEN
'a (green) bucket of raspberries'

The postnominal modificational pattern in (1c), i.e., pattern 3 [N2 of A N1] repeated in (33a), shares with pattern 2 the property that the adjective cannot be left out, unless a relative clause is added (33b). The question arises whether this pattern uniquely identifies Dimension Classifiers, just like the prenominal pattern does. The examples in (33c-e) show that the answer to this question is negative. Although *schoonheid* 'beauty' behaves postnominally exactly as *kleur* 'colour' (33c,d), it cannot occur prenominally (33e), regardless of the presence of an adjective (or relative clause). This is so because it does not express an objective inherent property and therefore cannot occur as a classifier.

- (33) a. *een auto van (een) *(groen-e) kleur* [Dutch]
a car of a green colour
'a car of a green colour'
- b. *een auto van *(een) kleur die je zelden zie-t*
a car of a colour that you seldom see-2SG.PRS
'a car with a colour that you seldom see'
- c. *een stad van (een) *(groot-e) schoonheid*
a city of a great-COM beauty
'a city of great beauty'
- d. *een stad van *(een) schoonheid die je zelden zie-t*
a city of a beauty that you seldom see-2SG.PRS
'a city of a beauty that you seldom see'
- e. **een (groot-e) schoonheid stad*
a great-COM beauty city
Intended interpretation: 'a city of great beauty'

It is clear from (33c-e) that nouns that cannot occur as Dimension Classifiers (33e) do occur in the postnominal pattern 3 (33c,d). This entails that the categorial status of *kleur* 'colour' in (33a) is potentially ambiguous between a noun and a Dimension Classifier. Note in passing that the obligatory presence of an adjective or a relative clause cannot be used in isolation as a diagnostic for classifierhood in postnominal position, as this requirement holds for nouns as well (33c,d). The same is true for another remarkable property of the pattern in (33a-d), the optional presence of the indefinite article when there is an adjective, and its obligatory presence when there is a relative clause. We leave the explanation of the latter property for future research.

The generalisation in (30) predicts that a noun that can occur in both the prenominal pattern 2 and the postnominal pattern 3, and that has both an inherent objective and non-inherent non-objective meaning, is ambiguous postnominally but loses its non-inherent non-objective meaning prenominally. This prediction is borne out. The modifier *groot formaat* in (34a) can either mean that the scholar is important, an evaluative interpretation, or that he is a physically big person, a substantive interpretation. The substantive interpretation is marked for (34a) but clearly possible given (34b). Conversely, the evaluative interpretation is more obvious with *geleerde* 'scholar' as the modified noun than with *enveloppe* 'envelope'. As (34c,d) show, the evaluative interpretation is lost in the prenominal pattern 2.

- (34) a. *een geleerde van groot formaat* [Dutch]
a scholar of great stature

	1. ‘an important scholar’	evaluative
	2. ‘a big scholar’ (marked)	subjective
b.	<i>een enveloppe van groot formaat</i> an envelope of large format	
	1. ‘an important envelope’ (marked)	evaluative
	2. ‘a large envelope’	subjective
c.	<i>een groot formaat geleerde</i> a large stature scholar	
	1. #‘an important scholar’	#evaluative
	2. ‘a big scholar’	subjective
d.	<i>een groot formaat enveloppe</i> a large format envelope	
	1. #‘an important envelope’	#evaluative
	2. ‘a large envelope’	subjective

The adjective *groot* ‘big’ in its subjective interpretation (34c,d) can occur with a Dimension Classifier, while it cannot occur with a Dimension Classifier in its evaluative interpretation. This comes close to Español-Echevarría (2016) who argues for Malay that evaluative adjectives involve indirect modification (a reduced relative clause) and do not allow a (silent) Dimension Classifier. However, the analysis proposed by Español-Echevarría (2016) for Malay makes a three-way semantic distinction between adjective types and argues on this basis that certain adjective types cannot occur with a Dimension Classifier. This is fundamentally different from our analysis (see section 3), according to which adjectives can always occur with a dimension classifier (provided that they have the right features), but certain nouns (e.g., *material*, *origin*) cannot be classifiers. In our analysis, evaluative modifiers can also occur with a DimCl provided they combine with a noun that can function as a DimCl. Hence, we claim that the Dimension Classifier patterns are dependent on the DimCl and not on the modifier. This way the impossibility of the evaluative interpretation of (34c,d) results only from the fact that DimCls denote an objective dimension of the noun. The prenominal position is only open for DimCls hence modifiers introduced this way can only modify an inherent objective dimension of the noun. Even an evaluative modifier introduced via a prenominal DimCl will be modifying an objective dimension of N. Impossible adjective - classifier combinations are then due to the feature specifications of adjectives and classifiers respectively (see section 3.3). In this way our analysis of adjectival modification is conceptually similar to that of Cinque (2010) who argues for the two sources of adjectival modification showing that in principle all adjectives can originate in either source. The properties are, therefore, not dependent on the type of the adjective, but on its source. While it remains to be seen how our proposal is compatible with that of Cinque, we also claim that the properties are not dependent on the modifier itself, but on the element it combines with, namely DimCl.

We have shown in this section that Dimension Classifiers have the following properties:

- They can occur as N1 in the prenominal pattern 2 (A N1 N2) and this is the defining property of DimCls;
- They must be overtly licensed (e.g. by an adjective, a relative clause, a demonstrative or a possessive);
- They must express an objective inherent dimension of N2;
- In pattern 3 (N2 of A N1), N1 is ambiguous between a Dimension Classifier and a noun;
- The ability to occur in pattern 3 is not a defining property of Dimension Classifiers.

This captures the fact that nouns such as *schoonheid* ‘beauty’, *pracht* ‘beauty’, *belang* ‘importance’ etc, do occur in the postnominal pattern 3 as nouns, but cannot occur in the prenominal pattern 2 since they can never be DimCls.⁶

3. Proposal

3.1 The inalienable possessive nature of DimCl

There are strong arguments to relate the Dimension Classifier construction (prenominal pattern 2) to inalienable possessives, and more specifically, as we will see below, to part-whole relations. As (35a-c) show, the relation between DimCl and the noun it modifies can be expressed in a possessive *have*-construction. We have seen that

⁶ In view of the parallels between Russian and Dutch reported in this paper we assume that the prenominal syntactic structure is the same in the two languages. It remains to be seen how independent differences, such as overt case morphology, the absence of determiners, and focus based reorderings in Russian must be incorporated in the structure of the two languages.

the prenominal pattern 2 (32) and the postnominal pattern 3 (33) have the same condition. Note that the preposition *van* ‘of’ in pattern 3 expresses possession too.⁷

- (35) a. **De auto heeft een/de kleur* [Dutch]
 the car have.3SG.PRS a/the colour
 b. *De auto heeft een groen-e kleur*
 the car have.3SG.PRS a green-COM colour
 ‘The car has a green colour’
 c. *De auto heeft een kleur die mooi is*
 the car have.3SG.PRS a colour that nice be.3SG.PRS
 ‘The car has a nice colour’

Sentences expressing inalienable possession show exactly the same properties.

- (36) a. **De man heeft een/de arm* [Dutch]
 the man have.3SG.PRS an/the arm
 b. *De man heeft een pijnlijk-e arm*
 the man have.3SG.PRS a painful-COM arm
 ‘The man has an arm that hurts’
 c. *De man heeft een arm die pijn doe-t*
 the man have.3SG.PRS an arm that pain do-3SG.PRS
 ‘The man has an arm that hurts’

It is clear that the DimCl expresses the possessee, and the modified noun is the possessor. In constructions with the preposition *van* ‘of’, the possessor normally is the complement of *van* (37).

- (37) a. *de pijnlijk-e arm van de man* [Dutch]
 the hurting-COM arm of the man
 b. *de groen-e kleur van de auto*
 the green-COM colour of the car
 c. *Deze auto is van haar*
 this car be.3SG.PRS of her
 ‘This car is hers’
 d. **Zij is van deze auto*
 she be.3SG.PRS of this car

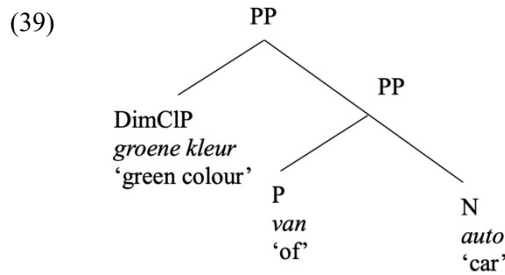
We find the reverse with DimCls, both at the sentential level and in the postnominal pattern 3. The possessee is the complement of *van* ‘of’, instead of the possessor (38a,b), while in the prenominal pattern 2 there does not seem to be an element that expresses the possessive relation at all (38c).

- (38) a. *De auto is van groen-e kleur* [Dutch]
 the car be.3SG.PRS of green-COM colour
 ‘The car is of green colour’
 b. *een auto van groen-e kleur*
 a car of green-COM colour
 ‘a car of green colour’
 c. *een groen-e kleur auto*
 a green-COM colour car
 ‘a green colour car’

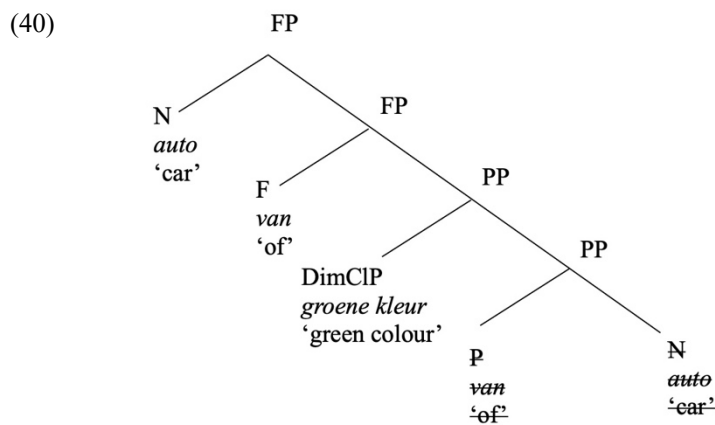
3.2 Derivation

We assume that a possessive structure is the basis of prenominal pattern 2, and that the possessor starts out in the canonical position of possessors, as a complement of P (39).

⁷ The restrictions in (35a, 36a) are well-known from the literature on English (e.g., Keenan 1987, Partee 1999).



The postnominal pattern 3 is derived from (39) by movement of *van* 'of' to a functional head F, followed by movement of N *auto* 'car' to SpecFP. The nominal nature of the entire constituent is determined by functional projections on top of FP (not expressed in (40)).



The derived structure in (40) is the input for the derivation of the two related sentential patterns in (41).

- (41)
- | | | | | | | | |
|----|--------------------------------|-------------|--------------|------------|----------------|----------------|----------------------|
| a. | <i>De</i> | <i>auto</i> | <i>is</i> | <i>van</i> | <i>(een)</i> | <i>groen-e</i> | <i>kleur</i> [Dutch] |
| | the | car | be.3S.PRS | of | a | green-COM | colour |
| | 'The car is of a green colour' | | | | | | |
| b. | <i>De</i> | <i>auto</i> | <i>heeft</i> | <i>een</i> | <i>groen-e</i> | <i>kleur</i> | |
| | the | car | have.3S.PRS | a | green-COM | colour | |
| | 'The car has green colour' | | | | | | |

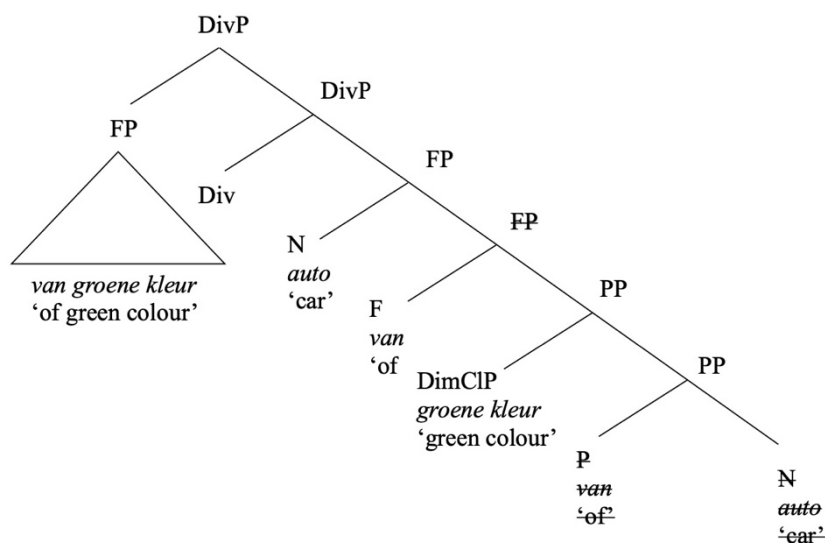
To derive (41a), N should be replaced by a DP. This DP moves to SpecFP, then to the Spec of the projection of the copula BE and finally to SpecTP to check case and agreement. The pattern in (41b) is the result of incorporation of *van* 'of' into the copula BE, along the lines of Freeze (1992) and Kayne (1993).

We propose that the prenominal pattern 2 (A N1 N2) is derived from (40) by movement of the lower FP to the specifier of a functional projection dominating the higher FP, namely, the specifier of DivP, the projection that turns mass nouns into count nouns (Borer 2005) (42).⁸ This is immediately supported by the facts in (43), which show that the landing site of the DimCl-complex has to be lower than the numeral. In the next section we provide further arguments for the fact that [P A DimCl] moves to SpecDivP based on the distribution of Dimension Classifiers with mass nouns.

From the structure in (42) it is immediately clear that DimCl cannot be the head in *een groene kleur auto*. The DimCIP is hence not a fully-fledged extended nominal projection. It can host adjectival modifiers, possessives and demonstratives, but has no position for numerals and number marking.

⁸ Since there does not seem to be independent evidence against movement of a segment (of FP in this case), we consider this unproblematic. Alternatively, an additional projection could be assumed such that it is a maximal projection that moves.

(42)



- (43) a. *die twee groen-e kleur auto-s* [Dutch]
 these two green-COM colour car-PL
 'these two cars of green colour'
- b. **die groen-e kleur twee auto-s*
 these green-COM colour two car-PL

3.3 The features of DimCl: (Im)possible A-DimCl combinations

The feature composition of DimCls and adjectival modifiers ensures possible and impossible combinations. We have seen that the modifier always agrees with the DimCl in gender (see section 2.1). DimCls are lexically specified for gender and modifiers get a gender value from the DimCl. DimCls also have a [type] feature which ensures a type reading (see section 2.2). Crucially, both DimCls and modifiers also have a [dimension] feature that corresponds to their semantic class. This is, e.g., [dimension: colour] for both *kleur* 'colour' and *groen* 'green'. If the values for [dimension] match, DimCl and modifier can be combined (44a), but if they don't, this leads to an impossible combination (44b) due to feature clash (in (44b) *rond* has [dimension: shape] and *kleur* has [dimension: colour]). (44c) shows that there are also modifiers which do not have a valued [dimension] feature. In this case they can be combined with any DimCl and get their [dimension] value from the DimCl.

- (44) a. *een groen-e kleur auto*
 a green-COM colour car
 'a car of a green colour'
- b. **een rond-e kleur auto*
 a round-COM colour car
- c. *een interessant(-e) maat / vorm / kleur stoel*
 a interesting(-COM) size / shape / colour chair
 'a chair of an interesting size/shape/colour'

4. Evidence and consequences

4.1 Modification of mass nouns

One of our arguments against the silent noun analysis (Kayne 2005) was that DimCl in prenominal position is not allowed with mass nouns (section 2.2, example (23)). The data in (45) shows that mass nouns only allow two of the three patterns, which is at first sight unexpected under our analysis given that we have established a derivational relation between pattern 3 with postnominal *of*-modification pattern and pattern 2, the prenominal DimCl pattern.

- (45) a. *blauw water* [Dutch]
 blue.N water

- ‘blue water’
- b. **blauw-e* *kleur* *water*
 blue-COM colour water
- c. *water van (een) blauw-e *(kleur)*
water of a blue-COM colour
 ‘water of a blue colour’

The ungrammaticality of (45b) must be structural since, exactly like count nouns, mass nouns form a possessive relation with the DimCl (46a) and in the rest allow exactly the same patterns (46, 47).

- (46) a. *water heeft een blauw-e kleur* [Dutch]
 water have.3SG.PRS a blue-COM colour
 ‘Water has blue colour’
- b. *water is van blauw-e kleur*
 water be.3SG.PRS of blue-COM colour
 ‘Water is of a blue colour’
- c. *water is blauw*
 water be.3SG.PRS blue
 ‘Water is blue’
- (47) a. *de auto heeft een groen-e kleur* [Dutch]
 the car have.3SG.PRS a green-COM colour
 ‘The car has green colour’
- b. *de auto is van groen-e kleur*
 de car be.3SG.PRS of green-COM colour
 ‘The car is of a green colour’
- c. *de auto is groen*
 the car be.3SG.PRS green
 ‘The car is green’

We note, however, that a prenominal position for the DimCl becomes immediately available if we form a count denotation by means of an indefinite article (48a) or plural inflection (48b). Following Borer (2005) we take both the indefinite determiner and the plural inflection to be hosted in the head of DivP, which is structurally present with count nouns but necessarily absent with mass nouns. Consequently, the presence or absence of DivP is responsible for the possibility of having a DimCl in prenominal position.

- (48) a. *een blauw-e kleur water* [Dutch]
 a blue-COM colour water
 ‘a blue water’
- b. *blauw-e kleur water-s*
 blue-COM colour water-PL
 ‘blue waters’

Russian, parallel to Dutch (45b,c), does not allow the DimCl complex in prenominal position in the mass-only environment (49a), but it is possible in the postnominal position (49b).⁹

- (49) a. **Rakovina poln-a sin-ego cvet-a vod-y* [Russian]
 bathtub full-F blue-GEN colour-GEN water-GEN
 ‘The bathtub is full of blue water’
- b. *Rakovina poln-a vod-y sin-ego cvet-a*
 bathtub full-F water-GEN blue-GEN colour-GEN
 ‘The bathtub is full of blue water’

The proposed movement of the A-DimCl complex (i.e., FP in (42)) to SpecDivP also immediately explains the impossibility of a prenominal DimCl with the measure noun in pseudopartitives (50a), which behave exactly like mass nouns in allowing *of*-modification (50b) and building a possessive relation with the noun (50c). We follow a mononimal analysis of pseudopartitives (e.g., Selkirk 1977, Khrizman 2016), where measure N is analogous to the mensural classifier that is generated in #P in Borer (2005), the specifier of which hosts numerals and

⁹ Since Russian does not have articles, there is no conclusive way to test the cooccurrence of DimCl's with mass nouns. Hence, we cannot be entirely sure whether in (49) *voda* is a mass noun.

quantifiers. #P dominates DivP, hence the impossibility to have Modifier + DimCl + mensural classifier. Russian has exactly the same pattern for pseudopartitives (51).

- (50) a. *een zwart-e (*kleur) emmer appel-s* [Dutch]
a black-COM colour bucket apple-PL
'a black bucket of apples'
- b. *een emmer appel-s van groen-e *(kleur)*
a bucket apple-PL of green-COM colour
'a green bucket of apples'
(ambiguous: 'a bucket of green apples')
- c. *De emmer appel-s heeft een groen-e kleur*
the bucket apple-PL have.3SG.PRS a green-COM colour
'The bucket of apples has a green colour'
- (51) a. **čern-ogo cvet-a korzin-a eževik-i* [Russian]
black-GEN colour-GEN bucket-NOM blackberry-GEN
b. *korzin-a eževik-i čern-ogo cvet-a*
bucket-NOM blackberry- GEN black-GEN colour-GEN
'a black bucket of blackberries'
(ambiguous: 'a bucket of black blackberries')
- c. *Korzin-a eževik-i ime-et čern-yj cvet*
bucket-NOM blackberry-GEN have-3SG.PRS black-NOM colour.NOM
'The bucket of blackberries has black colour.'

4.2 How does *P van 'of'* disappear during the derivation?

The preposition *van* 'of' seems to magically disappear in the derivational step depicted in (42). After all, *van* is obligatorily present in the postnominal pattern 3 [N2 of A N1], while it is obligatorily absent in the prenominal pattern 2 [A N1 N2] for Dutch. This is in need of clarification.

We would like to note first that the Russian facts immediately support the claim that the prenominal pattern 2 is derived from the postnominal pattern 3. In Russian, genitive marking on the modifier and the DimCl is obligatory both in prenominal and postnominal position (52). Genitive marking in Russian plays the role of *van* 'of' in Dutch. It establishes the possessive relation between DimCl and N, and it makes it possible to combine DimCl with this N. Having a nominal nature, DimCl can never directly combine with an N (see e.g., Croft 1990; Bhat 1994; Wetzter 1996; Beck 2002; Baker 2003 for strong cross-linguistic evidence that nouns cannot directly combine with nouns). This is also the reason why we take pattern 3, postnominal *of*-modification, as the initial order and pattern 2, prenominal DimCl, as the derived one. When combining two nominal elements, N2 is expected to get genitive and not N1. If (52a) is an underived order genitive case on the modifier and the DimCl is completely unexpected.

- (52) a. *zel'on-ogo cvet-a avtomobil'* [Russian]
green-M.GEN colour-GEN car.NOM
'a green car'
- b. *avtomobil' zel'on-ogo *(cvet-a)*
car.NOM green-M.GEN colour-GEN
'a car of a green colour'

There is independent support for the claim that Dutch *van* 'of' can disappear as a result of movement of a DimCl containing constituent. In Dutch, the preposition *van* 'of' is obligatorily present in predicative position (53a), unlike English (cf., *This shirt is a nice colour* from Partee 2002: 372, ex. 16c). If the predicate in (53a) is questioned, *van* 'of' becomes optional (53b). This holds for all nouns that can occur as a prenominal DimCl. Some further examples are given in (53c-f). On the other hand, *van* 'of' cannot be omitted when ordinary *van*-PPs are questioned (53g-h). We take the facts in (53) to strongly support our analysis.¹⁰

- (53) a. *De auto is *(van) (een) groen-e kleur* [Dutch]
the car be.3SG.PRS of a green-COM colour

¹⁰ It remains to be explained, though, why the absence of *van* 'of' is obligatory in the prenominal DimCl pattern 2, while it is optional in the wh-questions in (53b,d,f).

- b. ‘The car is of a green colour’
(Van) welke kleur is de auto?
 of which colour be.3SG.PRS the car
- c. ‘What colour is the car?’
*De tafel is *(van) (een) rond-e vorm*
 the table be.3SG.PRS of a round-COM form
- d. ‘The table is of a round shape’
(Van) welke vorm is de tafel?
 of which form be.3SG.PRS the table
- e. ‘What shape is the table?’
*Het shirt is *(van) een groot-e maat*
 the shirt be.3SG.PRS of a large-COM size
- f. ‘The shirt is of a big size’
(Van) welke maat is het shirt?
 of which size be.3SG.PRS the shirt
- g. ‘What size is the shirt?’
*De auto is *(van) deze vrouw*
 the car be.3SG.PRS of this-COM woman
- h. ‘The car is of this woman’
**(Van) wie is de auto?*
 of who be.3SG.PRS the car

4.3 Multiple DimCIs

The movement of FP to SpecDivP creates the expectation that multiple DimCIs are impossible in the prenominal position, since there is only one DivP available in the extended functional domain of a noun (cf., Español-Echevarria (2016) on Malay which does not allow multiple modifiers introduced this way). This prediction is indeed borne out. While multiple DimCIs are possible when introduced via *of*-modification (pattern 3) as well as prenominally (pattern 2), the strict ordering that we find with attributive adjectives without DimCI (54a,b) (in the sense of Scott 2002; Cinque 2010) is lost (54d-g). We take these cases to be the instances of asyndetic coordination, like (54c). In asyndetic coordination, multiple occurrences of DivP are possible.

- (54) a. *een klein-e groen-e auto* [Dutch]
 a small-COM green-COM car
 ‘a small green car’
- b. **een groen-e klein-e auto*
 a green-COM small-COM car
- c. *een groen-e, klein-e auto*
 a green-COM small-COM car
 ‘a green, small car’
- d. *een klein-e maat groen-e kleur auto*
 a small-COM size green-COM colour car
 ‘a small green car’
- e. *een groen-e kleur klein-e maat auto*
 a green-COM colour small-COM size car
 ‘a small green car’
- f. *een auto van een groen-e kleur van een*
 a car of a green-COM colour of a
klein-e maat
 small-COM size
 ‘a car of a green colour of a big size’
- g. *een auto van een klein-e maat van een*
 a car of a small-COM size of a
groen-e kleur
 green-COM colour
 ‘a car of a small size of a green colour’

4.4 A note in DivP, inalienable possession and part-whole relations

We have shown in section 2.3 that nouns that do not express an objective inherent property of the noun that they modify cannot occur as DimCl in the prenominal pattern 2, although they can occur in the postnominal pattern 3. Such nouns have in common with DimCl that they are in a possessive relation with the modified noun (54). A possessive relation between N1 and N2 is thus not a sufficient condition for N1 to be able to occur as a prenominal DimCl, as (55c) shows.

- (55)
- | | | |
|----|---|---------|
| a. | <i>een stad van groot-e schoonheid¹¹</i> | [Dutch] |
| | a city of great-COM beauty | |
| | ‘a city of great beauty’ | |
| b. | <i>een auto van groen-e kleur</i> | |
| | a car of green-COM colour | |
| | ‘a car of green colour’ | |
| c. | <i>*een groot-e schoonheid stad</i> | |
| | a great-COM beauty city | |
| d. | <i>een groen-e kleur auto</i> | |
| | a green-COM colour car | |
| | ‘a green colour car’ | |
| e. | <i>De stad heeft een groot-e schoonheid</i> | |
| | the city have.3SG.PRS a great-COM beauty | |
| | ‘The city has great beauty’ | |
| f. | <i>De auto heeft een groen-e kleur</i> | |
| | the car have.3SG.PRS a green-COM colour | |
| | ‘The car has green colour’ | |

We have argued in section 3.1 that DimClS show the same licensing conditions (w.r.t. determiners, adjectives, relative clauses) as the objects of HAVE in inalienable possession constructions. This is also true for nouns that cannot occur as DimCl and hence does not distinguish them (56).

- (56)
- | | | |
|----|--|---------|
| a. | <i>*De stad heeft (een/de) schoonheid</i> | [Dutch] |
| | the city have.3SG.PRS a beauty | |
| b. | <i>De stad heeft een groot-e schoonheid</i> | |
| | the city have.3SG.PRS a great-COM beauty | |
| | ‘The city has great beauty’ | |
| c. | <i>De stad heeft een schoonheid die je zelden zie-t</i> | |
| | the city have.3SG.PRS a beauty that you seldom see-3SG.PRS | |
| | ‘The city has beauty that you see seldom’ | |

This is why we have concluded that only those nouns qualify as DimClS that can express an objective inherent dimension of the modified noun. If we say that there is a part-whole relation between DimCl and the modified noun, we can better understand the role of Div. The function of Div in the nominal spine is to divide the mass expressed by the noun into parts such that it can be counted. DimCl should be seen as an element that specifies those parts.

4.5 Material modifiers, origin modifiers and relational nouns

As was noted in the Introduction, material modifiers cannot occur with a DimCl in Dutch and Russian. The relevant examples are repeated below. The examples (57f-i) and (58g-j) show that there is no possessive/part-whole or predicative relation between the property and the modified noun.

- (57)
- | | | |
|----|---------------------------------------|---------|
| a. | <i>een hout-en stoel</i> | [Dutch] |
| | a wood-en chair | |
| | ‘a wooden chair’ | |
| b. | <i>een hout-en (*materiaal) stoel</i> | |

¹¹ The fact that *schoonheid* ‘beauty’ is morphologically complex is irrelevant, as its near synonym *pracht* ‘beauty’ is impossible in pattern 2 in (55c) as well.

	a	wood- <i>en</i> material	chair	
		‘a wooden chair’		
c.	<i>een</i>	<i>katoen-en</i>	(* <i>stof</i>)	<i>jurk</i>
	a	cotton- <i>en</i>	stuff	dress
		‘a cotton dress’		
d.	<i>een</i>	<i>stoel</i>	<i>van</i>	<i>hout</i> / ?(<i>hout-en</i> <i>materiaal</i>)
	a	chair	of	wood / wood- <i>en</i> material
		‘a wooden chair’		
e.	<i>een</i>	<i>jurk</i>	<i>van</i>	<i>katoen</i> / ?(<i>katoen-en</i> <i>stof</i>)
	a	dress	of	cotton/cotton- <i>en</i> stuff
		‘a dress from cotton/cotton material’		
f.	* <i>De</i>	<i>stoel</i>	<i>heeft</i>	<i>hout-en</i> <i>materiaal</i>
	the	chair	have.3SG.PRS	wood- <i>en</i> material
g.	* <i>De</i>	<i>jurk</i>	<i>heeft</i>	<i>katoen-en</i> <i>stof</i>
	the	dress	have.3SG.PRS	cotton- <i>en</i> stuff
h.	* <i>De</i>	<i>stoel</i>	<i>is</i>	<i>hout(-en)</i>
	the	chair	be.3SG.PRS	wood(- <i>en</i>)
i.	* <i>De</i>	<i>jurk</i>	<i>is</i>	<i>katoen(-en)</i>
	the	dress	be.3SG.PRS	cotton(- <i>en</i>)_
(58)	a.	<i>derevjann-yj</i>	<i>stul</i>	[Russian]
		wooden-M.NOM	chair.NOM	
		‘a wooden chair’		
	b.	<i>hlopkov-oje</i>	<i>plat’-je</i>	
		cotton-N.NOM	dress-NOM	
		‘cotton dress’		
	c.	* <i>derevjann-ogo</i>	<i>material-a</i>	<i>stul</i>
		wooden-M.GEN	material-GEN	chair.NOM
	d.	* <i>hlopkov-ogo</i>	<i>material-a</i>	<i>plat’-je</i>
		cotton-M.GEN	material-GEN	dress-NOM
	e.	<i>stul</i>	*(<i>iz</i>)	<i>derev-a</i> / ?(*(<i>iz</i>) <i>derevjann-ogo</i> <i>material-a</i>)
		chair.NOM	from	wood-GEN / from wooden-M.GEN material-GEN
		‘a chair from wooden material / from wood’		
	f.	<i>plat’-je</i>	*(<i>iz</i>)	<i>hlopk-a</i> / ?(*(<i>iz</i>) <i>hlopkov-ogo</i> <i>material-a</i>)
		dress-NOM	from	cotton-GEN / from cotton-M.GEN material-GEN
		‘a dress is from cotton / from cotton material’		
	g.	* <i>stul</i>	<i>ime-et</i>	<i>derevjann-yj</i> <i>material</i>
		chair.NOM	have-3SG.PRS	wooden-M.NOM material.NOM
		intended: ‘a chair has wooden material’		
	h.	* <i>plat’-je</i>	<i>ime-et</i>	<i>hlopkov -yj</i> <i>material</i>
		dress-NOM	have-3SG.PRS	cotton-M.NOM material.NOM
		intended: ‘a dredd has cotton material’		
	i.	* <i>stul</i>	<i>derevjan-en</i>	
		chair.NOM	wooden-M.SHORT	
	j.	* <i>plat-je</i>	<i>hlopkov-o</i>	
		dress-NOM	cotton-N.SHORT	

The crucial observations are:

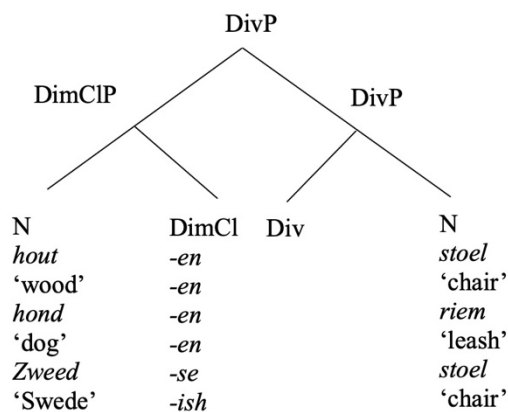
- (i) There is no possessive relation between the material modifier and the noun (57f,g; 58f,g);
- (ii) Unlike attributive adjectives such as *groen* ‘green’, there is no predicative relation between material modifiers and the noun (57h,i; 58i,j);¹²
- (iii) It is not possible to have a free-standing Dimension Classifier with material modifiers.

Given our generalisation in (30), it is unexpected at first sight that *materiaal/stof* cannot be DimCl, as they express an inherent dimension of the noun. Nevertheless, the properties (i-iii) can be captured if we assume that the *-en* suffix, which is typical for all material modifiers in Dutch (*ijzer-en* ‘iron-*en*’, *papier-en* ‘paper-*en*’, etc), is a DimCl

¹² Russian makes a distinction between short and long form of adjectives in predicative position. We follow (Babby 2010) here and assume that long forms are in fact attributive modifiers of an empty noun and short forms are predicative. The data shows that, as expected, short forms are not available for the material modifiers.

itself and generated in SpecDivP (59). We can maintain that every DimCl needs to be licensed, in this case by the nominal stem of the material modifier. The impossibility of the postnominal *of*-modification pattern 3 then follows from the fact that there is no possessive relation between the material modifier and the noun. We analyse *hout* ‘wood’ in cases like (57d; 58e) as nouns. As expected, they can then be modified by an A+DimCl themselves (*een stoel van een goede kwaliteit hout* ‘a chair from a good quality wood’). The nominal status of *hout* ‘wood’ in (57d; 58e) is parallel to that of *belang* in *een artikel van belang* ‘an article of interest’ (cf., section 2.3).

(59)



Dutch also has another modification environment in which the *-en* suffix is used, namely, compounding (60). These cases resemble material modification in that they do not allow a DimCl in prenominal or postnominal positions, do not form a possessive relation with the N and are not allowed predicatively.¹³

- (60) a. *tomat-en-soep / hond-en-riem / haz-en-nest* [Dutch]
 tomato-en-soup / dog-en-leash / hare-en-nest
 ‘tomato soup / dog leash / hare hole’
- b. *soep van tomaat / riem van een hond / nest van een haas*
 soup of tomato / leash of a dog / nest of a hare
 ‘tomato soup / dog leash / hare hole’
- c. **soep van tomaat(-en) stof*
 soup of tomato-en stuff
nest of hare-en kind
- d. *?soep heeft tomaat / *riem heeft een hond /*
 soup have.3SG.PRS tomato / leash have.3SG.PRS a dog /
**nest heeft een haas*
 nest have.3SG.PRS a hare
- e. **Soep is tomat-en / *riem is hond-en / *nest*
 soup be.3SG.PRS tomato-en / leash be.3SG.PRS dog-en / nest
is haz-en
 be.3SG.PRS hare-en

Based on these properties we tentatively argue that *-en* in Dutch compounds in the same DimCl as in case of material modifiers. Literature often analysis *-en* in Dutch compounds as a linking morpheme (e.g., De Belder 2017, Booij 2019) or as a noun class marker (De Belder 2023). Lipták & Cremers (2023) however show that these compounds have phrasal status and also explicitly suggest that we are here dealing with the same morpheme as in the case of material modifiers. Additional evidence for the proposed analysis of Dutch compounds comes from Russian, where these structures have the morphological form of regular modifiers and still behave like material modifiers (61).

- (61) a. *tomat-n-yj sup / soba-ch-ij povodok* [Russian]
 tomato-n-M.NOM soup.NOM / dog-ch-M.NOM leash.NOM /
kroli-ch'ja nor-a

¹³ There are different semantic relations possible between the first and the second parts of the compound (cf., Booij 2019), hence it is not always possible to create the respective ungrammatical examples like in (60c).

	rabbit- <i>ch</i> -F.NOM	hole-NOM			
	'tomato soup / dog leash / rabbit hole'				
b.	<i>sup</i>	<i>iz</i>	<i>tomat-ov</i> /	<i>povodok</i>	(<i>dl'ja</i>)
	soup.NOM	from	tomato-PL.GEN /	leash.NOM	for
	<i>sobak-i</i> / <i>nor-a</i>		(<i>dl'ja</i>)	<i>krolik-a</i>	
	dog-GEN / hole-NOM		for	rabbit-GEN	
	'soup made of tomatoes / a leash for a dog / a hole for a rabbit'				
c.	* <i>sup</i>	<i>ime-et</i>	<i>tomat-y</i>		
	soup.NOM	have-3SG.PRS	tomato-PL.GEN		
d.	* <i>nor-a</i>	<i>ime-et</i>	<i>krolik-a</i>		
	hole-NOM	have-3SG.PRS	rabbit-GEN		

The situation with origin modifiers is very similar but not identical to material modifiers. Origin expresses an objective inherent dimension of a noun, so we expect an origin related DimCl to be possible. Origin modifiers in Dutch are usually formed with a suffix *-s* or *-isch* added to a stem that may coincide with the word for a person from that origin (e.g., *Zweed-s* 'Swedish', *Noor-s* 'Norwegian', *Ier-s* 'Irish', *Tsjech-isch* 'Czech', *Russ-isch* 'Russian') or with the country (e.g., *Nederland-s* 'Dutch'). If these suffixes are generated as DimCl in the specifier of DivP, supported by a nominal stem, the analysis is parallel to that of material modifiers. Interestingly, while material modifiers cannot be used predicatively (57h,i), origin modifiers can: *Deze stoel is Zweeds* 'This chair is Swedish' in Dutch. We assume that the origin suffixes *-s* and *-isch* have a genitive feature that makes it possible for origin modifiers to be used predicatively.¹⁴ The *-en* suffix of material modifiers does not have a genitive feature, so material modifiers require *van* 'of' when used predicatively (62b). Likewise, A+DimCl requires *van* 'of' when used predicatively (62c). In *De stoel is van Zweedse origine* 'The chair is of Swedish origin' and *De stoel heeft een Zweedse origine* 'The chair has a Swedish origin', *origine* is a noun modified by a [Modifier DimCl], identical to how *hout* is being modified in *een tafel van een goede kwaliteit hout* 'a table of a good quality wood'. The only difference between the two is that in the former DimCl is realised as a bound morpheme. Russian shows exactly the same pattern in not allowing prenominal modification, but has patterns that look like postnominal *of*-modification (*stul švedskogo proishoždenija* 'a chair of a Swedish origin') and possessive relation (*Stul imeet švedskoje proishoždenije* 'The chair has Swedish origin'). Similarly to Dutch, we hold here that *proishoždenije* 'origin' is a lexical N in these structures.

(62)	a.	<i>Deze stoel is</i>	<i>Zweed*(-s)</i>	[Dutch]
		this chair be.3SG.PRS	Swede-s	
		'This chair is Swedish'		
	b.	<i>Deze stoel is</i>	*(<i>van</i>) <i>hout</i>	
		this chair be.3SG.PRS	of wood	
		'This is a wooden chair'		
	c.	<i>Deze stoel is</i>	*(<i>van</i>) <i>groen-e</i>	<i>kleur</i>
		this chair be.3SG.PRS	of green-COM	colour
		'This chair is of a green colour'		

The patterns we have discussed so far in this section are based on the clear-cut morphological pattern of Dutch compounds, material and origin modifiers. At the same time, we have shown that Russian is parallel to Dutch in the distributional properties that these modifiers exhibit. It is also the case that (most of the) Russian origin modifiers are formed with the same suffix *-sk* (e.g., *ispan-sk-ij* 'Spain-sk-M', *golland-sk-ij* 'Holland-sk-M'). We take this suffix to be structurally parallel to *-s* in Dutch. The *-sk* suffix in Russian seems to have a wider use and often occurs in modifiers that are derived from nouns, which, hence, includes origin and material modifiers.¹⁵ This also holds for relational adjectives/nouns of the type discussed in Nagano & Shimada (2015). Some of the examples are given in (63). Note in passing that the Dutch suffix *-isch* also has a wider use, covering some of the relational modification cases. We hence assume that our analysis of material and origin modifiers is extendable to the relational adjectives/nouns in general. It is also the case that the Dutch compound cases discussed above can be classified as relational modification (based on their semantics) provided a lack of a more suitable term that would capture those relations.

(63)	<i>klassiche-sk-ij,</i>	<i>metalliche-sk-ij,</i>	<i>electriche-sk-ij,</i>	[Russian]
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¹⁴ In Russian origin modifiers, like material ones, do not allow short forms and hence cannot be used predicatively (cf., fn. 12). We see two possible explanations for this: (i) the suffix in question in Russian does not have a genitive feature; (ii) the form is not possible for phonological reasons.

¹⁵ But many material modifiers are formed with a different suffix in Russian.

classic-*sk*-M.NOM, metal-*sk*-M.NOM, electric-*sk*-M.NOM,
 hristian-*sk-ij*, ispan-*sk-ij*, uchitel'-*sk-ij*
 Christian-*sk*-M.NOM, Spanish-*sk*-M.NOM, teacher-*sk*-M.NOM
 'classic, metal, electric, Christian, Spanish, teacher's'

We further note that in the analysis proposed by Español-Echevarría (2016) for Malay, while he argues that (what we call) DimCl is allowed with material modifiers, the DimCl in this case is not *material* but *kind*, which is, as we will show in 4.6, a different type of construction. Whether Malay also exhibits a similar morphologically distinct pattern as Dutch or Russian is a matter of further research.

In this section we have shown that DimCl can also be realised as bound morphemes originating in the SpecDivP. This correctly predicts the absence of the possessive relation and of a free-standing DimCl. The analysis presented in this section implies that all lower modifiers, i.e., compounds, relational, origin and material modifiers (cf., adjectival hierarchy, i.a., Scott 2002) that do not allow a lexical free-standing DimCl and do not form a possessive relation with the N, are base-generated in the SpecDivP (59).¹⁶

4.6 Kind nouns are not DimCls

The Dutch nouns *soort* 'kind' and *type* 'type' seem to occur in the prenominal pattern 2 [A N1 N2] (63a,b) and the postnominal *of*-modification pattern 3 [N2 of A N1] (64c,d) and can be combined with many types of adjectives. This raises the question as to whether they are Dimension Classifiers in pattern 2. This section shows that the answer to this question is clearly negative. *soort* 'kind' and *type* 'type' in pattern 2 have more in common with N1 in pseudopartitives, but there is also a difference.

(64)	a.	<i>een</i> a	<i>mooi(-e)</i> nice(-COM)	<i>soort</i> kind	<i>bloem-en</i> ¹⁷ flower-PL		[Dutch]
							'a nice kind of flowers'
	b.	<i>bloem-en</i> flower-PL	<i>van</i> of	<i>een</i> a	<i>mooi(-e)</i> nice(-COM)	<i>soort</i> kind	
							'flowers of a nice kind'
	c.	<i>een</i> a	<i>leuk</i> nice.N	<i>type</i> type	<i>auto</i> car		
							'a nice type of car'
	d.	<i>een</i> a	<i>auto</i> car	<i>van</i> of	<i>een</i> a	<i>leuk</i> nice.N	<i>type</i> type
							'a car of a nice type'

Firstly, we have seen that pattern 2 requires N1 to be a part (i.e., an objective inherent dimension) of N2. The part-whole relation is the reverse in the case of *soort/type*: N2 belongs to a kind/type, not vice versa. This is supported by the facts in (65), that show that the modified noun cannot have the possessor role with *soort/type*, whereas it can in the case of DimCl (65a).¹⁸

(65)	a.	<i>De</i> the	<i>auto</i> car	<i>heeft</i> have.3SG.PRS	<i>een</i> a	<i>groen-e</i> green-COM	<i>kleur</i> colour	[Dutch]
								'The car has a green colour'
	b.	<i>*De</i> the	<i>bloem-en</i> flower-PL	<i>hebben</i> have.PL	<i>een</i> a	<i>mooi-e</i> nice-COM	<i>soort</i> kind	
	c.	<i>*De</i> the	<i>auto</i> car	<i>heeft</i> have.3SG.PRS	<i>a</i> a	<i>leuk</i> nice.N	<i>type</i> type	

¹⁶ The analysis proposed raises the question why nouns such as *materiaal* 'material', *stof* 'stuff', *origine* 'origin' cannot be used as DimCl themselves. We see two reasons. The first reason is that there is no possessive relation that can be the underlying structure and input for the derivation of a prenominal nominal DimCl. The second reason is paradigmatic blocking. The availability of specific material and origin suffixes blocks the possibility of a nominal DimCl.

¹⁷ Dutch *soort* 'kind' can be combined with the common gender definite determiner *de* and the neuter definite determiner *het*. Gender inflection on the adjective is optional (64a). We assume that *soort* is underspecified for the value of gender.

¹⁸ Notice in passing that the counterparts of (65) with copula BE and a van-PP as a predicate (see example (37)) are grammatical for both *kleur*, *soort* and *type*, showing that the complement of P in the predicate in that construction can be either the possessor or the possessee.

Secondly, *kind* has two meanings: being similar to N and being a category of N. In the latter case, both in Dutch and in Russian the presence of an overt licenser (e.g., adjective) is obligatory (66). This as well as the facts in (64) and (65) also holds for some other nouns that belongs to the same semantic category, e.g., *rod* ‘kind’ and *vid* ‘species’ in Russian. In the former meaning the presence of an overt licenser is optional in Dutch and impossible in Russian (67).¹⁹ The optionality of the modifier in case of kind nouns such as *type* in Dutch in (68a) resembles the pseudopartitive pattern in (68b), since in this case no ambiguity in the meaning arises.

- (66) a. *We pluk-t-en een *(mooi) soort bloem-en* [Dutch]
 we pick-PST-PL a nice kind flower-PL
 ‘We picked a nice kind of flowers’
 b. *My sorva-l-i *(krasiv-ogo) tip-a cvet-y* [Russian]
 we pick-PST-PL nice-GEN kind-GEN flower-PL
 ‘We picked a nice kind of flowers’
- (67) a. *We pluk-t-en een soort bloem-en* [Dutch]
 we pick-PST-PL a kind flower-PL
 ‘We picked a kind of flowers’
 b. *My sorva-l-i tip-a cvet-y* [Russian]
 we pick-PST-PL kind-GEN flower-PL
 ‘We picked a kind of flowers’
- (68) a. *We bestudeer-d-en een (vreemd) type vlinder* [Dutch]
 we study-PST-PL a (strange) type butterfly
 ‘We studied a strange type of butterfly’
 b. *We kocht-en een (blauw-e) emmer appel-s*
 we buy-PST-PL a (blue-COM) bucket apple-PL
 ‘We bought a (blue) bucket of apples’

Thirdly, *van* ‘of’ appears to be optionally present between N1 and N2 with count nouns in Dutch (e.g., 69a,b), whereas this is impossible with Dimension Classifiers (69c). Pseudopartitives do not allow *van* ‘of’ (69d) either.

- (69) a. *een leuk(-e) soort (van) bloem-en* [Dutch]
 a nice(-COM) kind of flower-PL
 ‘a kind of flowers’
 b. *een interessant type (van) auto*
 a interesting.N type of car
 ‘a type of car’
 c. *een groen-e kleur (*van) auto*
 a green-COM colour of car
 ‘a green colour of car’
 d. *een blauw-e emmer (*van) appel-s*
 a blue-COM bucket of apple-PL
 ‘a blue bucket of apples’

Russian distinguishes between whether N1 or N2 is the head based on where genitive marking is. In (70a) *cvety* is the head noun and in (70b) it is *tip*. Based on their grammatical properties (i.e., agreement) the pattern in (70b) resembles a pseudopartitive structure (70c).

- (70) a. *krasiv-ogo tip-a cvet-y* [Russian]
 nice-GEN kind-GEN flower-PL.NOM
 ‘flowers of a nice kind’
 b. *krasiv-yj tip cvet-ov*
 nice-M.NOM kind.NOM flower-PL.GEN
 ‘a nice kind of flowers’
 c. *(zel'on-oje) vedr-o malin-y*
 green-N.NOM bucket-NOM raspberry-GEN
 ‘a (green) bucket of raspberries’

¹⁹ While allowed, such forms in Russian are highly informal and only used in spoken language.

The evidence in (66)-(70) convincingly shows that [A N1 N2] patterns with N1 = kind noun should not be analysed in the same way as pattern 2 with Dimension Classifiers. At the same time, they cannot be straightforwardly analysed as pseudopartitives given (69d). On the other hand, the pattern with a kind noun behaves like pseudopartitives when we combine it with a DimCl (71), i.e., a kind noun itself cannot be modified by A+DimCl.

- (71) a. *een soort blauw-e kleur vrucht-en* [Dutch]
a kind blue-COM colour fruit-PL
'a kind of blue fruits'
- b. *een emmer blauw-e kleur vrucht-en*
a bucket blue-COM colour fruit-PL
'a bucket of blue fruits'
- c. **een blauw-e kleur soort vrucht-en*
a blue-COM colour kind fruit-PL
- d. **een blauw-e kleur emmer vrucht-en*
a blue-COM colour bucket fruit-PL

More evidence for the similarity between the pattern 2 (72a,b), the constructions with a kind noun (72c,d), and pseudopartitives (72e,f) is that all of them can be the basis of a *wat-voor* 'what kind of' construction.²⁰

- (72) a. *Wat voor (een) kleur auto heb je gekocht?* [Dutch]
what for a colour car have.2 SG.PRS you buy.PTCP
'What colour car did you buy?'
- b. *Wat heb je voor (een) kleur auto gekocht?*
what have.2 SG.PRS you for a colour car buy.PTCP
'What colour car did you buy?'
- c. *Wat voor (een) soort auto heb je gekocht?*
what for a kind car have.2 SG.PRS you buy.PTCP
'What kind of car did you buy?'
- d. *Wat heb je voor (een) soort auto gekocht?*
what have.2 SG.PRS you for a kind car buy.PTCP
'What colour car did you buy?'
- e. *Wat voor (een) emmer appel-s heb je gekocht?*
what for a bucket apple-PL have.2 SG.PRS you buy.PTCP
'What kind of bucket of apples did you buy?'
- f. *Wat heb je voor (een) emmer appel-s gekocht?*
what have.2 SG.PRS you for a bucket apple-PL buy.PTCP
'What kind of bucket of apples did you buy?'

Nouns that can occur in pattern 3 but not in pattern 2 as prenominal DimCl, cannot occur in the *wat-voor* construction (73). This shows that only semi-lexical nouns but not lexical nouns can occur in this construction. Notably, (73g,h) show that *materiaal* 'material' and *origine* 'origin' are not allowed either providing additional support for the analysis proposed in 4.5.

- (73) a. *Ik heb een artikel van groot belang gelezen* [Dutch]
I have.1SG.PRS an article of great interest read.PTCP
'I read an article of great interest'
- b. **Ik heb een groot belang artikel gelezen*
I have.1SG.PRS a great interest article read.PTCP
- c. **Wat voor belang artikel heb je gelezen?*
what for interest article have.1SG.PRS you read.PTCP
- d. *Ik heb een stad van (een) groot-e schoonheid*

²⁰ The indefinite article *een* 'a' in this construction is the spurious *een* identified in Bennis et al. (1997), with the property that it can be combined with a plural noun (e.g., *Wat voor een kleuren auto's heb je gekocht?* 'What colours of cars did you buy?'). The *een* 'a' in the postnominal modification pattern 3 is optional but not spurious. It cannot be combined with a plural noun (cf., **een auto van een groene kleuren* 'a car of a green colours'). We leave the distribution of the indefinite article in the various constructions for future research.

	I	have.1SG.PRS	a	city	of	a	great-COM	beauty
	<i>bezocht</i>							
	visit.PTCP							
	'I visited a city of great beauty'							
e.	<i>*Ik</i>	<i>heb</i>	<i>een</i>	<i>groot-e</i>		<i>schoonheid</i>	<i>stad</i>	<i>bezocht</i>
	I	have.1SG.PRS	a	great-COM		beauty	city	visit.PTCP
f.	<i>*Wat</i>	<i>heb</i>	<i>je</i>	<i>voor (een)</i>		<i>schoonheid</i>	<i>stad</i>	<i>bezocht</i>
	what	have.1SG.PRS	you	for (a)		beauty	city	visit.PTCP
h.	<i>*Wat</i>	<i>voor</i>	<i>materiaal</i>	<i>trui</i>	<i>heb</i>	<i>je</i>	<i>gekocht?</i>	
	what	for	material	sweater	have.1SG.PRS	you	buy.PTCP	
g.	<i>*Wat</i>	<i>voor</i>	<i>origine</i>	<i>auto</i>	<i>heeft</i>	<i>hij?</i>		
	what	for	origin	car	have.3SG.PRS	he		

It is also evident that *soort/type* behave differently from DimClIs cross-linguistically. Español-Echevarría (2016) (fn.14) shows that in Malay while in some structures they pattern with DimClIs, they are also allowed in structures in which other DimClIs are forbidden. We have argued in section 3.2 that the pseudopartitive in (71d) is impossible because [blauwe kleur] must be internally merged in SpecDivP, there is only one DivP in the extended projection of N2, and DivP is lower than the position of the measure noun. We tentatively explain the properties of the pattern with kind nouns by assuming that these elements are a semi-lexical head higher than DivP but lower than the position of the measure noun in the extended projection of N2, similar to Zamparelli (1998) and Klockmann (2017), leaving the explanation for (68) and other properties of pseudopartitives for future research.

4.7 On the predicate inversion analysis

The surface structure of the *of*-modification pattern 3 (74a) seems to resemble the *N van een N* 'N-of-a-N' construction (74b) that is traditionally being analysed as involving predicate inversion (75; e.g., Bennis et al. 1997, Corver 1998, Den Dikken 1998). The preposition *van* 'of' (or genitive case, respectively, cf., Corver 1998) in this case is being analysed as a nominal copula. *beer* 'bear' is a predicate of a small clause and ends up in N1 position due to predicate inversion.

(74)	a.	<i>een</i>	<i>beer</i>	<i>van</i>	<i>een</i>	<i>bruin-e</i>	<i>kleur</i>	[Dutch]
		a	bear	of	a	brown-COM	colour	
		'a bear of a brown colour'						
	b.	<i>een</i>	<i>beer</i>	<i>van</i>	<i>een</i>	<i>vent</i>		
		a	bear	of	a	man		
		'a bear of a guy'						

(75) Structure and derivation of (74b) (simplified)

- (i) [*van* [SC *vent* F [*beer*]]]
- (ii) [[*beer*] [*van* [SC *vent* F [~~*beer*~~]]]

If the derivation of pattern 2 with prenominal DimCl was parallel to (75), the data in (44b,c) repeated below in (76) are problematic, given that the base structure in (75-i) is impossible and therefore (75-ii) cannot be derived from it. Recall that we argued in section 4.1 that (76b) corresponds to the base structure and that (76a) is impossible because with mass nouns there is no DivP that can host [blauwe kleur] in its specifier.

(76)	a.	<i>*blauw-e</i>	<i>kleur</i>	<i>water</i>		[Dutch]
		blue-COM	colour	water		
	b.	<i>water</i>	<i>van</i>	<i>(een)</i>	<i>blauw-e</i>	<i>*(kleur)</i>
		water	of	a	blue-COM	colour
		'water of a blue colour'				

(77) Incorrect structure and derivation of (76)

- (i) [*van* [SC *blauwe kleur* F [*water*]]]
- (ii) [[*water*] [*van* [SC *blauwe kleur* F [~~*water*~~]]]

The *N van een N* construction and pattern 3 also differ in the following respects:

(78)	(i) Reverse predication relation						[Dutch]	
	a.	<i>Die</i>	<i>beer</i>	<i>is</i>	<i>van</i>	<i>een</i>	<i>bruin-e</i>	<i>kleur</i>

- that bear be.3SG.PRS of a brown-COM colour
‘That bear is of brown colour’
- b. *Die vent is als een beer*
that guy be.3SG.PRS like a bear
‘That guy is like a bear’
- (ii) No possessive relation in *N van een N*
- a. *Die beer heeft een bruin-e kleur*
that bear have.3SG.PRS a brown-COM colour
‘That bear has brown colour’
- b. # *die beer/vent heeft een vent/beer*
that bear/guy have.3SG.PRS a guy/bear
- (iii) Optional vs. obligatory indefinite article
- c. *een beer van (een) bruin-e kleur*
a bear of a brown-COM colour
‘a bear of a brown colour’
- d. *een beer van *(een) vent*
a bear of a man
‘a bear of a guy’
- (iv) Plural second noun and spurious *een* only with *N van een N*
- e. **beer-en van (een) bruin-e kleur-en*
bear-PL of a brown-PL colour-PL
- f. *beer-en van (een) kerel-s*
bear-PL of a bloke-PL
‘bears of guys’

It is clear from these differences that the *N van een N* construction and pattern 3 should not get the same syntactic analysis. We leave the differences (iii) and (iv) for future research. The first two differences in (78) are captured by the base structures in (79), involving a possessive relation in pattern 3 (79a) and a comparison or predicative relation in the *N van een N* construction (79b).

- (79) a. [PP [A *groene* DimCl *kleur*] [PP P *van* [N *auto*]]]
b. [SC [N *vent*] [SC F *as* [N *beer*]]]

What our analysis has in common with the predicate inversion analysis of the *N van een N* construction is that the second noun moves to the specifier of a functional head, thus reversing the linear order. Pattern 2 with a prenominal DimCl involves an additional, second step in which the remnant constituent containing the trace/copy of the moved noun moves to SpecDivP (see section 3).

Given the partial similarity of pattern 3 and the *N van een N* construction, it does not come as a surprise that the two behave similar on subextraction tests (80d-i). This distinguishes them from constructions in which a noun takes a possessive PP-complement (80a,b)

- (80) Possession [Dutch]
- a. *Ik heb een vlag van dat land*
I have.1SG.PRS a flag of that country
‘I have a flag of that country’
- b. *Van dat land heb ik een vlag.*
of that country have.1SG.PRS I a flag
‘I have a flag of that country’
- c. *Waar-van heb je een vlag ~~waar-van?~~*
where-of have.2SG.PRS you a flag where-of
‘Of what do you have a flag?’
- d. *Waar heb je een vlag ~~waar-van?~~*
where have.2SG.PRS you a flag where-of
‘What do you have a flag of?’
- e. *Ik heb een auto van (een) groen-e kleur*
I have.1SG.PRS a car of a green-COM colour
‘I have a car of a green colour’
- f. **Van (een) groen-e kleur heb ik een auto ~~van~~ of*
of (a) green-COM colour have.1SG.PRS I a car of

	(een)	groen	e	kleur							
	a	green-COM		colour							
g.	<i>*Waar-van</i>	<i>heb</i>		<i>je</i>	<i>een</i>	<i>auto</i>	<i>waar-van?</i>				
	where-of	have.2SG.PRS		you	a	car	where-of				
h.	<i>*Waar</i>	<i>heb</i>		<i>je</i>	<i>een</i>	<i>auto</i>	<i>waar-van?</i>				
	where	have.2SG.PRS		you	a	car	where-of				
i.	<i>Ik</i>	<i>zag</i>		<i>een</i>	<i>beer</i>	<i>van</i>	<i>een</i>	<i>vent</i>			
	I	see.SG.PAST	a	bear	of	a	guy				
	'I saw a very big guy'										
j.	<i>*Van</i>	<i>een</i>	<i>vent</i>	<i>zag</i>		<i>ik een</i>	<i>beer</i>	<i>van</i>	<i>een</i>	<i>vent</i>	
	of	a	guy	see.SG.PAST	I	a	bear	of	a	guy	
k.	<i>*Waar-van</i>	<i>zag</i>		<i>je</i>	<i>een</i>	<i>beer</i>	<i>waar-van?</i>				
	where-of	see.SG.PAST	you	a	bear	where-of					
l.	<i>*Waar</i>	<i>zag</i>		<i>je</i>	<i>een</i>	<i>beer</i>	<i>waar-van?</i>				
	where	see.SG.PAST	you	a	bear	where-of					

Subextraction from the DP [een vlag van dat land] in (80a) is possible (80b-d), since the PP [van dat land] is a complement of N *vlag* ‘flag’ (Ross 1967, Chomsky 1973, Cinque 1990; cf. Corver 2017 for an overview). This excludes, e.g., subextraction from an adjunct inside a DP. In our analysis, in (80e) [van groene kleur] is not a complement of the noun *auto*. Similarly, in the analysis of Bennis et al. (1997) of the *N van een N* construction, [van een vent] in (80i) is not a complement of the N *beer*.²¹

5. Distribution of DimCIs along the adjectival hierarchy

We have shown in section 3.1 that the relation between [A DimCI] and N in pattern 2 involves inalienable possession, more specifically an objective inherent part-whole relation. We have argued that the possessor N starts out as the complement of *van* ‘of’ and moves across [A DimCI] (yielding, e.g. *auto van groene kleur* ‘car of green colour’). The order [groene kleur auto] ‘green colour car’ is then derived by subsequent movement of [van groene kleur] across [auto], with *van* ‘of’ unpronounced.

In this section we will briefly discuss different classes of modifiers and show what consequences for the model this has. As stated at the very beginning, the pattern that we have described on the basis of colour modifiers holds exactly in the same way for the shape and size modifiers. We have discussed the behaviour of material, origin and relational modifiers in 4.5, and focus here on other classes of modifiers. While this will not be exhaustive, the overview presented below aims to cover as many semantic classes of modifiers as possible.

Probably one of the most fundamental claims about the syntax of adjectives is that adjectival modifiers should appear in the fixed order, which holds cross-linguistically for unmarked cases (cf., e.g., Dixon 1982, Scott 2002, Laenzlinger 2004, Cinque 2010 among others). In this hierarchy modifiers are usually divided into classes based on their semantics, often with the assumption that those adjectives that denote more intrinsic, less separable properties appear closer to the noun (e.g., Dixon 1982, Sproat & Shih 1988). We will further take the hierarchy proposed by Scott (2002) (81) as the basis for further classification of adjectival modifiers and add several semantic classes.

- (81) determiner > ordinal number > cardinal number > subjective comment > evidential > size > length > height > speed > depth > width > weight > temperature > wetness > age > shape > colour > nationality/origin > material > compound element > NP

²¹ In our analysis, the possessor in an inalienable possession relation starts out as the complement of a small clause head (*van* ‘of’), not as the specifier. Den Dikken (2015) argues on the basis of Hungarian morphosyntactic facts for the reverse structural relations for inalienable possession. The possessor in inalienable possession constructions such as *John’s mother* is generated in the specifier of an abstract small clause head F, while the possessum [mother] is generated as the complement. No predicate inversion takes place. In the case of alienable possession (e.g., *John’s book*), the possessor [John] starts out as the complement of F, and the possessum [book] as the specifier. The surface order is derived by predicate inversion, i.e., movement of [John] across [book]. If both our analysis of pattern 2 constructions such *een groene kleur auto*, and Den Dikken’s analysis of inalienable possession constructions such as *John’s mother* are correct, the thematic relations in these two constructions cannot be identical. We leave this issue for further research. What is entirely clear, given the arguments we have provided in this section, is that pattern 2 cannot be analysed along the lines of Den Dikken’s (2006, 2015) analysis of the *N van een N* construction (e.g., *that idiot of a doctor*).

We start the discussion from the highest layers of the hierarchy, putting the determiner and ordinal and cardinal numerals aside. We show whether all three modification patterns (adjacent modifier; *of*-modification prenominal Modifier + DimCl) are possible and whether there is a possessive/part-whole relation being formed. We will see that we can distinguish several broader classes of modifiers depending on their behaviour in relation to DimCls. Unlike in the rest of the paper, where we were focusing on the distribution of DimCl, this section takes modifiers as a starting point. This is in line with the numerous literature that aims to explain adjectival modification arguing that modifiers are intrinsically divided into natural classes. While this is not the standpoint that we take in our paper, this section is structured differently in accordance with the mainstream literature.

Subjective comment and evidential/modal modifiers can in principle combine with any DimCl. They allow all three modification patterns (82a,b,c), (83a,b,c), (84a,b,c), (85a,b,c) and form a possessive/part-whole relation with the noun (82d,e), (83d,e), (84d,e), (85d,e). The value for [dimension] in this case is coming solely from a DimCl, that is why it is also contributing to the semantics. The feature specification of subjective and evidential/modal modifiers is such that it allows them to combine with any DimCl: they have an underspecified [dimension] feature, which is valued by the DimCl.

- (82) a. *een grappig-e stoel* [Dutch]
a funny-COM chair
'a funny chair'
- b. *een stoel van een grappig(-e) maat / vorm / kleur*
a chair of a funny(-COM) size / shape / colour
'a chair of a funny size/shape/colour'
- c. *een grappig(-e) maat / vorm / kleur stoel*
a funny(-COM) size / shape / colour chair
'a chair of a funny size/shape/colour'
- d. *De stoel is van een grappig(-e) maat / vorm / kleur*
the chair be.3SG.PRS of a funny(-COM) size / shape / colour
'The chair has a funny size/shape/colour.'
- e. *De stoel heeft een grappig(-e) maat / vorm / kleur*
the chair have.3SG.PRS a funny(-COM) size / shape / colour
'The chair has a funny size/shape/colour.'
- (83) a. *smešn-oj stul* [Russian]
funny-M.NOM chair.NOM
'a funny chair'
- b. *stul smešn-ogo/-oj razmer-a / form-y / cvet-a*
chair.NOM funny-M.GEN/F.GEN size-M.GEN / form-F.GEN / colour-M.GEN
'a chair of a funny size/shape/colour'
- c. *smešn-ogo/-oj razmer-a / form-y / cvet-a stul*
funny-M.GEN/F.GEN size-M.GEN / form-F.GEN / colour-M.GEN chair.NOM
'a chair of a funny size/shape/colour'
- d. *Stul by-l smešn-ogo/-oj. razmer-a / form-y /*
chair. NOM be-PST.3M.SG funny-M.GEN/F.GEN size-M.GEN / form-F.GEN /
*cvet-a*²²
colour-M.GEN
'A chair was of a funny size/shape/colour'
- e. *Stul ime-et smešn-oj/-uju razmer / form-u /*
chair have-3SG.PRS funny-M.ACC/F.ACC size.M.ACC / form-F.ACC /
cvet
colour.M.ACC
'a chair of a funny size/shape/colour'
- (84) a. *een mogelijk-e stoel* [Dutch]
a possible-COM chair
'a possible chair'
- b. *een stoel van een mogelijke(-e) maat / vorm / kleur*
a chair of a possible(-COM) size / shape / colour
'a chair of a possible size/shape/colour'

²² Since Russian does not feature an overt copula in the present tense, we are using past tense examples here.

- c. *een mogelijk(-e) maat / vorm / kleur stoel*
a possible(-COM) size / shape / colour chair
'a chair of a possible size/shape/colour'
- d. *De stoel is van een mogelijk(-e) maat / vorm / kleur*
the chair be.3SG.PRS of a possible(-COM) size / shape / colour
'The chair has a possible size/shape/colour.'
- e. *De stoel heeft een mogelijk(-e) maat / vorm / kleur*
the chair have.3SG.PRS a possible(-COM) size / shape / colour
'The chair has a possible size/shape/colour.'
- (85) a. *vozmožn-yj stul* [Russian]
possible-M.NOM chair.NOM
'a possible chair'
- b. *stul vozmožn-ogo/-oj razmer-a / form-y / cvet-a*
chair.NOM possible-M.GEN/F.GEN size-M.GEN / form-F.GEN / colour-M.GEN
'a chair of a possible size/shape/colour'
- c. *vozmožn-ogo/-oj razmer-a / form-y / cvet-a stul*
possible-M.GEN/F.GEN size-M.GEN / form-F.GEN / colour-M.GEN chair.NOM
'a chair of a possible size/shape/colour'
- d. *Stul.NOM by-l vozmožn-ogo/-oj razmer-a /*
chair be-PST.3M.SG possible-M.GEN/F.GEN size-M.GEN /
form-y / cvet-a
form-F.GEN / colour-M.GEN
'A chair was of a possible size/shape/colour'
- e. *Stul ime-et vozmožn-yj/-uju razmer / form-u /*
chair have-3SG.PRS possible-M.ACC/F.ACC size.M.ACC / form-F.ACC /
cvet
colour.M.ACC
'a chair of a possible size/shape/colour'

Size modifiers accurately follow the expected pattern: all three types of modification are possible and a possessive/part-whole relation holds (86) for Dutch and (87) for Russian. In addition to Dutch *maat* and Russian *razmer*, these modifiers in both languages can combine with an equivalent of format: *formaat* in Dutch, *format* in Russian.

- (86) a. *een klein-e broek* [Dutch]
a small-COM trousers
'small trousers'
- b. *een klein-e (maat) broek*
a small-COM size trousers
'small trousers'
- c. *een broek van een klein-e maat*
a trousers of a small-COM size
'trousers of small size'
- d. *De broek is van een klein-e maat*
the trousers be.3SG.PRS of a small-COM size
'The trousers are of a small size'
- e. *De broek heeft een klein-e maat*
the trousers have.3SG.PRS a small-COM size
'The trousers have a small size'
- (87) a. *bol's-øj stol* [Russian]
big-M.NOM table.NOM
'a big table'
- b. *stol bol's-ogo razmer-a*
table.NOM big-M.GEN size-GEN
'a table of a big size'
- c. *bol's-ogo razmer-a stol*
big-M.GEN size-GEN table.NOM
'a big table'

- d. *Stol* *by-l* *bol's-ogo* *razmer-a*
 table.NOM be-PST.3M.SG round-M.GEN size-GEN
 'A table was of a big size'
- e. *Stol* *ime-et* *bol's-oj* *razmer*
 table have-3SG.PRS big-M.ACC size.M.ACC
 'The table has a big size'

Next we are dealing with a whole cluster of modifiers which systematically show the same pattern in relation to combining with a DimCl, based on which we will need to refine the feature specification of these modifiers and respective DimCls. All of them involve a scalar dimension, e.g., length or temperature. Size modifiers also belong to this cluster. In the overview Table 1 below these modifiers are marked with orange. For the scale modifiers there is usually a logical respective DimCl, which will be, e.g., Dutch *lengte* 'length' for length modifiers or Russian *skorost* 'speed' for speed modifiers. We notice, however, that while combining modifiers from these classes with their respective DimCls is often unnatural. At the same time respective DimCls can easily take a 'more general' size modifier to result in the same meaning. Consider length modification in (88), (89) for Dutch and (90), (91) for Russian.

- (88) a. *een lang/kort touw* [Dutch]
 a long/ short rope
 'a long/short rope'
- b. *een touw van een ??lang-e/kort-e lengte*
 a rope of a long-short length
 'a rope of a long/short length'
- c. *een ?lang-e/kort-e lengte touw*
 a long-COM / short-COM length rope
 'a rope of a long/short length'
- d. *De touw is van een ??lang-e/kort-e lengte*
 the rope be.3SG.PRS of a long-COM / short-COM length
 'The rope is of a long/short length'
- e. *De touw heeft een ??lang-e/kort-e lengte*
 the rope have.3SG.PRS a long-COM / short-COM length
 'The rope has a long/short length'
- (89) a. *een groot touw* [Dutch]
 a big rope
 'a long rope' (but not necessarily a long one)
- b. *een touw van een groot-e lengte*
 a rope of a big length
 'a rope of a big length'
- c. *een groot-e lengte touw*
 a big-COM length rope
 'a rope of a big length'
- d. *Het touw is van een groot-e lengte*
 the rope be.3SG.PRS of a big-COM length
 'The rope is of a big length'
- e. *Het touw heeft een groot-e lengte*
 the rope have.3SG.PRS a big-COM length
 'The rope has a long/short length'
- (90) a. *dlinn-aja / korotk-aja v'er'ovk-a* [Russian]
 long-F.NOM / short-F.NOM rope-NOM
 'a long/short rope'
- b. *v'er'ovk-a ??dlinn-oj / ?korotk-oj dlin-y*
 rope-NOM long-F.GEN / short-F.GEN length-GEN
 'a rope of a long/short length'
- c. *??dlinn-oj / ?korotk-oj dlin-y v'er'ovk-a*
 long-F.GEN / short-F.GEN length-GEN rope-NOM
 'a rope of a long/short length'
- d. *V'er'ovk-a by-l-a ??dlinn-oj / ?korotk-oj dlin-y*
 rope-NOM is-PST-F long-F.GEN / short-F.GEN length-GEN

- e. ‘A rope was of a long/short length’
V'er'ovk-a ime-et ??dlinn-uju / ?korotk-uju dlin-y
 rope-NOM have-3SG.PRS long-F.ACC / short-F.ACC length-ACC
 ‘The rope has a long/short length’
- (91) a. *bol's-aja v'er'ovk-a* [Russian]
 big-F.NOM rope-NOM
 ‘a big rope’ (but not necessarily a long one)
- b. *v'er'ovk-a bol's-oj dlin-y*
 rope-NOM big-F.GEN length-GEN
 ‘a rope of a big length’
- c. *bol's-oj dlin-y v'er'ovk-a*
 big-F.GEN length-GEN rope-NOM
 ‘a rope of a big length’
- d. *V'er'ovk-a by-l-a bol's-oj dlin-y*
 rope-NOM is-PST-F big-F.GEN length-GEN
 ‘A rope was of a big length’
- e. *V'er'ovk-a ime-et bol's -uju dlin-y*
 rope-NOM have-3S.PRS big-F.ACC length-ACC
 ‘The rope has a big length’

Meaning-wise (88) and (90) are identical to (89) and (91). There are several observations to be made about these data.

Firstly, all modifiers in this cluster include a scale as part of their meaning, where there are at least two explicit values, i.e., for high and low or big and small. This component is not dependent on the particular scale that it being used, hence we get cases like (89) and (91) where a modifier from a different semantic class is used. We propose that modifiers that belong to this cluster have a valued feature [scale]. Logically, *long* would then be [dimension: length; scale: high], which would ensure the correct semantics. Size modifiers like *big* are expected to have an unvalued [dimension] feature, resulting in [dimension: _; scale: high/big]. This allows them to combine with DimCls other than size DimCls resulting in (89) and (91).

Height modifiers are similarly underspecified for [dimension], but do have a value for [scale], which allows them to also be used with various DimCls. Consider (92a) for Dutch and (93a) for Russian. However, unlike what we have seen in (89a) and (91a) where we can still combine the modifier with the noun in the absence of a DimCl (although as seen in the translation, the semantics will be different and will not include a specific aspect of the size dimension as a more prominent one),²³ we see in (92b) for Dutch and (93b) for Russian that it becomes impossible to leave out the DimCl in these cases. (92c) for Dutch and (93c) for Russian show that this does not happen in case a ‘more specific’ modifier is used. These contrasts are telling since they show that the modifiers of size and height need to get their [dimension] value from the respective DimCl. When modifiers of size and height are used without a DimCl, their default meaning is being used which is probably derived from their value for [scale], [dimension] stays unvalued. This ensures that height modifiers apply to vertical scales and size modifiers are extendable to any scales. Notably, (94) shows that it is also possible to combine a height DimCl with a size modifier.

- (92) a. *een hoog-e temperatuur thee* [Dutch]
 a high-COM temperature tea
 ‘a hot tea’
- b. **een hoog-e thee*
 a high-COM tea
 incorrect under the intended interpretation: ‘a hot tea’
- c. *een heet-e thee*
 a hot-COM tea
 ‘a hot tea’
- (93) a. *vysok-oj skorost'-i poezd* [Russian]

²³ We acknowledge that the length interpretation of (89a) and (91a) is still the most prominent one, but we attribute it to the extra-linguistic factors such as world knowledge. If we imagine a context in which it was talked about needing a thick rope, *big rope* can equally well indicate its thickness.

		high-F.GEN 'a fast train'	speed-GEN	train.NOM	
	b.	* <i>vysok-ij</i> high-M.GEN 'a high train'	<i>poezd</i> train.NOM		
		incorrect under the intended interpretation: 'a fast train'			
	c.	<i>bystr-yj</i> fast-F.GEN 'a fast train'	<i>poezd</i> train.NOM		
(94)		<i>bol'sh-oj</i> big-F.GEN 'a high building'	<i>vysot-y</i> height-GEN	<i>zdanij-e</i> building-NOM	[Russian]

Cases like (95a) are out because of the clash in the values for [dimension]. It is also the case that modifiers that have a [scale] feature can only select for a scalar DimCl which ensures for the ungrammaticality of (95b). Consequently, we have to assume that the relevant DimCls have an unvalued [scale] feature.

(95)	a.	* <i>een</i> a	<i>small-e</i> narrow-COM	<i>vorm</i> shape	<i>tafel</i> table	[Dutch]
	b.	* <i>een</i> a	<i>hoog-e</i> high-COM	<i>vorm</i> shape	<i>tafel</i> table	

Secondly, we notice that length DimCl in both languages shares the stem with the modifier that indicates the high value on this scale, i.e., *lang* – *lengte* for Dutch, *dlina* – *dlinnyj* for Russian. Given that human language tends to resist repetition (and in case of the presence of a DimCl, [dimension] is already lexicalised twice), we think that this is why *long length* in both Dutch and Russian is unnatural. This is also evident based on the contrast with *short length*, which is immediately better in both languages since we are dealing with different roots here. Cases like (96) where there is no lexical overlap between the modifier and the DimCl are significantly better.

(96)	a.	<i>čaj</i> tea 'a hot tea'	<i>gor'ač-ej</i> hot-F.GEN	<i>temperatur-y</i> temperature-GEN	[Russian]
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For reasons of space, we are not going to exemplify the pattern for the other modifiers in this cluster, but we assume that they behave identically. For the same reasons we will not discuss in detail the rest of the semantic classes of modifiers here since the lower part of the Scott hierarchy behaves identical to the colour modifiers, with the exception of material and origin modifiers and compounds and relational nouns as discussed earlier. In Table 1 we present an overview of the various modifier classes based on the tests that we have introduced so far. This is not an exhaustive list and there are exceptions, obviously. But with this overview we show the viability of the analysis. Exhaustive list is out of scope of the current paper.

Based on the colour-coding in Table 1²⁴ we see that the modifiers are naturally divided into at least three classes. The blue sector of the table indicates modifiers that in their dimension denotation are fully dependent on the DimCl they merge with because they do not have an inherent dimension themselves. This also implies that the positive values for the physical dimension as well as the possessive relation are dependent on the respective DimCl. The orange sector of the table indicates a group of scalar modifiers as discussed above. Finally, the green sector marks the most 'standard' cases like colour, that we have been using as a generalisation throughout the entire paper. Material, origin, compound-like and relational modifiers are different in that they do not form a possessive relation with N and, consequently, do not form respective constructions. Within a group of lower modifiers they form a subclass since they cannot be used without a DimCl, i.e., their DimCl is a bound morpheme.

²⁴ Some exceptions in the paradigm are probably the matter if language specific restrictions. The table is meant as an overview and discussing the exceptions is out of the scope of the current paper.

Table 1

Distribution of DimCls along the adjectival hierarchy (cf., Scott 2002); D=Dutch; R=Russian

Semantic class of the modifier	Prenominal modification without DimCl		Prenominal DimCl		Of- modification		Possession: have		Possession: is of		Objective inherent dimension		[dimension: value]		Dedicated DimCl		Combine DimCl and Modifier		[scale: value]		Part-whole relation	
	D	R	D	R	D	R	D	R	D	R	D	R	D	R	D	R	D	R	D	R	D	R
<i>Subjective (e.g., nice)</i>	+	+	+	+	+	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-	+	+
<i>Evidential (e.g., possible)</i>	+	+	+	+	+	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-	+	+
<i>Size (e.g., large)</i>	+	+	+	+	+	+	+	+	+	+	+	+	-	-	+	+	+	+	+	+	+	+
<i>Length (e.g., long)</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Height (e.g., high)</i>	+	+	+	+	+	+	+	+	+	+	+	+	-	-	-	+	-	-	+	+	+	+
<i>Speed (e.g., fast)</i>	+	+	-	-	+	+	+	+	+	+	+	+	+	+	+	+	-	-	+	+	+	+
<i>Depth (e.g., deep)</i>	+	+	-	+	+	+	+	+	+	+	+	+	+	+	-	+	-	-	+	+	+	+
<i>Width (e.g., wide)</i>	+	+	-	+	+	+	+	+	+	+	+	+	+	+	-	+	-	-	+	+	+	+
<i>Weight (e.g., heavy)</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+
<i>Temperature (e.g., warm)</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+
<i>Wetness (e.g., dry)</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	-	-	+	+	+	+
<i>Cost (e.g., cheap)</i>	+	+	-	+	-	+	-	+	-	+	+	+	+	+	-	+	-	-	+	+	+	+
<i>Strength (e.g., strong)</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+
<i>Sound (e.g., loud)</i>	+	+	-	+	+	+	+	+	+	+	+	+	+	+	-	+	-	-	+	+	+	+
<i>Taste/smell (e.g., sweet)</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	+	+
<i>Texture (e.g., soft)</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	+	+
<i>Shape (e.g., round)</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	+	+
<i>Colour (e.g., green)</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	+	+
<i>Origin (e.g., Swedish)</i>	-	-	+	+	-	-	-	-	-	-	+	+	+	+	+	+	+	+	-	-	-	-
<i>Material (e.g., wooden)</i>	-	-	+	+	-	-	-	-	-	-	+	+	+	+	+	+	+	+	-	-	-	-
<i>Relational (e.g., electric)</i>	-	-	+	+	-	-	-	-	-	-	+	+	+	+	+	+	+	+	-	-	-	-
<i>Compounds (see above)</i>	-	-	+	+	-	-	-	-	-	-	+	+	+	+	+	+	+	+	-	-	-	-

6. Conclusion

In this paper we have looked at a little investigated pattern of nominal modification, where the relation between the noun and the modifier is mediated by an overt nominal element that we called Dimension Classifier, primarily based on Dutch and supported by the comparison with Russian. We have shown that DimCl should necessarily be licensed in which it resembles the behaviour of numeral classifiers. We have also argued that DimCl explicitly picks a relevant dimension of modification, and hence is in a part-whole relation with the noun. They have to indicate an objective inherent dimension of the noun. We have provided a novel analysis of the structures in question (i.e., *een groene kleur auto* ‘a green colour car’) based on the novel observation that DimCl are not possible with mass nouns and pseudopartitives. In our system the prenominal DimCl order is derived from the *of*-modification pattern *een auto van een groene kleur* ‘a car of a green colour’ by the movement of the constituent [P A DimCl] to the specifier of DivP, the position that is not available for mass nouns and measure nouns in pseudopartitive constructions. Crucially, we have argued that Dimension Classifiers are not silent elements in the sense of Kayne (2005) and we have also shown that they cannot be seen as functional heads in the extended projection of the noun (direct modification patterns in the sense of Scott 2002 or Cinque 2010). We have also shown that the structures in question cannot be analysed as instances of predicate inversion (in the sense of Bennis et al. 1997), although it has some properties in common with it. According to the approach adopted in the current paper, the possible and impossible structures are primarily a matter of the properties of the DimCl and not the modifier: the overview Table 1 shows that most of the semantic classes of modifiers can easily take a DimCl. However, while we do present the tests to identify DimCl, in this paper we do not provide an exhaustive list of them. Some discrepancies in the Table 1 also indicate that there might be gaps in the language and what is predicted in the system is not always realised. Based on the analysis of the bound DimCl in case of the lowest modifiers in the hierarchy one can hypothesise that there are also other cases when DimCl is also bound, hence blocking any other free-standing morphemes. It remains to be seen how this system is applicable to languages other than Dutch and Russian. We have shown, however, that this requires a very detailed analysis of the specific language. Based on the little Malay and Japanese data at our disposal we have reasons to think that our model is easily extendable to the patterns described in Español-Echevarría (2016) and Nagano & Shimada (2015).

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