Syntax of Dutch
Nouns and Noun Phrases, Volume I and II

Hans Broekhuis
Evelien Keizer (Vol. I)
Marcel den Dikken (Vol. II)

Syntax of Dutch: Adjectives and Adjectives will appear soon. Get a 10 % discount (valid until June 1, 2013). Open this attachement

This file contains (numbers refer to the pages of this pdf-file):
1. Order information (p.2)
2. TOC of the two volumes devoted to nouns (p.3-5)
3. Abbreviations and conventions (p.6-7)
3. Preface to the series and instructions for use (p.8-20)
4. Introduction to the two volumes devoted to nouns (p.22)
5. A sample chapter on binominal constructions (p.24-124)

Note that the complete text will also appear as an Open Access publication at Oapen.org. The release date will be October/November 2012.
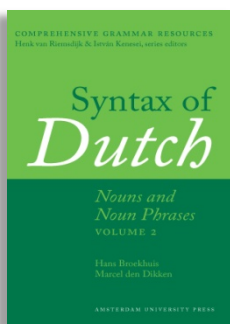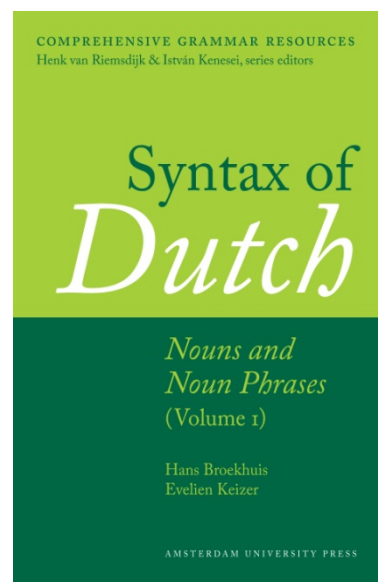
Syntax of Dutch
Nouns and Noun Phrases, Volume I and II
Hans Broekhuis, Evelien Keizer (Vol. I) and Marcel den Dikken (Vol. II)

Syntax of Dutch, a major linguistic research project currently based at the Meertens Institute Amsterdam, will be published in at least seven volumes over the period 2012-2016.

The aim of this publication is to present a complete synthesis of the available knowledge of Dutch syntax. It is primarily concerned with language description and not with linguistic theory, providing support to all researchers of language and linguistics, including graduate students.

The first two volumes in this series, *Nouns and Noun Phrases*, discuss the internal make-up as well as the distribution of noun phrases, and address the following areas: complementation and modification of noun phrases; properties of determiners (articles and demonstratives), numerals and quantifiers; the use of noun phrases as arguments, predicates and adverbial modifiers.

This project is, by all measures, an extraordinary one, both in conception and execution. To a remarkable degree the Syntax of Dutch *manages to harmonize demands of depth and breadth. In part this appears to be due to the highly systematic approach followed. I believe the* Syntax of Dutch *project will ultimately become a model for comprehensive grammatical description in the years ahead.*
- Richard Larson, Professor of Linguistics at University of Stony Brook

Hans Broekhuis is a researcher at the Meertens Institute in Amsterdam.
Evelien Keizer is a professor in English Linguistics at the University of Vienna.
Marcel den Dikken is a professor in Linguistics at the Graduate Center of the City University in New York.

Volume I: ISBN 978 90 8964 460 2 · Hardcover · 596 pages · € 85.00 / £ 69.95
Volume II: ISBN 978 90 8964 463 3 · Hardcover · 602 pages · € 85.00 / £ 69.95

For more information, please contact Valeria Mecozzi at v.mecozzi@aup.nl or visit www.aup.nl

Syntax of Dutch
Nouns and Noun Phrases
Volume 1 & 2

Hans Broekhuis
Evelien Keizer
Marcel den Dikken

With the cooperation of:
Hans Bennis
Carole Boster
Martin Everaert
Liliane Haegeman
Evelien Keizer
Anneke Neijt
Henk van Riemsdijk
Georges de Schutter
Riet Vos

Contents

Abbreviations and symbols

This appendix contains a list of abbreviations and symbols that are used in this volume. Sometimes conventions are adopted that differ from the ones given in this list, but if this is the case this is always explicitly mentioned in the text.

°xxx	Refers to the XXX in the glossary
A+section #	A3.2 refers to Section 3.2. in Hans Broekhuis (to appear). *Grammar of Dutch: Adjectives and adjective Phrases*.
Domain D	Domain of discourse
P+section #	P3.2 refers to Section 3.2. in Hans Broekhuis (to appear). *Grammar of* Dutch: *Adpositions and adpositional phrases*.
QC	Quantificational binominal construction
V+section #	V3.2 refers to Section 3.2. in Hans Broekhuis & Norbert Corver (in prep). *Grammar of Dutch: Verbs and verb prhases*.

Abbreviations used in both the main text and the examples

AP	Adjectival Phrase	PP	Prepositional Phrase
DP	Determiner Phrase	QP	Quantifier Phrase
NP	Noun Phrase*	VP	Verb Phrase
NumP	Numeral Phrase		

*) *Noun phrase* is written in full when the NP-DP distinction is not relevant.

Symbols, abbreviations and conventions used in the examples

e	Phonetically empty element
Ref	Referent argument (external °thematic role of nouns/adjectives)
Rel	Related argument (internal °thematic role of relational nouns)
OP	Empty operator
PG	Parasitic gap
PRO	Implied subject in, e.g., infinitival clauses
PRO$_{arb}$	Implied subject PRO with arbitrary (generic) reference
t	Trace (the original position of a moved element)
XXX	Small caps indicates that XXX is assigned contrastive accent

Abbreviations used as subscripts in the examples

1p/2p/3p	1st, 2nd, 3rd person	nom	nominative
acc	accusative	pl	plural
dat	dative	poss	possessor
dim	diminutive	pred	predicate
fem	feminine	rec	recipient
masc	masculine	sg	singular

Abbreviations used in the glosses of the examples

AFF	Affirmative marker
COMP	Complementizer: *dat* 'that' in finite declarative clauses, *of* 'whether/if' in finite interrogative clauses, and *om* in infinitival clauses
prt.	Particle that combines with a particle verb
PRT	Particle of different kinds
REFL	The short form of the reflexive pronoun, e.g., *zich*; the long form *zichzelf* is usually translated as *himself/herself/itself*
XXX	Small caps in other cases indicates that XXX cannot be translated

Diacritics used for indicating acceptability judgments

*	Unacceptable
*?	Relatively acceptable compared to *
??	Intermediate or unclear status
?	Marked: not completely acceptable or disfavored form
(?)	Slightly marked, but probably acceptable
no marking	Fully acceptable
%	Not (fully) acceptable due to non-syntactic factors *or* varying judgments among speakers
#	Unacceptable under intended reading
$	Special status: old-fashioned, archaic, very formal, incoherent, etc.

Other conventions

xx/yy	Acceptable both with xx and with yy
*xx/yy	Unacceptable with xx, but acceptable with yy
xx/*yy	Acceptable with xx, but unacceptable with yy
(xx)	Acceptable both with and without xx
*(xx)	Acceptable with, but unacceptable without xx
(*xx)	Acceptable without, but unacceptable with xx
.. <xx>	Alternative placement of xx in an example
.. <*xx> ..	Impossible placement of xx in an example
$\Rightarrow$	Necessarily implies
$\nRightarrow$	Does not necessarily imply
XX ... YY	Italics indicate binding
$XX_i ... YY_i$	Coindexing indicates coreference
$XX_i ... YY_j$	Counter-indexing indicates disjoint reference
$XX_{*i/j}$	Unacceptable with index *i*, acceptable with index *j*
$XX_{i/*j}$	Unacceptable with index *j*, acceptable with index *i*
[$_{XP}$ ...]	Constituent brackets of a constituent XP

Preface and acknowledgments

1. General introduction

Dutch is an official language in the Netherlands, Belgium-Flanders, Surinam, Aruba and the Netherlands Antilles. With about 22 million native speakers it is one of the world's greater languages. It is taught and studied at about 250 universities around the world (www.minbuza.nl/en/you-and-netherlands/about-the-netherlands/general-information/the-country-and-its-people.html). Furthermore, Dutch is one of the most well-studied living languages; research on it has had a major, and still continuing, impact on the development of formal linguistic theory, and it plays an important role in various other types of linguistic research. It is therefore unfortunate that there is no recent comprehensive scientifically based description of the grammar of Dutch that is accessible to a wider international audience. As a result, much information remains hidden in scientific publications: some information is embedded in theoretical discussions that are mainly of interest for and accessible to certain groups of formal linguists or that are more or less outdated in the light of more recent findings and theoretical developments, some is buried in publications with only a limited distribution, and some is simply inaccessible to large groups of readers given that it is written in Dutch. The series *Syntax of Dutch* (SoD) aims at filling this gap for syntax.

2. Main objective

The main objective of *SoD* is to present a synthesis of currently available syntactic knowledge of Dutch. It gives a comprehensive overview of the relevant research on Dutch that not only presents the findings of earlier approaches to the language, but also includes the results of the formal linguistic research carried out over the last four or five decades that often cannot be found in the existing reference books. It must be emphasized, however, that *SoD* is primarily concerned with language description and not with linguistic theory; the reader will generally look in vain for critical assessments of theoretical proposals made to account for specific phenomena. Although *SoD* addresses many of the central issues of current linguistic theory, it does *not* provide an introduction to current linguistic theory. Readers interested in such an introduction are referred to one of the many existing introductory textbooks, or to handbooks like *The Blackwell Companion to Syntax*, edited by Martin Everaert & Henk van Riemsdijk, or *The Cambridge Handbook of Generative Syntax*, edited by Marcel den Dikken. A recent publication that aims at providing a description of Dutch in a more theoretical setting is *The Syntax of Dutch* by Jan-Wouter Zwart in the *Cambridge Syntax Guides* series.

3. Intended readership

SoD is not intended for a specific group of linguists, but aims at a more general readership. Our intention was to produce a work of reference that is accessible to a large audience that has some training in linguistics and/or neighboring disciplines and that provides support to all researchers interested in matters relating to the

syntax of Dutch. Although we did not originally target this group, we believe that the descriptions we provide are normally also accessible to advanced students of language and linguistics. The specification of our target group above implies that we have tried to avoid jargon from specific theoretical frameworks and to use as much as possible the *lingua franca* that linguists use in a broader context. Whenever we introduce a notion that we believe not to be part of the *lingua franca*, we will provide a brief clarification of this notion in a glossary; first occurrences of such notions in a certain context are normally marked by means of °.

4. Object of description

The object of description is aptly described by the title of the series, *Syntax of Dutch*. This title suggests a number of ways in which the empirical domain is restricted, which we want to spell out here in more detail by briefly discussing the two notions *syntax* and *Dutch*.

I. Syntax

Syntax is the field of linguistics that studies how words are combined into larger phrases and, ultimately, sentences. This means that we do not systematically discuss the internal structure of words (this is the domain of morphology) or the way in which sentences are put to use in discourse: we only digress on such matters when this is instrumental in describing the syntactic properties of the language. For example, Chapter N1 contains an extensive discussion of deverbal nominalization, but this is only because this morphological process is relevant for the discussion of complementation of nouns in Chapter N2. And Section N8.1.3 will show that the word order difference between the two examples in (1) is related to the preceding discourse: when pronounced with neutral (non-contrastive) accent, the object *Marie* may only precede clause adverbs like *waarschijnlijk* 'probably' when it refers to some person who has already been mentioned in (or is implied by) the preceding discourse.

(1) a. Jan heeft waarschijnlijk *Marie* gezien.   [Marie = discourse new]
         Jan has   probably   Marie seen
         'Jan has probably seen Marie.'
     b. Jan heeft *Marie* waarschijnlijk gezien.   [Marie = discourse old]
         Jan has   Marie probably   seen
         'Jan has probably seen Marie.'

Our goal of describing the internal structure of phrases and sentences means that we focus on competence (the internalized grammar of native speakers), and not on performance (the actual use of language). This implies that we will make extensive use of constructed examples that are geared to the syntactic problem at hand, and that we will not systematically incorporate the findings of currently flourishing corpus/usage-based approaches to language: this will be done only insofar as this may shed light on matters concerning the internal structure of phrases. A case for which this type of research may be syntactically relevant is the word order variation of the verb-final sequence in (2), which has been extensively studied since Pauwels

(1950) and which has been shown to be sensitive to a large number of interacting variables, see De Sutter (2005/2007) for extensive discussion.

(2) a. dat Jan dat boek *gelezen heeft*.
that Jan that book read has
'that Jan has read that book.'
  b. dat Jan dat boek *heeft gelezen*.
that Jan that book has read
'that Jan has read that book.'

This being said, it is important to point out that *SoD* will pay ample attention to certain aspects of meaning, and reference will also be made to phonological aspects such as stress and intonation wherever they are relevant (e.g., in the context of word order phenomena like in (1)). The reason for this is that current formal grammar assumes that the output of the syntactic module of the grammar consists of objects (sentences) that relate form and meaning. Furthermore, formal syntax has been quite successful in establishing and describing a large number of restrictions on this relationship. A prime example of this is the formulation of so-called °binding theory, which accounts (among other things) for the fact that referential pronouns like *hem* 'him' and anaphoric pronouns like *zichzelf* 'himself' differ in the domain within which they can/must find an antecedent. For instance, the examples in (3), in which the intended antecedent of the pronouns is given in italics, show that whereas referential object pronouns like *hem* cannot have an antecedent within their clause, anaphoric pronouns like *zichzelf* 'himself' must have an antecedent in their clause, see Section N5.2.1.5, sub III, for more detailed discussion.

(3) a. *Jan* denkt dat Peter hem/*zichzelf bewondert.
Jan thinks that Peter him/himself admires
'Jan thinks that Peter is admiring him [= Jan].'
  b. Jan denkt dat *Peter* zichzelf/*hem bewondert.
Jan thinks that Peter himself/him admires
'Jan thinks that Peter is admiring himself [= Peter].'

II. Dutch

SoD aims at giving a syntactic description of what we will loosely refer to as Standard Dutch, although we are aware that there are many problems with this notion. First, the notion of Standard Dutch is often used to refer to written language and more formal registers, which are perceived as more prestigious than the colloquial uses of the language. Second, the notion of Standard Dutch suggests that there is an invariant language system that is shared by a large group of speakers. Third, the notion carries the suggestion that some, often unnamed, authority is able to determine what should or should not be part of the language, or what should or should not be considered proper language use. See Milroy (2001) for extensive discussion of this notion of standard language.

SoD does not provide a description of this prestigious, invariant, externally determined language system. The reason for this is that knowledge of this system does not involve the competence of the individual language user but "is the product of a series of educational and social factors which have overtly impinged on the

linguistic experiences of individuals, prescribing the correctness/incorrectness of certain constructions" (Adger & Trousdale 2007). Instead, the notion of standard language in *SoD* should be understood more neutrally as an idealization that refers to certain properties of linguistic competence that we assume to be shared by the individual speakers of the language. This notion of standard language deviates from the notion of standard language discussed earlier in that it may include properties that would be rejected by language teachers, and exclude certain properties that are explicitly taught as being part of the standard language. To state the latter in more technical terms: our notion of standard language refers to the core grammar (those aspects of the language system that arise spontaneously in the language learning child by exposure to utterances in the standard language) and excludes the periphery (those properties of the standard language that are explicitly taught at some later age). This does not mean that we will completely ignore the more peripheral issues, but it should be kept in mind that these have a special status and may exhibit properties that are alien to the core system.

A distinguishing property of standard languages is that they may be used among speakers of different dialects, and that they sometimes have to be acquired by speakers of such dialects as a second language at a later age, that is, in a similar fashion as a foreign language (although this may be rare in the context of Dutch). This property of standard languages entails that it is not contradictory to distinguish various varieties of, e.g., Standard Dutch. This view is also assumed by Haeseryn et al. (1997: section 0.6.2), who make the four-way distinction in (4) when it comes to geographically determined variation.

(4)　　　• Types of Dutch according to Haeseryn et al. (1997)
　　a.　Standard language
　　b.　Regional variety of Standard Dutch
　　c.　Regional variety of Dutch
　　d.　Dialect

The types in (4b&c) are characterized by certain properties that are found in certain larger, but geographically restricted regions only. The difference between the two varieties is defined by Haeseryn at al. (1997) by appealing to the perception of the properties in question by other speakers of the standard language: when the majority of these speakers do not consider the property in question characteristic for a certain geographical region, the property is part of a regional variety of *Standard Dutch*; when the property in question is unknown to certain speakers of the standard language or considered to be characteristic for a certain geographical region, it is part of a regional variety of *Dutch*. We will not adopt the distinction between the types in (4b) and (4c) since we are not aware of any large-scale perception studies that could help us to distinguish the two varieties in question. We therefore simply join the two categories into a single one, which leads to the typology in (5).

(5)　　　• Types of Dutch distinguished in *SoD*
　　a.　Standard Dutch
　　b.　Regional variety of Dutch
　　c.　Dialect of Dutch

We believe it to be useful to think of the notions in (5) in terms of grammatical properties that are part of the competence of groups of speakers. Standard Dutch can then be seen as a set of properties that is part of the competence of all speakers of the language. Examples of such properties in the nominal domain are that non-pronominal noun phrases are not morphologically case-marked and that the word order within noun phrases is such that nouns normally follow attributively used adjectives but precede PP-modifiers and that articles precede attributive adjectives (if present); cf. (6a). Relevant properties within the clausal domain are that finite verbs occupy the co-called second position in main clauses whereas non-main verbs tend to cluster in the right-hand side of the clause (see (6b)), and that finite verbs join the clause-final non-finite verbs in embedded clauses (see (6c)).

(6) a. de oude man in de stoel   [word order within noun phrases]
        the old   man in the chair
     b. Jan *heeft* de man een lied *horen zingen*.   [verb second/clustering]
        Jan has   the man a song   hear   sing
        'Jan has heard the man sing a song.'
     c. dat Jan de man een lied *heeft horen zingen*.   [verb clustering]
        that Jan the man a song   has   hear   sing
        'that Jan has heard the man sing a song.'

Varieties of Dutch arise as the result of sets of additional properties that are part of the competence of larger subgroups of speakers—such properties will define certain special characteristics of the variety in question but will normally not give rise to linguistic outputs that are inaccessible to speakers of other varieties; see the discussion of (7) below for a typical example. Dialects can be seen as a set of properties that characterizes a group of speakers in a restricted geographical area—such properties may be alien to speakers of the standard language and may give rise to linguistic outputs that are not immediately accessible to other speakers of Dutch; see the examples in (9) below for a potential case. This way of thinking about the typology in (5) enables us to use the language types in a more gradient way, which may do more justice to the situation that we actually find. Furthermore, it makes it possible to define varieties of Dutch along various (e.g., geographical and possibly social) dimensions.

The examples in (7) provide an example of a property that belongs to regional varieties of Dutch: speakers of northern varieties of Dutch require that the direct object *dat boek* 'that book' precede all non-finite verbs in clause-final position, whereas speakers of the southern varieties of Dutch (especially those spoken in the Flemish part of Belgium) will also allow the object to permeate the verb sequence, as long as it precedes the main verb.

(7) a. dat Jan <dat boek> wil <*dat boek> kopen.   [Northern Dutch]
        that Jan that book wants   buy
        'that Jan wants to buy that book.'
     b. dat Jan <dat boek> wil <dat boek> kopen.   [Southern Dutch]
        that Jan that book   wants   buy
        'that Jan wants to buy that book.'

Dialects of Dutch may deviate in various respects from Standard Dutch. There are, for example, various dialects that exhibit morphological agreement between the subject and the complementizer, which is illustrated in (8) by examples taken from Van Haeringen (1939); see Haegeman (1992), Hoekstra & Smit (1997), Zwart (1997), Barbiers et al. (2005) and the references given there for more examples and extensive discussion. Complementizer agreement is a typical dialect property as it does not occur in (the regional varieties of) Standard Dutch.

(8)   a.   As$_{sg}$ Wim komp$_{sg}$, mot jə zorgə   dat je tuis   ben.
             when Wim comes must you make.sure that you at.home are
             'When Wim comes, you must make sure to be home.'

       b.   Azzə$_{pl}$ Kees en Wim   kommə$_{pl}$, mot jə zorgə   dat je tuis   ben.
             when Kees and Wim come   must you make.sure that you home are
             'When Kees and Wim come, you must make sure to be home.'

The examples in (9) illustrate another property that belongs to a certain set of dialects. Speakers of most varieties of Dutch would agree that the use of possessive datives is only possible in a limited set of constructions: whereas possessive datives are possible in constructions like (9a), in which the possessee is embedded in a °complementive PP, they are excluded in constructions like (9b), where the possessee functions as a direct object. Constructions like (9b) are perceived (if understood at all) as belonging to certain eastern and southern dialects, which is indicated here by means of a percentage sign.

(9)   a.   Marie zet   Peter/hem$_{possessor}$ het kind op de knie$_{possessee}$.
             Marie puts Peter/him   the child onto the knee
             'Marie puts the child on Peter's/his knee.
       b. $^{\%}$Hij wast   Peter/hem$_{possessor}$ de handen$_{possessee}$.
             he washes Peter/him   the hands
             'He is washing Peter's/his hands.'

Note that the typology in (5) should allow for certain dialectal properties to become part of certain regional varieties of Dutch, as indeed seems to be the case for possessive datives of the type in (9b); cf. Cornips (1994). This shows again that it is not possible to draw sharp dividing lines between regional varieties and dialects and emphasizes that we are dealing with dynamic systems; see the discussion of (5) above. For our limited purpose, however, the proposed distinctions seem to suffice.

     It must be stressed that the description of the types of Dutch in (5) in terms of properties of the competence of groups of speakers implies that Standard Dutch is actually not a language in the traditional sense; it is just a subset of properties that all non-dialectal varieties of Dutch have in common. Selecting one of these varieties as *Standard Dutch in the more traditional sense described in the beginning of this subsection* is not a linguistic enterprise and will therefore not concern us here. For practical reasons, however, we will focus on the variety of Dutch that is spoken in the northwestern part of the Netherlands. One reason for doing this is that, so far, the authors who have contributed to *SoD* are all native speakers of this variety and can therefore simply appeal to their own intuitions in order to establish whether this variety does or does not exhibit a certain property. A second reason is

that this variety seems close to the varieties that have been discussed in the linguistic literature on "Standard Dutch". This does not mean that we will not discuss other varieties of Dutch, but we will do this only when we have reason to believe that they behave differently. Unfortunately, however, not much is known about the syntactic differences between the various varieties of Dutch and since it is not part of our goal to solve this problem, we want to encourage the reader to restrict the judgments given in *SoD* to speakers of the northwestern variety (unless indicated otherwise). Although in the vast majority of cases the other varieties of Dutch will exhibit identical or similar behavior given that the behavior in question reflects properties that are part to the standard language (in the technical sense given above), the reader should keep in mind that this cannot be taken for granted as it may also reflect properties of the regional variety spoken by the authors of this work.

5. Organization of the material

SoD is divided in four main parts that focus on the four LEXICAL CATEGORIES: verbs, nouns, adjectives and adpositions. Lexical categories have denotations and normally take arguments: nouns denote sets of entities, verbs denote states-of-affairs (activities, processes, etc.) that these entities may be involved in, adjectives denote properties of entities, and adpositions denote (temporal and locational) relations between entities.

The lexical categories, of course, do not exhaust the set of word classes; there are also FUNCTIONAL CATEGORIES like complementizers, articles, numerals, and quantifiers. Such elements normally play a role in phrases headed by the lexical categories: articles, numerals and quantifiers are normally part of noun phrases and complementizers are part of clauses (that is, verbal phrases). For this reason, these functional elements will be discussed in relation to the lexical categories.

The four main parts of *SoD* are given the subtitle *Xs and X phrases*, where *X* stands for one of the lexical categories. This subtitle expresses that each part discusses one lexical category and the ways in which it combines with other elements (like arguments and functional categories) to form constituents. Furthermore, the four main parts of *SoD* all have more or less the same overall organization in the sense that they contain (one or more) chapters on the following issues.

I. Characterization and classification

Each main part starts with an introductory chapter that provides a general characterization of the lexical category under discussion by describing some of its more conspicuous properties. The reader will find here not only a brief overview of the syntactic properties of these lexical categories, but also relevant discussions on morphology (e.g., inflection of verbs and adjectives) and semantics (e.g., the aspectual and tense properties of verbs). The introductory chapter will furthermore discuss ways in which the lexical categories can be divided into smaller natural subclasses.

II. Internal syntax

The main body of the work is concerned with the internal structure of the °projections of lexical categories/heads. These projections can be divided into two subdomains, which are sometimes referred to as the lexical and the functional domain. Taken together, the two domains are sometimes referred to as the EXTENDED PROJECTION of the lexical head in question; cf. Grimshaw (1991). We will see that there is reason to assume that the lexical domain is embedded in the functional domain, as in (10), where LEX stands for the lexical heads V, N, A or P, and F stands for one or more functional heads like the article *de* 'the' or the complementizer *dat* 'that'.

(10)   [FUNCTIONAL ... F ... [LEXICAL .... LEX .....]]

The lexical domain of a lexical head is that part of its projection that affects its denotation. The denotation of a lexical head can be affected by its complements and its modifiers, as can be readily illustrated by means of the examples in (11).

(11) a.   Jan leest.
          Jan reads
      b.   Jan leest een krant.
          Jan reads a newspaper
      c.   Jan leest nauwkeurig.
          Jan reads carefully

The phrase *een krant lezen* 'to read a newspaper' in (11b) denotes a smaller set of states-of-affairs than the phrase *lezen* 'to read' in (11a), and so does the phrase *nauwkeurig lezen* 'to read carefully' in (11c). The elements in the functional domain do not affect the denotation of the lexical head but provide various sorts of additional information.

A. The lexical domain I: Argument structure

Lexical heads function as predicates, which means that they normally take arguments, that is, they enter into so-called thematic relations with entities that they semantically imply. For example, intransitive verbs normally take an agent as their subject; transitive verbs normally take an agent and a theme that are syntactically realized as, respectively, their subject and their object; and verbs like *wachten* 'to wait' normally take an agent that is realized as their subject and a theme that is realized as a prepositional complement.

(12) a. Jan_{Agent} lacht   [intransitive verb]
          Jan   laughs
      b. Jan_{Agent} weet   een $oplossing_{Theme}$.   [transitive verb]
          Jan   knows a solution
      c. Jan_{Agent} wacht op de $postbode_{Theme}$ [verb with PP-complement]
          Jan   waits for the postman

Although this is often less conspicuous with nouns, adjectives and prepositions, it is possible to describe examples like (13) in the same terms. The phrases between straight brackets can be seen as predicates that are predicated of the noun phrase

Jan, which we may therefore call their logical SUBJECT (we use small caps to distinguish this notion from the notion of nominative subject of the clause). Furthermore, the examples in (13) show (a) that the noun *vriend* may combine with a PP-complement that explicates with whom the SUBJECT *Jan* is in a relation of friendship, (b) that the adjective *trots* 'proud' optionally may take a PP-complement that explicates the subject matter that the SUBJECT *Jan* is proud about, and (c) that the preposition *onder* 'under' may take a nominal complement that refers to the location of its SUBJECT *Jan*.

(13) a.　Jan is [een vriend　*van Peter*].
　　　　Jan is　a friend　　　of Peter
　　b.　Jan is [trots　*op zijn dochter*].
　　　　Jan is proud　of his daughter
　　c.　Marie stopt　Jan [onder *de dekens*].
　　　　Marie puts　Jan under　the blankets

That the italicized phrases are complements is somewhat obscured by the fact that there are certain contexts in which they can readily be omitted (e.g., when they would express information that the addressee can infer from the linguistic or non-linguistic context). The fact that they are always semantically implied, however, shows that they are semantically selected by the lexical head.

B. The lexical domain II: Modification

The projection consisting of a lexical head and its arguments can be modified in various ways. The examples in (14), for example, show that the projection of the verb *wachten* 'to wait' can be modified by various adverbial phrases. Examples (14a) and (14b), for instance, indicate when and where the state of affairs of Jan waiting for his father took place.

(14) a　Jan wachtte *gisteren* op zijn vader.　　　　　　　　　　[time]
　　　　Jan waited　yesterday for his father
　　　　'Jan waited for his father yesterday.'
　　b.　Jan wacht　op zijn vader *bij het station*.　　　　　　　[place]
　　　　Jan waits　for his father at the station
　　　　'Jan is waiting for his father at the station.'

The examples in (15) show that the lexical projections of nouns, adjectives and prepositions can likewise be modified; the modifiers are italicized.

(15) a.　Jan is een *vroegere* vriend　van Peter.
　　　　Jan is a former friend　　　of Peter
　　b.　Jan is *erg* trots　　op zijn dochter.
　　　　Jan is very proud　of his daughter
　　c.　Marie stopt　Jan *diep*　onder de dekens.
　　　　Marie puts　Jan deep　under the blankets

C. The functional domain

Projections of the lexical heads may contain various elements that are not arguments or modifiers, and thus do not affect the denotation of the head noun.

Such elements simply provide additional information about the denotation. Examples of such functional categories are articles, numerals and quantifiers, which we find in the nominal phrases in (16).

(16) a. Jan is *de/een* vroegere vriend van Peter.   [article]
        Jan is the/a   former   friend of Peter
   b. Peter heeft *twee/veel* goede vrienden   [numeral/quantifier]
        Jan has   two/many good friends

That functional categories provide additional information about the denotation of the lexical domain can readily be demonstrated by means of these examples. The definite article *de* in (16a), for example, expresses that the set denoted by the phrase *vroegere vriend van Peter* has just a single member; the use of the indefinite article *een*, on the other hand, suggests that there are more members in this set. Similarly, the use of the numeral *twee* 'two' in (16b) expresses that there are just two members in the set, and the quantifier *veel* 'many' expresses that the set is large.

    Functional elements that can be found in verbal projections are tense (which is generally expressed as inflection on the finite verb) and complementizers: the difference between *dat* 'that' and *of* 'whether' in (17), for example, is related to the illocutionary type of the expression: the former introduces embedded declarative and the latter embedded interrogative clauses.

(17) a. Jan zegt [*dat* Marie ziek is].   [declarative]
        Jan says that Marie ill   is
        'Jan says that Marie is ill.'
   b. Jan vroeg [*of*   Marie ziek is].   [interrogative]
        Jan asked whether Marie ill   is
        'Jan asked whether Marie is ill.'

Given that functional categories provide information about the lexical domain, it is often assumed that they are part of a functional domain that is built on top of the lexical domain; cf. (10) above. This functional domain is generally taken to have an intricate structure and to be highly relevant for word order: functional heads are taken to project, just like lexical heads, and thus to create positions that can be used as landing sites for movement. A familiar case is *wh*-movement, which is assumed to target some position in the projection of the complementizer; in this way it can be explained that, in colloquial Dutch, *wh*-movement may result in placing the interrogative phrase to the immediate left of the complementizer *of* 'whether'. This is shown in (18b), where the trace *t* indicates the original position of the moved *wh*-element and the index *i* is just a convenient means to indicate that the two positions are related. Discussion of word order phenomena will therefore play a prominent role in the chapters devoted to the functional domain.

(18) a. Jan zegt [dat Marie een boek van Louis Couperus gelezen heeft].
        Jan says   that Marie a book by Louis Couperus   read   has
        'Jan said that Marie has read a book by Louis Couperus.'
   b. Jan vroeg [wat$_i$ (of)   Marie t_i gelezen heeft].
        Jan asked what whether Marie   read   has
        'Jan asked what Marie has read.'

Whereas (relatively) much is known about the functional domain of verbal and nominal projections, research on the functional domain of adjectival and prepositional phrases is still in its infancy. For this reason, the reader will find independent chapters on this issue only in the parts on verbs and nouns.

III. External syntax

The discussion of each lexical category will be concluded with a look at the external syntax of their projections, that is, an examination of how such projections can be used in larger structures. Adjectives, for example, can be used as °complementives (predicative complements of verbs), as attributive modifiers of noun phrases, and also as adverbial modifiers of verb phrases.

(19) a. Die auto is *snel*.   [complementive use]
         that car is fast
      b. Een *snelle* auto   [attributive use]
         a   fast   car
      c. De auto reed *snel*   weg.   [adverbial use]
         the car drove quickly away
         'The car drove away quickly.'

Since the external syntax of the adjectival phrases in (19) can in principle also be described as the internal syntax of the verbal/nominal projections that contain these phrases, this may give rise to some redundancy. Complementives, for example, are discussed in Section V2.2 as part of the internal syntax of the verbal projection, but also in Sections N8.2, A6 and P4.2 as part of the external syntax of nominal, adjectival and adpositional phrases. We nevertheless have allowed this redundancy, given that it enables us to simplify the discussion of the internal syntax of verb phrases in V2.2: nominal, adjectival and adpositional complementives exhibit different behavior in various respects, and discussing all of these in Section V2.2 would have obscured the discussion of properties of complementives in general. Of course, a system of cross-references will inform the reader when a certain issue is discussed from the perspective of both internal and external syntax.

6. History of the project and future prospects

The idea for the project was initiated in 1992 by Henk van Riemsdijk. In 1993 a pilot study was conducted at Tilburg University and a steering committee was installed after a meeting with interested parties from Dutch and Flemish institutions. However, it took five more years until in 1998 a substantial grant from the Netherlands Organization of Scientific Research (NWO) was finally obtained.

   Funding has remained a problem, which is the reason that *SoD* still is not completed yet. However in the meantime financial guarantees have been created for Hans Broekhuis to finish all four main parts of *SoD* in the next four years. Due to the size of the complete set of materials comprising SoD, we have decided that the time has come to publish those parts that are currently available. In what follows we want to inform the reader of what has been done so far and what is to be expected in the near future.

I. Noun and noun phrases (Hans Broekhuis, Evelien Keizer and Marcel den Dikken)

Work on the present volume, *Nouns and noun phrases*, was started in 1998 by Marcel den Dikken, who, unfortunately, soon left the project for a position at the City University of New York. The work was continued by Evelien Keizer, who left the project at the end of 2000 in order to take up a position at University College London. The first full version of the manuscript was completed in 2003 by Hans Broekhuis. Although most parts of the manuscript have been worked on by more than one author, it is generally possible to point to one chief author. Evelien Keizer should be seen as the chief author of the bulk of the first three chapters. Marcel den Dikken wrote a first, extensive draft of Section 5.1 and should be seen as the main author of Chapter 7. Hans Broekhuis wrote the remaining parts and updated, revised and prepared the complete work for publication in 2008-2011. The complete text was copy-edited by Carole Boster; her suggestions for improvement went far beyond corrections of spelling, grammar and style, and have led to far-reaching reformulations of certain passages.

II. Adjectives and adjective phrases (Hans Broekhuis)

A first version of this work was completed in 1999 and has been updated, revised and prepared for publication in 2008-2011. This part is just over 600 pages and will be published in one volume by Amsterdam University Press in Spring 2013.

III. Adpositions and adpositional phrases (Hans Broekhuis)

A first version of this work was completed in 2002 and has been updated, revised and prepared for publication in 2008-2011. This part is about 400 pages and will be published by Amsterdam University Press in Fall 2013.

IV. Verbs and Verb phrases (Hans Broekhuis and Norbert Corver)

This work will consist of three volumes of about 600 pages each. The first volume is currently in the process of being prepared for publication. It will be published by Amsterdam University Press in Spring 2014. The two remaining volumes are in progress and are expected to be ready for publication before Spring 2016.

In addition to the three main parts in I-IV, we have planned a separate volume in which topics like coordination and ellipsis (conjunction reduction, gapping, etc.) that cannot be done full justice within the main body of this work are discussed in more detail. Furthermore, the *SoD* project has become part of a broader project initiated by Hans Bennis and Geert Booij, called *Language Portal Dutch/Frisian*, which includes similar projects on the phonology and the morphology of Dutch. We may therefore expect that the *SoD* will at some point be complemented by a *PoD* and a *MoD*. The Language Portal also aims at making a version of all this material accessible via internet before January 2016, which will add various functionalities including advanced search options. Finally, we want to note that Henk van Riemsdijk and István Kenesei are currently in the process of initiating a number of grammar projects comparable to *SoD*: languages under discussion include Basque, Hungarian, Japanese, Mandarin, Polish, Romanian, Russian, Swedish, and Turkish. For this reason, the volumes of SoD are published as part of the *Comprehensive Grammar Resources* series, which will bring together the future results of these initiatives.

7. Acknowledgments

Over the years many Dutch linguists have commented on parts of the work presented here and since we do not want to tire the reader by providing long lists of names, we simply thank the whole Dutch linguistic community; this will also safeguard us from the embarrassment of forgetting certain names. Still, we do want to mention a couple of persons and institutions without whom/which this project would never have been started or brought to a good end. First we would like to thank the members of the steering committee (chaired by Henk van Riemsdijk) consisting of Hans Bennis, Martin Everaert, Liliane Haegeman, Anneke Neijt, and Georges de Schutter. Although all members provided us with comments on subparts of the manuscript, Liliane should be mentioned especially in the present context given that she wrote detailed comments on the full work published here. Second, we should mention Riet Vos, who discussed the manuscript with us and provided many suggestions for improvement. Finally, we would like to thank Sjef Barbiers and Norbert Corver for their willingness to draw attention to the *SoD* by writing reviews of the earlier versions of the manuscripts on nouns, adjectives and adpositions that were circulated among a small number of mainly Dutch linguists.

The pilot study for the project, which was performed from November 1993 to September 1994, was made possible by a subsidy from the *Center for Language Studies* and the *University of Tilburg*. This pilot study resulted in a project proposal that was eventually granted by *The Netherlands Organisation for Scientific Research* (NWO) in 1998 and which enabled us to produce the main body of work mentioned in Section 6, sub I to III, during the period from May 1998 to May 2001. The work could be prepared for publication in the period from April 2008 to October 2010 thanks to a subsidy to Hans Broekhuis from the *Truus und Gerrit van Riemsdijk-Stiftung*. Since November 2010 Hans Broekhuis continues his work on *SoD* as an employee of the *Meertens Institute* (KNAW) in Amsterdam. *SoD* has become part of the project *Language Portal Dutch/Frisian*, which is again financed by *The Netherlands Organisation for Scientific Research* (NWO). We gratefully acknowledge the financial and moral support of these institutions and for the opportunity they have given us to develop *SoD*.

November 2011

Hans Broekhuis
Co-author and editor of Syntax of Dutch

Henk van Riemsdijk
Chairman of the steering committee

Introduction

Verbs (V), nouns (N), adjectives (A) and prepositions (P) constitute the four major word classes. The present study deals with nouns and their projections (noun phrases). The general introduction in Chapter 1 provides a survey of the most distinctive syntactic, semantic and morphological characteristics of noun phrases, as well as a semantic classification of nouns.

Roughly speaking, the noun phrase consists of two subdomains: the lexical and the functional domain. The lexical subdomain consists of the head noun and its °arguments and °modifiers, which determine the denotation of the noun phrase; this domain will be called the NP-domain (or NP for short). The functional subdomain consists of the determiner and numerals/quantifiers, which determine the reference and/or the quantificational properties of the noun phrase; this domain will be called the DP-domain (or DP). The organization of this study reflects this division within the noun phrase.

Chapter 2 through Chapter 4 discuss the NP-domain: complementation and modification of nouns are discussed in Chapter 2 and Chapter 3, respectively, and Chapter 4 discusses so-called binominal constructions like *een emmer peren* 'a bucket [of] pears', that is, noun phrases that involve sequences of more than one noun.

Chapter 5 through Chapter 7 focus on the DP-domain. Chapter 5 starts with a discussion of the determiners, which can be divided into at least the following subcategories: articles, demonstrative pronouns and possessive pronouns. According to some researchers, the personal pronouns can also be considered determiners, and they will therefore be discussed in this chapter as well. Although there are good reasons to also consider relative pronouns as determiners, we will discuss these for practical reasons in Section 3.3.2 on relative clauses. Chapter 6 continues with a discussion of the numerals and quantifiers like *sommige* 'some' and *alle* 'all'. Chapter 7 concludes with a discussion of the so-called pre-determiner elements *al* and *heel*, which may modify the determiner.

This study is concluded in Chapter 8, where we focus on the syntactic uses and the distribution of the noun phrase. Among other things, this chapter provides a discussion of °scrambling, that is, the position of noun phrases in the so-called °middle field of the clause.

Before we start our discussion, we want to emphasize that, as above, we will make a terminological distinction between noun phrases, NPs and DPs in this study. The first notion is used when we need not make a distinction between the NP- and the DP-domain. The latter two notions, on the other hand, are used when we focus on certain aspects of the NP- or the DP-domain in the sense defined above. See Section 1.1.2 for a more detailed discussion of these notions.

Chapter 1
Nouns: characterization and classification

Chapter 4
Projection of noun phrases III: binominal constructions

Introduction

This chapter will discuss nominal °projections that contain two nouns without it being obvious which of the two nouns is to be considered the head of the construction. Section 4.1 will discuss noun phrases of the type *een paar boeken* 'a couple of books', in which two nouns may occur adjacently, without an intervening preposition. Section 4.2 will discuss binominal constructions that do require the presence of a preposition, such as the *N of a N* construction *een schat van een kind* 'a treasure of a child', in which the preposition *van* obligatorily intervenes between the two noun phrases.

4.1. Binominal constructions without a preposition

This section discusses binominal constructions in which the two nouns may or must occur adjacently, that is, without a preposition connecting the two. Section 4.1.1 will discuss constructions like *een paar boeken* 'a couple of books', in which the first noun quantifies the latter. Section 4.1.2 continues with the apparently similar non-quantificational construction *een soort boek* 'a kind of book'. Section 4.1.3 concludes with an overview of several other types of binominal constructions.

4.1.1. *Quantificational constructions:* een paar boeken *'a couple of books'*

This section discusses quantificational binominal constructions, that is, noun phrases in which the quantificational part of the noun phrase is expressed by means of another noun phrase. An example is given in (1a). The first noun phrase *een paar* 'a couple' expresses the quantity of the set of objects denoted by the second noun phrase *voorbeelden* 'examples'. In other words, the string *een paar* is comparable to the cardinal numeral *twee* 'two' or the quantifier *enkele* 'some' in (1b). Since English features the preposition *of* in the renderings of examples like (1a), we will include this preposition in the glosses within square brackets for convenience.

(1) a.   een paar   voorbeelden
           a couple [of] examples
           'a couple of examples'
     b.   twee/enkele voorbeelden
           two/some   examples

The quantificational binominal construction in (1a), which will henceforth be referred to as QC, is remarkable in that the two noun phrases seem to be juxtaposed: unlike in English, no preposition, such as *van* 'of', is used. For convenience, we will distinguish the two nouns by appealing to linear order: the first noun in a QC will be referred to as N_1 and the second one as N_2. Thus, in example (1a) the noun *paar* is an N_1, and *voorbeelden* is an N_2.

This section is organized as follows. Section 4.1.1.1 starts by giving a brief characterization of the types of N_1 and N_2 that can be used. Section 4.1.1.2 continues by showing that there exist at least three types of QC, depending on whether N_1 or N_2 acts as the syntactic/semantic head of the construction. Sections 4.1.1.3 and 4.1.1.4 will go more deeply into the properties of N_1 and N_2, respectively. Subsequently, Section 4.1.1.5 will discuss various aspects of

modification of the nouns in QCs. Finally, Section 4.1.1.6 concludes by providing a discussion of two related constructions, which we will refer to as the partitive and pseudo-partitive construction.

4.1.1.1. Types of N_1s and N_2s

This section briefly characterizes the types of nouns that can be used as N_1 or N_2 in a quantificational binominal construction (QC).

I. Types of N_1s

Example (2) gives several types of nouns that are frequently used as N_1s in a QC. These nouns share the semantic property that they can be used to refer to a certain number of entities or a certain quantity of a substance denoted by N_2.

(2) Semantic types of N_1s in quantificational binominal constructions

	EXAMPLES OF NOUNS	EXAMPLE
QUANTIFIER NOUNS (QNs)	*aantal* 'number', *(hele)boel* 'lot', *hoop* 'lot', *paar* 'couple', *stel* 'couple', etc.	*een hoop problemen* a lot [of] problems
MEASURE NOUNS (MNs)	*kilo* 'kilo', *liter* 'liter', *meter* 'meter', *dozijn* 'dozen', *gros* 'gross', etc.	*een kilo bonen* a kilo [of] beans
CONTAINER NOUNS (ConNs)	*doos* 'box', *emmer* 'bucket', *krat* 'crate', etc.	*een doos pillen* a box [of] pills
PART NOUNS (PartNs)	*brok* 'piece', *klontje* 'lump', *reep* 'bar', *stuk* 'piece', etc.	*een stuk cake* a piece [of] cake
COLLECTIVE NOUNS (ColNs)	*dozijn* 'dozen', *groep* 'group', *kudde* 'flock', *paar* 'pair', *rij* 'row', *stapel* 'pile', *serie* 'series', *zwerm* 'swarm'	*een groep studenten* a group [of] students

Often, some nouns act as belonging to more than one group, which may give rise to ambiguity. This holds especially for quantifier nouns, which often may be either purely quantificational (that is, without any descriptive content), or more referential, that is, with descriptive content that enables them to refer to an entity. A clear example is the noun *paar* 'couple'. The QC in (3a) is ambiguous between two readings. On the first reading, the noun *paar* acts as a quantifier noun and can be translated as "couple/number of": the noun has a purely quantificational function and QC refers to a small number of shoes. On the second reading, the noun acts as a collective noun and must be translated as "pair of": the noun has descriptive content that enables it to denote a certain set of entities, and the QC refers to two shoes that form a pair. Observe that the quantificational reading is not available when N_1 is preceded by a definite article, as in (3b).

(3) a. een paar   schoenen
         a   couple/pair [of] shoes
     b. het paar   schoenen
         the pair [of]   shoes

Another example involves the noun *aantal* 'number' in (4). Example (4a) shows that the noun *aantal* can be used as a quantifier noun when it is preceded by the

indefinite article *een* 'a': the QC refers to a small, but indefinite number of students. However, when *aantal* is preceded by the definite article *het* 'the', as in (4b), it must refer to an actual number; in this case it probably acts as a measure noun.

(4)   a.   Er   lopen een aantal   studenten over het grasveld.
           there walk a number [of] students   across the lawn
           'A number of students are walking across the lawn.'
   b.   Het aantal   studenten is dit jaar   weer gedaald.
           the number [of] students   is this year again decreased
           'The number of students has decreased again this year.'

It is not clear whether the classification in (2) is exhaustive, and occasionally it may be difficult to decide to which semantic class a certain N_1 belongs. Furthermore, N_1s tend to shift from one class to another (especially in the direction of quantifier nouns) when their referring force weakens, which is what probably happened to the nouns *paar* and *aantal* in (3) and (4), and the same may be true for the quantifier noun *hoop*, which is related to the collective noun *hoop* 'heap'. In this section, such N_1s will mainly be discussed in their (unmarked) function as quantifier nouns.

Finally, it can be noted that many nouns that normally do not occur as N_1 can enter QCs when they are followed by the unstressed adjective *vol* 'full' in (5a); some formations, like *een handvol* 'a handful of', are even fully lexicalized. The quantificational adjective *heel* 'complete' and some other attributive adjectives may have a similar effect. Some examples are given in (5b&c).

(5)   a.   een tafel $^{??}$(vol)   cadeaus
           a table   full [of] presents
   b.   een $^{??}$(hele) tafel   cadeaus
           a   whole table [of] presents
   c.   een $^{*?}$(lange) brief   jobstijdingen
           a   long   letter [of] bad news

II. Types of N_2s

Example (6) shows that an N_2 can be either a plural count noun or a non-count noun: singular count nouns cannot be used as such. What these two categories have in common is the property of CUMULATIVITY or DIVISIBILITY: the union of two sets of entities denoted by a plural noun results in a larger set of the same entities, and the division of such a set of entities results in smaller sets of the same entities; similarly the union of two quantities of a substance denoted by a non-count noun results in a larger quantity of the same substance, and the division of a quantity of a substance results in smaller quantities of the same substance. This property does not hold for singular nouns: a singular noun refers to an entity and the union of two entities forms a set, while the division of an entity results in entities of a different kind.

(6) Types of N₂s in quantificational binominal constructions

| | COUNT NOUNS | | NON-COUNT NOUNS |
	PLURAL	SINGULAR	
QN	*een hoop problemen* a lot [of] problems	**een hoop probleem* a lot [of] problem	*een hoop lawaai* a lot [of] noise
MN	*een kilo bonen* a kilo [of] beans	**een kilo boon* a kilo [of] bean	*een kilo kaas* a kilo [of] cheese
CONN	*een doos pillen* a box [of] pills	**een doos pil* a box [of] pill	*een pot zalf* a pot [of] ointment
COLN	*een groep studenten* a group [of] students	**een groep student* a group [of] students	*een kudde vee* a herd/flock [of] cattle
PARTN	**een stuk koekjes* a piece [of] cookies	**een stuk koekje* a piece [of] cookie	*een stuk cake* a piece [of] cake

Example (6) also shows that the part nouns are special in licensing non-count nouns only. There are more instances where additional requirements apply. A quantifier noun like *sloot*, which literally means "ditch", for example, can normally only be combined with a substance noun denoting a liquid. This is shown in (7a). Similarly, many collective nouns impose special requirements on N₂: the collective noun *kudde* 'herd/flock' in (7b) can only be combined with nouns referring to certain species of mammals, *zwerm* 'swarm' mainly with certain types of flying insects, *vlucht* 'flock' only with birds, *school* 'shoal' only with fish, etc.

(7) a. een sloot   melk/*zand/*boeken
          a ditch [of]   milk/sand/books
     b. een kudde olifanten/vee
          a herd [of] elephants/cattle

These special restrictions are by no means strict but violating them will generally result in some special effect. The collective noun *kudde* 'herd/flock', for example, can be used derogatively in combination with nouns referring to people, as in example (8a). Here the noun *kudde* is used figuratively, and as a result (8a) can be used to refer to students with certain properties that are normally attributed to elephants or cattle, like being noisy/destructive or docile. In the case of the noun *sloot* 'ditch', the difference between (7a) and (8b) has nothing to do with figurative speech, given that *sloot* is hardly ever used literally in QCs; instead, the difference here seems to be that between substances that could fill a ditch and things that could not. In the latter case, *sloot* can also be followed by a plural noun, and the meaning conveyed is typically negative, e.g., "too many".

(8) a. een kudde   studenten
          a   herd [of] students
     b. een sloot   kinderen/aanmeldingen
          a   ditch [of] children/applications

4.1.1.2. The head of the quantificational binominal construction

It is often not immediately clear whether N_1 or N_2 constitutes the head of a certain QC. This section argues that we have to distinguish the three types of QC in (9), and discusses which types of N_1s can enter into which types of QC. Some N_1s may occur in more than one construction type; these N_1s are often ambiguous between a reading as quantifier noun and one of the other types in example (2) above.

(9)   • Quantificational binominal constructions
   a.   Type 1: N_2 is both the syntactic and the semantic head of the construction
   b.   Type 2: N_1 is the syntactic and N_2 is the semantic head of the construction
   c.   Type 3: N_1 is both the syntactic and the semantic head of the construction

4.1.1.2.1.   Determining the syntactic head of the construction

This section provides two agreement tests to determine which N functions as the *syntactic* head of the binominal construction. These tests will also reveal that QCs are sometimes ambiguous in the sense that both N_1 and N_2 may function as the syntactic head.

I. Subject-verb (number) agreement

The first test focuses on the fact that the finite verb agrees in number with the subject of the clause. Given that the two nouns in the QC may differ in number, we can determine the syntactic head of the construction by looking at the number specification of the finite verb: the noun that the verb agrees with is the syntactic head. Example (10) illustrates this for the quantifier noun *boel* 'a lot' and the collective noun *groep* 'group'. In (10a), the number specification on the finite verb clearly shows that we must consider the plural N_2 *studenten* 'students' as the syntactic head of the construction and not the singular N_1 *boel*. In (10b), on the other hand, the singular agreement on the verb unambiguously shows that it is the singular N_1 *groep* that acts as the syntactic head.

(10) a.   Er   demonstreren/*demonstreert   een boel studenten.
          there   protest$_{pl}$/protests$_{sg}$ a lot [of] students
          'A lot of students are demonstrating.'
     b.   Er   demonstreert/*demonstreren   een groep studenten.
          there   protests$_{sg}$/protest$_{pl}$ a group [of] students
          'A group of students is demonstrating.'

Since we have seen in Section 4.1.1.1 that the noun *aantal* is ambiguous between a quantifier and a collective reading, it is expected that QCs with this noun will show mixed behavior with respect to subject-verb agreement. The examples in (11) show that this expectation is indeed borne out. It must be noted, however, that the two examples seem to differ in their preferential agreement pattern: a search in the *Corpus Gesproken Nederlands* by Van Eerten (2007) has pointed out that in examples like (11a) the majority of cases (76%) exhibit plural agreement, whereas in examples like (11b) there is a clear preference for singular agreement (70%). This may be related to the fact that the QC in (11) is indefinite, and that placement

of indefinite phrases into clause-initial position triggers a partitive reading, which may be more readily available on the referential reading of N_1.

(11) a. Er   demonstreert/demonstreren   een aantal studenten.
      there protests$_{sg}$/protest$_{pl}$ a number [of] students
      'A number of students are demonstrating.'
  b. Een aantal studenten   demonstreert/demonstreren.
      a number [of] students protests$_{sg}$/protest$_{pl}$
      'A number of students are demonstrating.'

When N_1 is a measure noun, there are also two options: in (12), the verb may exhibit singular agreement, in which case it agrees with the singular N_1 *kilo* 'kilo', or plural agreement, in which case it agrees with the plural N_2 *appels* 'apples'. To our ear, the primeless examples are equally good, whereas the primed examples with the QC in clause-initial position, which is always somewhat marked, clearly prefer singular agreement.

(12) a. Er   ligt   een kilo appels   op tafel.
      there lies$_{sg}$ a kilo$_{sg}$ [of] apples on the.table
  a′. ?Een kilo appels ligt op tafel.
  b. Er   liggen een kilo appels   op tafel.
      there lie$_{pl}$ a kilo [of] apples$_{pl}$ on the.table
  b′. *Een kilo appels liggen op tafel.

This suggests that in this case we are also dealing with an ambiguity between a purely quantificational and a more referential reading of the noun. This seems to be supported by the fact illustrated in the primeless examples in (13) that measure nouns exhibit different behavior with respect to pluralization in the two constructions: these examples show that N_1 is marked for the plural when it agrees with the verb, but not when the verb agrees with N_2, the substance noun *melk* 'milk'. From this we must conclude that when the measure noun *liter* is not the syntactic head of the QC, it loses its ability to form a plural, which might be construed as an indication that it has lost its referential status of count noun.

(13) a. Er   staan/*staat twee liters   melk in de koelkast.
       there stand/stands two liters [of] milk in the fridge
  a′. ?Twee liters melk staan in de koelkast.
  b. Er   staat/*staan twee liter   melk in de koelkast.
       there stands/stand two liter [of] milk in the fridge
  b′. *Twee liters melk staat in de koelkast.

This is further supported by the fact that there is also a semantic difference between the examples. In (13a) we perceive the milk as two quantificational units of one liter each; henceforth, we will call this the PACKAGE UNIT READING, given that there is an implication that the milk was purchased in containers that each contain one liter of milk. In (13b), on the other, we do not perceive the milk as being available in certain units: there may be a single container that contains two liters of milk or there may be more, as long as the total quantity is (about) two liters. The primed examples show

again that the QC can only occur in clause-initial position when N_1 has a referential reading.

The ambiguity described above may only arise when the descriptive content of N_1 is weak: it is hard to determine what the denotation set of nouns like *boel* 'a lot', *aantal* 'number', *kilo* 'kilo' and *liter* 'liter' is. When the N_1 does have a clear descriptive content, like the collective and container nouns in (14), agreement with this noun is strongly preferred.

(14) a.   Een kudde olifanten gaat/$^{*?}$gaan voorbij.
            a herd [of] elephants passes/pass prt.
      b.   Er   ligt/*liggen een zakje snoepjes op tafel.
            there lies/lie   a bag [of] sweets   on the.table

Part nouns like *reep* 'bar' in (15) also seem to have descriptive content, and we therefore expect them to trigger agreement on the verb. This is indeed the case although we cannot show this solely by appealing to the agreement facts because part nouns are always used in combination with a substance noun, which triggers singular agreement on the verb: the fact that the verb in (15a) is singular therefore does not tell us much. The plural agreement in (15b), of course, conclusively shows that N_1 can act as the syntactic head of the construction, but, since we have seen in (13a) that the verb must agree with plural N_1s, this still does not suffice to exclude the possibility that N_2 may function as the syntactic head in (15a). However, the fact that the part noun counterpart of (13b), given in (15c), is unacceptable seems sufficient to conclude that the part nouns must function as the syntactic head of a QC: if N_2 can act as the syntactic head of the construction, this example should be grammatical.

(15) a.   Er   ligt een reep chocola   op tafel.
            there lies a bar [of] chocolate on the.table
            'There is a bar of chocolate on the table.'
      b.   Er   liggen/*ligt twee repen chocola   op tafel.
            there lie/lies   two bars [of] chocolate on the.table
            'There are two bars of chocolate on the table.'
      c.   *Er   ligt/liggen twee reep chocola   op tafel.
            there lies/lie   two bar [of] chocolate on the.table

The examples in (10) to (15) have shown that the number features that trigger number agreement on the finite verb can be either situated on N_2 or on N_1. The actual choice seems related to whether N_1 is referential or purely quantificational. A purely quantificational noun like *boel* 'lot' in (10) apparently does not have the necessary features to trigger agreement on the verb, whereas referential nouns like the collective noun *kudde* 'herd' in (14a) or the part noun *reep* 'bar' in (15) do have these features. Other nouns, like the measure noun *liter*, seem to have some intermediate status, and the question whether they trigger agreement on the verb or not depends on whether they have a purely quantificational or a more referential function.

II. Demonstrative pronouns (gender/number agreement)

That both N_1 and N_2 may act as the syntactic head of the construction can also be shown on the basis of demonstrative pronouns. Demonstratives agree with the head noun in gender and number: when the head noun is [+NEUTER, SINGULAR], the proximate and distal demonstrative are, respectively, *dit* 'this' and *dat* 'that', whereas in all other cases they are respectively *deze* 'this/these' and *die* 'that/those'; cf. Section 5.2.3.1. The examples in (16), which contain a neuter, singular N_1, show that the proximate demonstrative can indeed agree with both nouns. In the primeless examples the proximate demonstrative agrees with the neuter N_1, whereas in the primed examples it is the plural/non-neuter N_2 that triggers agreement. Some people object to the primed examples, but the pattern is very common, especially with the noun *paar*: a Google search on the string *[die paar]* in November 2008 resulted in nearly two million hits, and the first 50 cases all instantiated the construction. Examples like (16b′) are less numerous but they do occur: a search on the string *[die pond]* resulted in 3000 hits, and 6 out of the first 50 cases instantiated the construction.

(16) a. dat paar   eenden   a′. die   paar   eenden
         that couple [of] ducks   those couple [of] ducks
     b. dat pond   kaas   b′. die pond   kaas
         that pound [of] cheese   that pound [of] cheese

The same thing can be shown for the proximate demonstratives, although the numbers are not as impressive as in the case of the distal ones: our search on the string *[deze paar]* resulted in 14,000 hits, and 46 out of the first 50 instantiated the construction; our search on the string *[deze pond]* resulted in just a single instance of the desired construction.

(17) a. dit paar   eenden   a′. deze paar   eenden
         this couple [of] ducks   these couple [of] ducks
     b. dit/dat pond   uien   b′. deze pond   kaas
         this/that pound [of] onions   this pound [of] cheese

As expected, the two options in (16) and (17) differ in interpretation. This is clearest in the (a)-examples with the noun *paar*: in the primeless examples, the QC refers to two ducks that belong together and form a couple; in the primed examples, on the other hand, the noun *paar* has a purely quantificational meaning: it merely refers to a small number of ducks. Something similar holds for the (b)-examples: in the primeless examples, the QC refers to a single piece of cheese, whereas no such implication holds for the primed examples. This suggests again that agreement with N_1 is only possible when it is referential: when it is purely quantificational, it is N_2 that enters the agreement relation. This conclusion seems to be supported by the fact, illustrated in (18), that diminutive formation is blocked when N_2 agrees with the demonstrative: this suggests that N_1 has lost its referential status in this case. We will return to this in Section 4.1.1.3.1.

(18) a.   dit/dat paartje   eenden
             this   couple$_{dim.}$ [of] ducks
      a′.   *deze/die paartje   eenden
      b.   dit/dat pondje   kaas
             this/that pound$_{dim.}$ [of] cheese
             'this piece of cheese that weighs nearly a pound'
      b′.   *deze/die pondje kaas

Again, the ambiguity only arises with nouns with little descriptive content. It does not occur with container, collective and part nouns. In (19a&b), the container noun *fles* and the collective noun *kudde* are non-neuter, whereas the non-count nouns *bier* and *vee* are neuter, and only the non-neuter demonstratives can be used. In (19c), the part noun *stuk* is neuter, whereas the N_2 *kaas* is non-neuter, and only the neuter demonstrative gives rise to a grammatical result.

(19) a.   deze/die fles   bier   a′. *dit/dat fles   bier
             this/that bottle [of] beer   this/that bottle [of] beer
      b.   deze/die kudde   vee   b′. *dit/dat kudde   vee
             this/that herd [of] cattle   this/that herd [of] cattle
      c.   dit/dat stuk   kaas   c′. *deze/die stuk   kaas
             this/that piece [of] cheese   this/that piece [of] cheese

III. Conclusion

The two subsections above have shown that subject-verb agreement as well as gender marking on demonstrative pronouns can be determined by either N_1 or N_2, depending on the type of noun we are dealing with: when we are dealing with a purely quantificational N_1, it is always N_2 that triggers agreement; when N_1 has descriptive content, that is, when N_1 is a container, collective or part noun, it is N_1 that triggers agreement. The measure nouns seem special in allowing both patterns. Some nouns are ambiguous, and can be used either as a quantifier noun or as a noun of some other type.

4.1.1.2.2. N_1 and N_2 as the semantic head of the construction

This section discusses the question of what the *semantic* head of the construction is. We will show that QCs are ambiguous in the sense that both N_1 and N_2 may function as the semantic head. For this we will provide evidence involving semantic restrictions imposed by the verb on its arguments, modification by attributive adjectives, and °binding relations between the QC and reciprocal pronouns.

I. Semantic selection restrictions of the verb

Verbs may impose several semantic selection restrictions on their arguments. Verbs like *zich verspreiden* 'to disperse' and *omsingelen* 'to surround', for example, generally require a plural noun phrase as their subject: in (20a′), for example, use of the singular noun phrase *de student* 'the student' gives rise to a semantically anomalous result. That the restriction is semantic in nature and not syntactic is clear from the fact that the use of singular noun phrases referring to collections of

entities, like *politie* 'police', results in an acceptable construction. The symbol "$" is used to indicate semantic incompatibility.

(20) a.   De studenten verspreiden zich.
            the students   disperse   REFL
      a′.   De politie/$student verspreidt zich.
            the police/student   disperses   REFL
      b.   De studenten omsingelen het gebouw.
            the students   surround   the building
      b′.   De politie/$student omsingelt het gebouw.
            the police/student   surrounds the building

That the semantic restriction is not related to syntax is made even clearer by the QC constructions in (21): in (21a) the semantic restriction is satisfied by the syntactic head of the construction, but in (21b) the noun that triggers agreement and the noun that satisfies the semantic restriction are different.

(21) a.   Er   omsingelen een aantal studenten   het gebouw.
            there surround   a number [of] students the building
            'There are a number of students surrounding the building.'
      b.   Een aantal studenten   omsingelt het gebouw.
            a number [of] students surround   the building
            'A number of students are surrounding the building.'

Example (21b) conclusively shows that there is no *a priori* reason to assume that N_2 can only act as the semantic head of the QC when N_1 has a purely quantificational meaning. And the examples in (22) show that there is, indeed, no such restriction. Example (22a) shows that a verb like *verzamelen* 'collect' requires the direct object to refer to a set of separable entities like stamps or pieces of furniture. The unacceptability of (22b) shows that a noun phrase headed by a container noun like *doos* 'box' does not satisfy this selection restriction. The acceptably of (22c) therefore shows that in QCs with a container noun, it is N_2 that satisfies the semantic restrictions.

(22) a.   Jan verzamelde postzegels/porselein.
            Jan collected   stamps/china
      b. $Jan verzamelde een doos.
            Jan collected   a box
      c.   Jan verzamelde een doos   postzegels/porselein.
            Jan collected   a box [of] stamps/china

The same can be shown by appealing to other types of semantic restrictions. A verb like *roken* 'to smoke', for example, selects a direct object that refers to either some substance like tobacco that can be smoked, or an entity that is made out of this substance, like a cigar; cf. in (23a). Example (23b) is infelicitous given that a noun phrase like *een doos* 'a box' does not satisfy this selection restriction. Consequently, the fact that (23c) is acceptable shows that the selection restrictions of the verb can be satisfied by N_2 despite the fact, discussed in 4.1.1.2.1, that N_1 is always the syntactic head of the construction.

(23)   a.   Jan rookt   tabak/een sigaar.
            Jan smokes tobacco/a cigar
       b. $Jan rookt   een doos.
            Jan smokes a box
       c.   Jan rookt   een doos   sigaren.
            Jan smokes a box [of] cigars

In passing, note we have put aside that example (23b) is acceptable under a
generic/habitual interpretation: *Hij rookt een doos per dag* 'He smokes a box per
day'. In cases like these, we are dealing with an elliptic QC construction: Jan does
not smoke the box, but its contents. Such constructions are only acceptable when
information about the contents of the box is available to the addressee.

    It is important to note that the descriptive content of the container noun in the
QC *een doos sigaren* in (23c) has been backgrounded in favor of the package unit
reading: the QC does not refer to a box with certain contents but to a certain number
of cigars. This does not mean, however, that this happens in all cases. Consider the
examples in (24), where the verb *sluiten* 'to close' is substituted for the verb *roken*
'to smoke' in (23). The examples in (24a&b) show that the noun phrase *sigaren*
cannot satisfy the semantic selection restrictions of this verb, whereas the noun
phrase *een doos* can. From the fact that (24c) is acceptable, we must conclude that
N_1 functions as the semantic head of the QC, which implies that it has retained its
descriptive content: we are still referring to a box with certain contents, not to a
number of cigars. The contrast between (23) and (24) therefore shows that QCs
headed by a container noun are ambiguous.

(24)   a. $Jan sloot   sigaren.
            Jan closed cigars
       b.   Jan sloot   een doos.
            Jan closed a box
       c.   Jan sloot   een doos   sigaren.
            Jan closed a box [of] cigars
            'Jan closed a box of   cigars.'

    It seems that the measure, collective and part nouns behave just like the
container nouns. We will therefore restrict our discussion of these types by showing
in (25) that in QCs headed by these nouns, N_2 may also satisfy the semantic
selection restrictions imposed by the verb.

(25)   a.   Jan at   een kilo paddenstoelen.
            Jan ate a kilo [of] mushrooms
       b.   Hij is   gestoken door een zwerm wespen.
            he   has.been stung   by a swarm [of] wasps
       c.   Hij   heeft een stuk taart   opgegeten.
            he   has   a piece [of] cake prt.-eaten

    This subsection has shown that most QCs are ambiguous depending on whether
N_1 receives a more referential or a more quantification interpretation: in the former
case it is N_1 that functions as the semantic head of the construction and in the latter
case it is N_2 that has this function. The question which head functions as the

semantic head is independent of the question which head functions as the syntactic head: the two functions may but need not be performed by the same noun. The quantifier nouns are different from the other nouns in that they never function as the semantic head of the construction, which is related to the fact that they do not have much descriptive content to begin with.

II. Attributive modification

That N_2 can be the semantic head of the construction is also clear from the fact that the QC as a whole can be modified by attributive modifiers that belong to N_2 rather than to N_1. Some examples are given in (26). The primeless and primed examples are more or less synonymous, which suggests that the attributive adjective modifies N_2 in both cases.

(26) a. een koud glas   bier   a′. een glas   koud bier
          a   cold   glass [of] beer   a   glass [of] cold beer
      b. een lekker glas   bier   b′. een glas   lekker bier
          a   tasty glass [of] beer   a   glass [of] tasty beer

That it is not N_1 that is modified is particularly clear from the examples in (27a&b): in these examples the adjectives can only modify the noun *glas*, as a result of which the primeless and primed examples are no longer synonymous. Furthermore, example (27b) receives an anomalous interpretation (which seems to be marginally accepted by some speakers).

(27) a. #een koud glas met bier   a′. een glas met   koud bier
          a   cold glass with beer   a glass with cold beer
      b. $een lekker glas met bier   b′. een glas met   lekker bier
          a   tasty glass with beer   a glass with tasty beer

The unacceptability of (28) points in the same direction: given the fact that *vies* 'unsavory' and *lekker* 'tasty' are antonyms, the structure results in a contradiction (it must be noted, however, that examples like these are sometimes used as puns).

(28)   #een *lekkere* kop   *vieze* koffie
          a   nice   cup [of] bad coffee

The fact that the adjective is allowed to modify N_2 does not imply that it also agrees with this noun in number/gender. This is illustrated in (29): example (29a) shows that the non-neuter substance noun *wijn* requires that the inflected form of the adjective be used; in (29b), on the other hand, the *-e* ending is absent because the adjective agrees with the singular neuter noun *glas*.

(29) a. een lekkere/*lekker wijn
          a   tasty   wine
      b. een lekker/*lekkere glas   wijn
          a   tasty   glass [of] wine

There seem to be certain restrictions on the availability of the intended reading, which are not entirely clear.. For example, although the QC in (30a) can be found on the internet (2 hits), we have the impression that the order in (30a′) is much

preferred. Example (30b), furthermore, shows that when the adjective and N_2 form a fixed collocation, like *witte wijn* 'white wine', the adjective must immediately precede N_1: the primeless example can only refer to a white bottle.

(30) a. ?een zure fles melk   a′. een fles zure melk
          a sour bottle [of] milk   a bottle [of] sour milk
      b. #een witte fles wijn   b′. een fles witte wijn
          a white bottle [of] wine   a bottle [of] white wine

Finally, when the attributive adjective can also be used to modify N_1, the reading in which the adjective preceding N_1 modifies N_2 is excluded: the two (a)-examples in (31) are not synonymous, and example (31b) does not lead to a contradiction.

(31) a.   een kleine doos knikkers
           a small box [of] marbles
      a′. een doos kleine knikkers
           a box [of] small marbles
      b.   een *grote* doos *kleine* knikkers
           a big box [of] small marbles

So far we have only used container nouns, but the (a)- and (b)-examples in (32) show that similar facts can be found with, respectively, collective and part nouns. That we are dealing here with a modifier of N_2 and not with a modifier of N_1 is supported by the fact that N_1 can only be modified by a very small class of attributively used adjectives; see Section 4.1.1.3.2, sub V, for discussion and examples.

(32) a.   een gezellige groep studenten
           a sociable group [of] students
      a′. een luidruchtige groep studenten
           a noisy group [of] students
      b.   een geel stuk krijt
           a yellow piece [of] chalk
      b′. een dodelijk brok radioactief afval
           a deadly piece [of] radioactive waste

This does not mean, however, that the modifier can always precede N_1: the examples in (33) show that quantifier and measure nouns do not license this kind of modification; the modifier of N_2 must follow N_1.

(33) a.   een aantal luidruchtige studenten
           a number [of] noisy students
      a′. *?een luidruchtig aantal studenten
      b.   een kilo geel krijt
           a kilo [of] yellow chalk
      b′. *?een geel kilo krijt

III. Binding

That N_2 can be the semantic head of a QC can also be shown by means of the interpretation of the reciprocal pronoun *elkaar* 'each other', which must have a °c-commanding syntactically plural antecedent; cf. Section 5.2.1.5, sub III. For our present purpose, it suffices to say that a reciprocal pronoun that functions as a (PP-)object of the verb can be interpreted as coreferential with the subject of the clause but not with some noun phrase embedded in the subject of the clause. In (34a), for example, *elkaar* can be bound by the subject *de ouders van Jan en Marie* 'Jan and Marie's parents', but crucially not by the noun phrase *Jan and Marie*. The same thing holds for (34b) where the noun phrase *hun ouders* 'their parents' can be coreferential with *elkaar*, whereas the possessive pronoun *hun* 'their' embedded in the subject cannot.

(34) a. $[_{NP}$ De ouders $[_{PP}$ van $[_{NP}$ Jan en Marie$]_j$ $]]_i$ slaan elkaar$_{i/*j}$.
           the parents   of   Jan and Marie   beat   each.other
      b. $[_{NP}$ Hun$_j$ ouders$]_i$ slaan elkaar$_{i/*j}$.
           their parents   beat   each.other

The examples in (35) show that N_2 cannot be considered as embedded in the subject in the same way as, for instance, the possessive pronoun *hun* 'their' in (34b). Irrespective of the type of N_1, N_2 is able to bind the reciprocal *elkaar* 'each other'. Note that we do not include examples of a QC with a part noun because these nouns can only be combined with non-count nouns, which cannot act as the antecedent of a reciprocal.

(35) a. Een hoop   pieren$_i$ krioelen/$^?$krioelt door elkaar$_i$.   [QN]
          a couple [of] rain.worms swarm/swarms   through each.other
      b. Een pond   pieren$_i$ krioelt/$^?$krioelen door elkaar$_i$.   [MN]
          a pound [of] rain.worms swarms/swarm   through each.other
      c. Een emmer   pieren$_i$ krioelt/*krioelen door elkaar$_i$.   [ConN]
          a bucket [of] rain.worms swarms/swarm   through each.other
      d. Een club   toeristen$_i$ fotografeert/*fotograferen elkaar$_i$.   [ColN]
          a club [of] tourists   photographs/photographs   each.other

The fact that N_2 can act as the antecedent of the reciprocal pronoun indicates that it can act as the semantic head of the QC. Note that the agreement on the verb shows that N_2 need not be the syntactic head of the construction; this is the case if N_1 is a quantifier noun, as in (35a), but not in the other cases.

4.1.1.2.3.   The quantificational and referential interpretation of N_1

In the preceding discussion it has been claimed several times that N_1 can have either a quantificational or a referential interpretation. In the former case the noun merely indicates a certain amount or quantity and in the latter case it refers to an actual object in the domain of discourse. Only in the latter case can N_1 be a discourse referent, which can be made clear by means of data involving pronominal reference. Consider the examples in (36). In (36a), it is N_1 that satisfies the selection restrictions of the verb *vasthouden* 'to hold', and it must therefore refer to an actual object in the domain of discourse. Consequently, the QC contains two referential

expressions, and, as is shown in (36b&c), pronouns can be used to refer back to either of these expressions: *het* 'it' in (36b) refers back to the neuter noun *glas* 'glass' and *ze* in (36c) refers back to the feminine substance noun *melk* 'milk'.

(36) a.   Jan houdt   een glas$_i$ melk$_j$ vast.
            Jan holds   a glass [of] milk prt.
      b.   Het$_i$ is mooi   versierd.
            it   is beautifully decorated
      c.   Ze$_j$ is zuur.
            it   is sour

In (37a), on the other hand, N$_1$ has a quantificational reading, and (37b) shows that in this case using the pronoun *het* to refer back to the QC gives rise to a semantically anomalous result; only the pronoun *ze* 'she', corresponding to the N$_2$ *melk* 'milk', can be used to refer to the QC, as in (37c). This indicates that N$_1$ is here not referential but purely quantificational.

(37) a.   Jan drinkt   een glas$_i$ melk$_j$.
            Jan drinks a glass [of] milk
      b. $^{\$}Het_i$ is mooi   versierd.
            it   is beautifully decorated
      c.   Ze$_j$ is zuur.
            it   is sour

4.1.1.2.4. Summary

This section has shown that there are different types of QCs, depending on which noun acts as the syntactic or the semantic head of the construction. The noun that triggers agreement on the finite verb or on a demonstrative is the syntactic head of the construction, whereas the noun that satisfies the selection restrictions imposed by the main verb is the semantic head. The results are summarized in Table 1, although it must be noted that this table provides an idealized picture of the actual facts since we have seen earlier that various N$_1$s seem to be shifting in the direction of the quantifier noun.

Table 1: Types of binominal quantificational construction

	QN		MN		ConN		PartN		ColN	
	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2
syntactic head	—	+	+	+	+	—	+	—	+	—
semantic head	—	+	+	+	+	+	+	+	+	+

Table 1 suggests that there are three types of N$_1$. The first type is comprises the quantifier nouns, which are purely quantificational and require that N$_2$ be both the syntactic and the semantic head of the QC. The second type are the container, collective and part nouns: they are always referential and may function both as the syntactic and the semantic head of the QC; the descriptive content of these nouns can, however, be backgrounded in favor of a more quantification reading, and in that case N$_2$ will be construed as the semantic head of the QC. The third type

includes only the measure nouns. These seem to be of a somewhat hybrid nature in the sense that they can have either a purely quantificational or a referential, package unit reading (with the former probably being the unmarked case): in the former case the measure noun behaves like a quantifier noun and in the latter like a container, collective or part noun. In the next section, we will see that these distinctions correspond nicely to the morphological and syntactic behavior of these nouns.

4.1.1.3. Properties of N_1

In Section 4.1.1.2 we distinguished the three types of N_1s listed in (38), and in this section we will investigate the properties of these types. We will show that N_1s of type (38a) are deficient in several respects, whereas N_1s of type (38b) behave like regular nouns. N_1s of type (38c) show mixed behavior: in some contexts they exhibit deficient behavior, whereas in other contexts they behave just like regular nouns.

(38)　　• Types of N_1s:
　　a.　purely quantificational: quantifier nouns
　　b.　referential: container, part and collective nouns
　　c.　mixed: measure nouns

4.1.1.3.1.　*Morphological properties*

This section discusses the morphological properties of the different types of N_1. We will first discuss their ability to undergo pluralization and diminutivization, and then their ability to enter into the process of nominal compounding.

I. Pluralization

The primeless examples in (39) show that all N_1s can be preceded by the indefinite determiner *een* 'a'. This suggests that we are dealing with count nouns, and we therefore expect pluralization to be possible. The primed examples show that this is indeed possible with most N_1s, but that the quantifier noun in (39a′) resists the formation of a plural. Furthermore, (39b′) shows that the plural marking on the measure noun *liter* is optional.

(39)	a.	een boel mensen	a′.	*vier boel(en) mensen	[QN]
		a lot [of] people		four lot(s) [of] people	
	b.	een liter melk	b′.	twee liter(s) melk	[MN]
		a liter [of] milk		two liter(s) [of] milk	
	c.	een emmer peren	c′.	vier emmers peren	[ConN]
		a bucket [of] pears		four buckets [of] pears	
	d.	een reep chocolade	d′.	vier repen chocolade	[PartN]
		a bar [of] chocolate		four bars [of] chocolate	
	e.	een groep studenten	e′.	vier groepen studenten	[ColN]
		a group [of] students		four groups [of] students	

The general pattern in (39) is compatible with the classification in (38): quantifier nouns lack a plural form, whereas the referential nouns do allow plural formation. And, as expected, the measure nouns show mixed behavior: they may or may not take

the plural suffix depending on whether they have a quantificational or a referential, package unit reading. Still, there are a number of complications that we will discuss in the following subsections.

A. Ambiguous N₁s

Some nouns are ambiguous between a purely quantificational reading and a referential reading, and it will not come as a surprise that these can enter the constructions in two forms. The examples in (40) illustrate this for the collective noun *paar* 'pair'. Example (40a) represents the—probably unmarked—quantificational reading: the QC refers to a quantity of eight shoes/books that consists of four sets of two shoes, which may or may not form a pair. Example (40b), of course, also refers to eight shoes, but now it is implied that the shoes make up four pairs; the markedness of (40b′) is due to the fact that books normally do not come in pairs.

(40) a. vier paar   schoenen/boeken
          four pairs [of] shoes/books
      b. vier paren   schoenen
          four pairs [of] shoes
      b′. ??vier paren   boeken
          four pairs [of] books

For completeness' sake, note that whereas the QC in (40a) refers to exactly eight shoes/books, the QC *een paar schoenen/boeken* may refer to any small number of books; the cardinality can be equal or larger than 2.

B. Measure nouns involved in linear measurement

Measure nouns like *liter* in (39b′) are ambiguous between a purely quantificational and a referential reading. On the quantificational reading the measure noun takes the singular form and the QC in (39b′) simply refers to a certain quantity of milk without any implication about the packaging units of the milk; on the referential, package unit reading the measure noun takes the plural form and the QC refers to two separate units of milk of one liter each. In some cases, however, the referential reading seems to be blocked: this is illustrated in (41) for measure nouns involved in linear measurement.

(41) a. Er   viel   twee meter sneeuw.
          there fell_{sg} two meter [of] snow
      b. *?Er   vielen twee meters sneeuw.
          there fell_{pl} two meters [of] snow

The infelicity of (41b) is probably due to the fact that the noun phrase *twee meter sneeuw* does not refer to a fixed quantity of snow given that the quantity depends on the surface area that we are talking about: the noun phrase *twee meter* is related to the height of the snow, but the length and width of the area covered with snow is left open. When the N₂ is such that only one dimension is considered relevant, the use of the measure phrase will give rise to an interpretation involving a certain, more or less fixed, quantity of a substance, and consequently the result improves greatly. This is illustrated in (42): whereas (42a) leaves open the question of how

many pieces of rope we are dealing with, the noun phrase in (42b) refers to five pieces of rope of 1 meter each.

(42) a. Er   was vijf meter   touw over.
         there was five meter [of] rope left
     b. ?Er   waren vijf meters   touw over.
         there were five meters [of] rope left

The examples in (43) show that pluralization of measure nouns does not necessarily give rise to a referential, package unit interpretation: this is only the case when the measure noun is preceded by a numeral; when a numeral is lacking and the measure noun is given accent, a purely quantificational, in this case "high quantity", reading is again possible. That the constructions in (43) are purely quantificational is also clear from the fact that the QCs trigger singular agreement on the verb. Observe that on the intended reading, the properties of N_2 do not affect acceptability: in contrast to (41b), example (43b) is fully acceptable.

(43) a. Hij dronk LITERS   melk.
         he   drank$_{sg.}$ liters [of] milk
         'He drank many liters of milk.'
     b. Er   viel METERS   sneeuw.
         there fell$_{sg.}$ meters [of] snow
         'there fell many meters of snow'
     c. Er   lag   METERS   touw.
         there lay$_{sg.}$ meters [of] rope
         'Many meters of rope were lying there.'

The "high quantity" reading is also available with container nouns like *emmer* 'bucket'. However, since example (44a) shows that a QC with this reading triggers plural agreement, it is clear that the container noun must still be considered a regular, referential noun. The part nouns and collective nouns do not allow this "high quantity" reading, which is indicated in (44b&c) by means of a number sign. This difference between the container nouns, on the one hand, and the part and collective nouns, on the other, again suggests that the division between quantificational and referential nouns is not sharp, but gradual.

(44) a. Er stonden EMMERS   peren.
         there stood buckets [of] pears
         'There stood many buckets of pears.'
     b. #Er lagen REPEN   chocola.
         there lay bars [of] chocolate
     c. #Er   liepen GROEPEN   studenten.
         there walked groups [of] students

Finally, note that, unlike cardinal numerals, individuating quantifiers like *enkele* 'some' and *vele* 'many' always trigger the plural suffix on the measure noun. The agreement on the verb can be singular, just as with the numerals in (41). This is shown in (45).

(45) a. Hij dronk enkele/vele liters/*liter   bier.
          he   drank some/many liters/liter [of] beer
     b. Er   viel/$^{*?}$vielen enkele meters   sneeuw.
          there fell$_{sg/pl}$ some meters [of] snow
          'there fell many meters of snow'

C. Nouns involved in the measurement of time

Measure nouns involved in measuring time must be plural when preceded by a
numeral, as shown by (46a). Nevertheless, we are dealing with a purely quantifi-
cational construction here: the QC does not refer to five separate units of vacation
of a week each — in fact, there is no implication whatsoever about the temporal
units involved.

(46) a. We hebben vijf weken/*week vakantie per jaar.
          we   have   five week$_{pl/sg}$ [of] vacation per year
     b. Vijf weken vakantie per jaar   is/$^{??}$zijn eigenlijk te weinig.
          five weeks [of] vacation per year is/are   actually   too little

It is not clear to us whether the QC *vijf weken vakantie* should be treated on a par
with QCs like *twee liter melk*. Apart from the difference in plural marking, the two
constructions differ in that in the former the N$_2$ *vakantie* can be replaced by the
adjective *vrij* 'free/off' without any clear difference in meaning, whereas adjectives
can never be combined with a measure noun like *liter*. This fact suggests that we are
dealing with a °second order predicate in example (46b). This would also account
for the fact that the binominal construction in (46b) triggers singular agreement on
the verb despite the fact that N$_1$ is plural: the verb always exhibits singular
agreement when we are dealing with second order predication.

(47)   Vijf weken vrij per jaar is eigenlijk te weinig.
          five weeks off   per year is actually   too little

II. Diminutive formation

The three types of N$_1$s also differ with respect to diminutive formation. The
examples in (48c-d) show that the referential nouns allow it, whereas (48a) shows
that quantifier nouns do not. As expected, the measure nouns again show mixed
behavior: diminutivization is possible when they are interpreted referentially, but
not when they are interpreted quantificationally. That the diminutive is derived from
the referential and not the quantificational measure noun is clear from the fact
illustrated by (48b′) that they must be pluralized when preceded by a cardinal
numeral.

(48) a. *een boel**tje** mensen   [QN]
          a lot$_{dim}$ [of] people
     b. een liter**tje** melk   b′. twee liter**tjes**/*liter**tje** melk   [MN]
          a liter$_{dim}$ [of] milk   two liters$_{dim}$/liter$_{dim}$ [of] milk
     c. een emmer**tje** peren   c′. twee emmer**tjes** peren   [ConN]
          a bucket$_{dim}$ [of] pears   two buckets$_{dim}$ [of] pears

d.	een reep**je** chocolade	d′.	twee reep**jes** chocolade	[PartN]
	a bar_{dim} [of] chocolate		two bars_{dim} [of] chocolate	
e.	een groep**je** studenten	e′.	twee groep**jes** studenten	[ColN]
	a group_{dim} [of] students		two groups_{dim} [of] students	

Note that *een beetje* 'a bit' in *een beetje water* 'a bit of water' is only an apparent counterexample to the claim that quantificational N_1s do not undergo diminutivization: *een beetje* is a lexicalized formation, which is clear from the fact that it does not have a counterpart without the diminutive suffix: **een beet water*. The plural form ^{??}*twee beetjes water* also seems degraded (although a number of rather forced cases can be found on the internet).

III. Nominal compounds

The data discussed in Subsections I and II show that it is necessary to make a distinction between purely quantificational and referential N_1s. Only the latter allow pluralization and diminutive formation. This distinction seems supported by data involving compounding. The denotation of a nominal compound is mainly determined by its second member, which can be considered the head of the compound; the first member only has the function of further specifying the denotation of the second one; cf. Section 1.4. This is clear from the fact that a *tafelaansteker* 'table lighter' is a kind of lighter, not a kind of table. Given this, we predict that only referential nouns can appear as the head/second member of a compound.

The examples in (49) show that this prediction is indeed correct. The first prediction is that the container, part, and collective nouns can appear as the head of a compound, and the acceptability of (49c-e) shows that this is indeed the case, although we must note that *perenemmer* is a possible, but non-attested word. The second prediction is that the quantifier nouns cannot occur as the head of a compound given that they do not have a denotation, and (49a) shows that this is again the case. A problem is that we expect the measure nouns to exhibit mixed behavior, whereas they actually pattern with the quantifier nouns. This suggests that the referential reading of measure nouns is rather marked, and only arises under strong pressure from the context.

(49)	a.	*mensenboel	[QN]
		people-lot	
	b.	*melkliter	[MN]
		milk-liter	
	c.	perenemmer	[ConN]
		pears-bucket	
	d.	chocoladereep	[PartN]
		chocolate-bar	
	e.	studentengroep	[ColN]
		students-group	

Note that the quantificational force of the container, part, and collective nouns has completely disappeared in the compounds in (49c-e). This also holds for nouns that are normally used as quantifier nouns. For example, in a compound like *beestenboel*

'pig-sty', the head of the compound is not the quantifier noun *boel* but a noun denoting collections of things that need not necessarily belong together. Similarly, the meaning of the second member of compounds like *studentenaantal* 'number of students' is not related to the quantificational interpretation of *aantal,* but to its referential interpretation; cf. the discussion of example (4).

IV. Conclusion

The findings in Subsections I to III, summarized in Table 2, have shown that we must make a distinction between N_1s that are purely quantificational and N_1s that are more referential in nature. Quantifier nouns belong to the first kind; container, part and collective nouns all belong to the second type; and measure nouns are ambiguous between the first and the second type.

Table 2: Morphological properties of N_1s

	QUANTIFICATIONAL	MIXED	REFERENTIAL		
	QN	MN	CONN	PARTN	COLN
PLURAL	—	+/—	+	+	+
DIMINUTIVE	—	+/—	+	+	+
COMPOUNDING	—	+/—	+	+	+
REFERENTIAL	—	+/—	+	+	+

The pattern in Table 2 corresponds nicely with our findings in Table 1: that quantifier nouns are purely quantificational is in accordance with the fact that they cannot trigger agreement on the finite verb or a demonstrative; that measure nouns are ambiguous between a purely quantificational and a referential, package unit reading is in accordance with the fact that either they or N_2 may trigger agreement; that container, part and collective nouns are referential is consistent with the fact that they block agreement between N_2 and the finite verb or the demonstrative. The fact that all N_1s have some quantificational force is consistent with the fact that in all cases, N_2 can be interpreted as the semantic head of the construction.

4.1.1.3.2. Syntactic properties: determiners and prenominal modifiers

Section 4.1.1.3.1 has shown that the classification in (38) into quantificational, referential and hybrid N_1s is reflected by the morphological behavior of these nouns. This section will show that the classification is also reflected by their syntactic properties, especially in the type of determiners and (quantificational) modifiers they may have; the purely quantificational nouns are more restricted in this respect than the referential ones. For example, given that a definite article is used to identify a specific entity that is part of the denotation of the noun, we expect that they can only combine with referential nouns, which have such a denotation, and not with purely quantificational nouns, which lack such a denotation.

I. Articles

Example (50) illustrates again that all N_1s can be preceded by the indefinite article *een*. When we are dealing with a quantifier noun, however, the definite article cannot be substituted for the indefinite one. With measure nouns this is possible,

although this results in the loss of the purely quantificational reading: *het ons kaas* refers to a certain piece or quantity of cheese that can be identified by the addressee. The remaining types of N₁s can all be preceded by both the definite and the indefinite article. Observe that it is N₁ that agrees in gender and number with the article: the N₂s in (50) would all select the article *de*, not *het*; cf. the discussion of example (16) in Section 4.1.1.2.1.

(50) • Indefinite/definite articles

a.	een boel studenten a lot [of] students	a′.	*de boel studenten the lot [of] students	[QN]
b.	een ons kaas an ounce [of] cheese	b′.	het ons kaas the ounce [of] cheese	[MN]
c.	een kistje sigaren a box$_{dim.}$ [of] cigars	c′.	het kistje sigaren the box$_{dim.}$ [of] cigars	[ConN]
d.	een stuk zeep a piece [of] soap	d′.	het stuk zeep the piece [of] soap	[PartN]
e.	een groep**je** studenten a group$_{dim}$ [of] students	e′.	het groepje studenten the group$_{dim}$ [of] students	[ColN]

It must be noted, however, that many noun phrases that normally do not allow a definite article can be preceded by it when they are modified: a proper noun like *Amsterdam*, for example, normally cannot be preceded by the definite article, but when it is modified by, e.g., a relative clause the definite article is licensed: *het Amsterdam *(dat ik zo goed ken)* 'the Amsterdam that I know so well'. The examples in (51) show that quantifier nouns exhibit ambiguous behavior in this respect: some, like *boel* in (51a), do not allow the definite determiner in these modified contexts either, while others, like *paar* 'couple of' or *stoot* 'lot of' in (51b), are compatible with the determiner in such contexts.

(51) a. *de boel studenten   (die ik ken)
            the lot [of] students that I   know
      b. de paar/stoot boeken   *(die ik heb   gelezen)
            the couple/lot [of] books   that I   have read

Note, however, that the determiner in (51b) is probably not part of the noun phrase headed by N₁, but of the noun phrase headed by N₂. A reason to assume this is that the noun *paar* is neuter (at least in its use as a collective noun), and should therefore select the definite determiner *het*, not *de* as is the case in (51b): *het/*de paar schoenen* 'the pair of shoes'. This suggests that the construction in (51b) is similar to the quantified constructions in (52), where the article is undisputedly selected by the noun.

(52) a. de vijfentwintig boeken ??(die ik gisteren   heb   besteld)
            the twenty-five books   that I   yesterday have ordered
      b. de vele boeken   ??(die ik heb   gelezen)
            the many books   that I   have read

The fact that quantifier nouns normally cannot be preceded by a definite article may cast some doubt on the assumption that the element *een* in constructions with

quantifier nouns is a "true" article. The idea that we are dealing with a spurious article should not be dismissed given that there are many contexts in which *een* clearly does not function as an article; cf. Section 4.2.1 for another example. For instance, *een* can also be used in examples like (53) with a plural noun, where it seems to function as a modifier with an "approximative" meaning. It is tempting to relate this use of *een* to that in *een boel mensen* in (50a).

(53)   een vijfentwintig studenten
          a   twenty-five   students
          'approximately/about twenty-five students'

That we are dealing with a "spurious article" when the noun is purely quantificational can be indirectly supported by the fact illustrated in (54a) that German *ein* is not morphologically marked for case when it precedes a quantifier noun, as it would normally be when it is part of a referential noun phrase; cf. (54b), where the noun *Paar* is referential and the article *ein* has the dative ending *-em*.

(54) a. mit   ein paar   kühlen Tropfen   [QN]
          with a   couple [of] cool   drops
      b. mit   einem Paar   schwarzen Schuhen   [ColN]
          with a_{dat} pair [of] black shoes

Another reason to assume that the element *een* in *een boel mensen* differs from the other occurrences of *een* in (50) is that it cannot be replaced by its negative counterpart *geen* 'no'. This is illustrated in (55); note especially the difference between (55a) and (55e), which form a minimal pair (provided we abstract away from the agreement on the finite verb).

(55) a. *Er   staan helemaal geen boel studenten op straat.   [QN]
           there stands PRT   no lot [of] students   in the.street
      b. Ik heb helemaal geen ons kaas   gezien.   [MN]
          I   have PRT   no ounce [of] cheese seen
      c. Ik heb   helemaal geen kistje sigaren gestolen.   [ConN]
          I   have PRT   no box [of] cigars   stolen
          'I didn't steel any box of cigars'
      d. Ik heb helemaal geen stuk zeep   gepakt.   [PartN]
          I   have PRT   no piece [of] soap taken
          'I have not taken any piece of soap.'
      e. Er   staat helemaal geen groep studenten op straat.   [ColN]
          there stands PRT   no group [of] students in the.street
          'There is no group of students in the street.'

The data in this subsection suggest that quantifier nouns cannot be preceded by an article. In (50a), the element *een* is a spurious indefinite article, which is possibly related to the modifier *een* in examples like (53). The other types of N_1 occur both with the indefinite and the definite article.

II. Demonstrative pronouns

Demonstrative pronouns exhibit a pattern similar to the definite article. Example (56a) shows that a quantifier noun like *boel* never occurs with a demonstrative pronoun, whereas other quantifier nouns, like *paar* in (56b), are more readily acceptable with demonstrative pronouns (especially the proximate ones). Note that it is not necessary to modify the QC in (56b), which may be due to the fact that the demonstratives themselves function as modifiers in the sense that they imply some partitioning of the set denoted by N_2; cf. Section 5.2.3.

(56) a. *Deze/Die   boel boeken   (die ik gelezen heb) liggen daar.
          these/those lot [of] books that I read have   lie   there
     b. Die/$^?$Deze   paar euro's   (die hij me gaf) maken geen verschil.
          those/these couple [of] euros that he me gave make   no difference
          'those few euros he gave me make no difference.'

Recall from Section 4.1.1.2.1 that the demonstratives in (56b) do not agree in gender and number with N_1 but with N_2. This can be readily illustrated by means of the minimal pair in (57). In (57a), the QC refers to two shoes that form a pair: the neuter noun *paar* is therefore referential and the demonstrative agrees with it. In (57b), the QC refers to a set of two or more shoes: the neuter noun *paar* is therefore purely quantificational and the demonstrative agrees with N_2.

(57) a. dit/dat paar   schoenen   [ColN]
          this/that pair [of] shoes
     b. deze/die   paar   schoenen   [QN]
          these/those couple [of] shoes

     Section 4.1.1.2.1 has already shown that QCs containing a measure noun exhibit the same ambiguity as *paar*, albeit that the construction in which the demonstrative agrees with N_2 is considered marked by some speakers. The relevant examples are repeated in (58a&b).

(58) a. dit/dat$_{[+neuter,+sg]}$ pond$_{[+neuter]}$ uien
          this/that   pound [of] onions
     b. $^{\%}$deze/die$_{[-neuter,-sg]}$ pond   uien$_{[-neuter,-sg]}$
          these/those   pound [of] onions

     The examples in (59) show that the remaining types of N_1s can freely occur with demonstrative pronouns. The demonstrative pronouns in (59) must agree with N_1; replacing them by *deze/die* leads to ungrammaticality.

(59) a. dit/dat$_{[+neuter]}$ kistje$_{[+neuter]}$ sigaren
          this/that   box$_{dim}$ [of] cigars
     b. dit/dat$_{[+neuter]}$ stuk$_{[+neuter]}$ zeep
          this/that   piece [of] soap
     c. dit/dat$_{[+neuter]}$ groepje$_{[+neuter]}$ studenten
          this/that   group$_{dim}$ [of] students

     The examples in this section have shown that demonstrative pronouns can only appear with a subset of the quantifier nouns; when possible, the demonstrative

agrees in gender and number with N_2. Container, part and collective nouns can readily be combined with demonstrative pronouns, and agree with them in number and gender. Measure nouns, again, show a more hybrid behavior.

III. Possessive pronouns

Example (60a) shows that possessive pronouns always seem to give rise to a degraded result with quantifier nouns, regardless of whether a modifier is present or not. The use of a possessor is at least marginally possible with a measure noun like *pond* in (60b): the measure noun must receive a referential interpretation in this case. Possessive pronouns are readily possible with the referential nouns in (60c-e).

(60) a. *mijn paar boeken   (die ik gelezen heb)
            my   couple [of] books   that I read have
     b. ?Hier ligt mijn pond kaas,   en   daar   het jouwe.
           here   lies my pound of cheese and there yours
     c. mijn kistje sigaren
           my box$_{dim}$ [of] cigars
     d. mijn stuk zeep
           my piece [of] soap
     e. zijn groepje studenten
           his group$_{dim}$ [of] students

IV. Quantifiers and cardinal numerals

The examples in (61) show that a quantifier noun like *boel* 'lot of' cannot be preceded by a quantifier or numeral. The ungrammaticality of (61a) is not surprising given that the quantifiers *sommige* 'some'/*alle* 'all' and the numeral *vier* 'four' require a plural noun, whereas the quantifier noun cannot be pluralized; cf. (39). That appealing to this fact is not sufficient to account for the ungrammaticality of (61a) is clear from the ungrammaticality of (61b): the distributive quantifier *elk* 'each' requires a singular noun.

(61) a. *sommige/alle/vier boel(en)   schoenen
           some/all/four   lot(s) [of] shoes
     b. *elke boel   schoenen
           each lot [of] shoes

The ungrammaticality of the examples in (61) must therefore be related to the quantificational function of the quantifier nouns. This can be done by appealing to the fact, which will be discussed extensively in Chapter 6, that quantifiers and numerals operate on sets; given that quantifier nouns do not denote sets, the quantifier/numeral cannot perform its function. Note that the quantifier/numeral cannot operate on N_2 either since that is precisely the function of the quantifier noun: it is never possible to have two quantifiers or numerals that take °scope over the same noun phrase.

    The examples in (62) show that container, part and collective nouns freely co-occur with quantifiers. It must be noted, however, that these nouns have lost their quantificational property in the sense that in these cases the QCs refer to concrete cups, pieces and flocks.

(62) a. sommige/alle/vier koppen koffie a′. elke kop   koffie
         some/all/four   cups [of] coffee   each cup [of] coffee
     b. sommige/alle/vier stukken taart   b′. elk   stuk   taart
         some/all/four   pieces [of] cake   each piece [of] cake
     c. sommige/alle/vier kuddes   geiten c′. elke kudde   geiten
         some/all/four   flocks [of] goats   each flock [of] goats

As noted previously, some N1s, like *paar* 'pair', can be used both as a purely quantificational and as a referential noun. Given the observations above, we expect that the addition of a quantifier will have a disambiguating effect. This is indeed borne out given that the examples in (63) can only be given a referential interpretation; these QCs refer to some/all/each of the pairs of shoes in the domain of discourse.

(63) a. sommige/alle paren   schoenen
         some/all   pairs [of] shoes
     b. elk paar   schoenen
         each pair [of] shoes

The examples in (40), repeated here as (64), show that the noun *paar* can also be preceded by a cardinal numeral, in which case the noun may appear either in its singular or in its plural form. In both cases the QC refers to exactly eight shoes, but the examples differ in the implication that the shoes make up four pairs: this is implied by (64b) but not by (64a). It is tempting to account for this difference by claiming that the noun *paar* is purely quantificational in (64a) and referential in (64b). However, if this is indeed the case, we must conclude that there is no general ban on using a cardinal numeral with purely quantificational nouns.

(64) a. vier paar   schoenen
         four pair [of] shoes
     b. vier paren   schoenen
         four pairs [of] shoes

Example (65) shows that measure nouns can be preceded by a quantifier. The use of an existential/universal quantifier, which triggers the package unit reading, gives rise to a slightly marked result. The distributive quantifier *elk* does not trigger this reading and gives rise to a perfectly acceptable result.

(65) a. ?sommige/alle liters   melk
         some/all   liters [of] milk
     b. elke liter   melk
         each liter [of] milk

Most measure nouns preceded by a numeral can appear either in singular or plural form; see Section 4.1.1.3.1, sub I, for some exceptions. In the latter case, the quantifier noun is clearly used as a referential noun with a package unit reading: (66b) refers to four discrete quantities of milk of one liter each; in (66a), on the other hand, it refers to one quantity of milk, further specified as a quantity of four liters. This supports the suggestion above (64) that there is no general ban on using cardinal numerals with purely quantificational nouns.

(66) a.   vier liter   melk
           four liter [of] milk
     b.   vier liters   melk
           four liters [of] milk

For completeness' sake, observe that some N_1s are lexically restricted in the sense that they can only be used when a cardinal numeral is present. An example is given in (67). The N_1 *man* must appear in its singular form.

(67)   vier man/*mannen personeel
          four man/men [of] personnel
          'a staff consisting of four members'

V. Attributive adjectives

On the basis of what we have seen so far, we may expect modification of N_1 by means of an attributive modifier to be impossible in the case of purely quantificational nouns; attributive modifiers are used to restrict the set denoted by the modified noun, but purely quantificational nouns do not denote any such set. As shown in (68a), this expectation is indeed borne out. The remaining examples in (68) show that modification of the other N_1s is possible.

(68) a. *een klein   paar   fouten   [QN]
          a   small   couple [of] mistakes
     b.   een kleine kilo   kaas   [MN]
          a   small kilo [of]   cheese
          'nearly a kilo cheese'
     c.   een groot glas   bier   [ConN]
          a   big   glass [of] beer
     d.   een groot stuk   kaas   [PartN]
          a   big   piece [of] cheese
     e.   een grote groep   studenten   [ColN]
          a   big   group [of] students

There are, however, various restrictions on the use of the attributive adjectives in constructions of this type. When we are dealing with a measure noun like *kilo*, the adjective modifying N_1 must be one of the following sorts: it can be quantificational, as *veel* in (69a), have an adverbial meaning indicating approximation, such as *klein* in (69b), or have a "partitive" meaning, such as *half* and *heel* in (69c).

(69) a.   Er   stroomden vele liters   wijn.
          there streamed   many liters [of] wine
          'Many liters of wine were served.'
     b.   een kleine liter   wijn
          a small liter [of] wine
          'nearly a liter of wine'
     c.   een halve/hele liter   wijn
          a half/whole liter [of] wine

Container, part and collective nouns exhibit similar restrictions: the examples in (70) to (72) show that quantificational, size and "partitive" adjectives are possible, whereas adjectives denoting other properties give rise to marked results.

(70) a. talrijke glazen bier
          numerous glasses [of] beer

      a′. $^{??}$een versierd glas bier
           a decorated glass [of] beer

      b. een grote kist sinaasappelen
          a big box [of] oranges

      b′. $^{??}$een houten kist sinaasappelen
           a wooden box [of] oranges

(71) a. een halve reep chocola
          a half bar [of] chocolate

      a′. $^{?}$een gestolen reep chocola
           a stolen bar [of] chocolate

      b. een klein stuk krijt
          a small piece [of] chalk

      b′. $^{?}$een gebroken stuk krijt
           a broken piece [of] chalk

(72) a. vele groepen studenten
          many groups [of] students

      a′. $^{?}$een verspreide groep studenten
           a dispersed group [of] students

      b. een enorme vlucht kraanvogels
          an enormous flight [of] cranes

      b′. $^{?}$een opgeschrikte vlucht kraanvogels
           a frightened flight [of] cranes

Recall from Section 4.1.1.2.2, sub II, that an attributive adjective preceding N_1 can be used to modify N_2. Thus, all types of attributive adjectives may precede these N_1s provided that they can be construed with N_2: an example like *een smakelijk glas bier* 'a tasty glass of beer' is acceptable with the attributive adjective expressing a property of the N_2 *bier* 'beer'. An interesting case, about which we have little to say, is *geef me een nieuw glas bier* 'give me a new glass of beer': in this example the adjective *nieuw* 'new' is construed with N_1, but it does not attribute a property to the glass in question; it is rather interpreted as "another glass of beer".

VI. Summary

Table 3, which summarizes the findings of this section, shows that quantifier nouns can entertain far fewer syntagmatic relations than container, part and collective nouns. The latter can be preceded by all sorts of determiners, quantifiers and numerals, and do not exhibit special restrictions concerning attributive modification. The former, on the other hand, exhibit all kinds of restrictions: the element *een* preceding quantifier nouns may not be an indefinite article but must be something else, and definite determiners, quantifiers, numerals, possessive pronouns, and attributive modifiers do not occur at all; demonstrative pronouns may appear with some but not all quantifier nouns. Measure nouns again show a more mixed behavior: the notation —/+ indicates that the element in question can be used when the noun has a referential, but not when it has a quantificational interpretation. The findings in Table 3 are consistent with the classification given in (38), which groups the five noun types into the three supercategories in the top row.

Table 3: Determiners and quantificational modifiers of N_1

| | QUANTIFICATIONAL | MIXED | REFERENTIAL | | |
	QN	MN	CONN	PARTN	COLN
indefinite article	—	+	+	+	+
definite article	—	—/+	+	+	+
demonstrative	—/+	—/+	+	+	+
possessive	—	—/+	+	+	+
quantifier	—	—/+	+	+	+
cardinal numeral	—	+	+	+	+
attributive modifier	—	+	+	+	+

VII. A note on recursive QCs

A final piece of evidence in favor of the classification in (38) comes from recursive QCs, that is, QCs that embed some other QC. The examples given so far always contain two nouns, but it is possible to have more complex cases in which a QC is embedded in a larger QC, which results in sequences of three or more nouns. Given the fact that the second part of a QC must denote a set, it is predicted that the embedded QC cannot be purely quantificational. The examples in (73) suggest that this expectation is indeed borne out. In these examples, N_1 is a quantifier noun and it can be followed by any QC as long as the N_1 of this QC is not a quantifier noun itself.

(73) a. *een hoop aantal   mensen
        a lot [of] number [of] people
    b. een aantal   kilo/kilo's   kaas
        a number [of] kilo/kilos [of] cheese
    c. een aantal   dozen   lucifers
        a number [of] boxes [of] matches
    d. een aantal   repen   chocola
        a number [of] bars [of]   chocolate
    e. een aantal   groepen   studenten
        a number [of] groups [of] students

    A problem for the claim that quantifier nouns cannot be used as the N_1 of an embedded QC is that the measure noun *kilo* in (73b) may appear either in its singular or in its plural form; since we argued above that the measure noun is purely quantification in the former case, it seems that QCs headed by a purely quantificational N_1 can be embedded within a larger QC after all. However, an alternative analysis seems possible. Consider the examples in (74a&b). We have seen that these examples differ in that (74a) simply refers to four kilos of cheese without any implication concerning the package units, whereas (74b) implies that we are dealing with four separate package units of one kilo each. This suggests that the structures of the two examples differ as indicated in the primed examples: in (74a) the numeral *vier* can be considered part of a complex quantifier *vier kilo*, whereas in (74b) it modifies the QC *kilo's kaas*.

(74) a. vier kilo   kaas   b. vier kilo's   kaas
   four kilo [of] cheese   four kilos [of] cheese
  a′. [[vier kilo] kaas]   b′. [vier [kilo's kaas]]

It seems that a similar analysis can be given to the examples in (73b), repeated below as (75): in (75a), the complex quantifier *een aantal kilo* functions as N$_1$ with *kaas* functioning as N$_2$; in (75b), on the other hand, *aantal* functions as N$_1$ and *kilo's kaas* is an embedded QC.

(75) a. een aantal   kilo   kaas   b. een aantal   kilo's   kaas
   a number [of] kilo [of] cheese   a number [of] kilos [of] cheese
  a′. [[een aantal kilo] kaas]   b′. [een aantal [kilo's kaas]]

Independent evidence in favor of the analyses in the primed examples can be found in the examples in (76), which involve °quantitative *er*. The contrast between the examples can be accounted for by the fact that the elided part corresponds to a single constituent in (76b), but not in (76a).

(76) a. $^{??}$Jan heeft [[vier kilo]   [kaas]] en ik heb er [vijf [*e*]].
    Jan has   four kilo [of] cheese and I   have ER five
  b. Jan heeft [vier [kilo's   kaas]] en ik heb er [vijf [*e*]].
    Jan has   four kilos [of] cheese and I   have ER five

The other examples in (73) are ambiguous in the same way. We will show this for container nouns. Consider the examples in (77). In (77a) the QC just indicates an amount of sugar, and we are therefore dealing with a complex quantifier *vier/een paar zakken* 'four/a couple of bags', as indicated in (77a′). In (77b), on the other hand, we are dealing with a number of bags that contain sugar, and the phrase *zakken suiker* is therefore a QC embedded in a larger QC, as indicated in (77b′).

(77) a. Er   zitten vier/een paar   zakken suiker   in de marmelade.
   there sits   four/a couple [of] sacks [of] sugar in the marmalade
   'The marmalade contains four/a couple of bags of sugar.'
  a′. [[vier/een paar zakken] suiker]
  b. Er   staan vier/een paar   zakken suiker   op tafel.
   there stand four/a couple [of] bags [of] sugar on the.table
   'Four/a couple of bags of sugar stand on the table.'
  b′. [vier/een paar [zakken suiker]]

From this we can conclude that (73b) does not provide evidence against the claim that QCs headed by a purely quantificational N$_1$ cannot be embedded within a larger QC. The apparent counterexample *een aantal kilo suiker* can be analyzed as involving a complex quantifier and therefore need not be considered a recursive QC. Note that the fact that (73a) does not allow an interpretation involving a complex quantifier is consistent with the fact that quantifier nouns cannot be preceded by a numeral either: **vier hoop/hopen mensen* '*four lots of people'.

  In (78) we give examples of recursive QCs, in which N$_1$ is a measure noun. We find the same contrast as in (73): whereas container, part and collective nouns can be used as the N$_1$ of an embedded QC, quantifier nouns cannot. The sign "$"

indicates that the examples in (73c&e) are weird due to our knowledge of the world: boxes of matches normally do not come in units of a kilo, and it is not common to add up collections of entities until they have a certain weight. The main difference between the examples in (73) and (78) concerns the measure nouns: a measure noun cannot be followed by another measure noun in the singular. This supports our earlier claim that a QC headed by a purely quantificational N_1 cannot be embedded in a larger QC: the unacceptability of (78b) is due to the fact that there is no complex quantifier *een kilo ons*. Example (78b′), on the other hand, seems acceptable despite being marked due to the fact that it is difficult to conceptualize and the intended meaning can be more readily expressed by means of the phrase *tien onsjes kaas* 'the ounces of cheese'.

(78) a. *een kilo   hoop   kaas
              a   kilo [of] lot [of]   cheese
        b. *een kilo   ons   kaas
              a   kilo [of] ounce [of] cheese
        b′. ?een kilo   onsjes   kaas
              a   kilo [of] ounces [of] cheese
        c. $een kilo   doosjes   lucifers
              a   kilo [of] boxes [of] matches
        d. een   kilo   plakjes   kaas
              a   kilo [of] slices [of] cheese
        e. $een kilo   kolonies   mieren
              a   kilo [of] colonies [of] ants

    In (79) to (81), we give similar examples for container, part and collective nouns. The examples in (79) show that container nouns behave just like measure nouns. Example (79e) may again be weird for reasons concerning our knowledge of the world, but seems otherwise completely well-formed.

(79) a. *een doos   hoop   kaas
              a   box [of]   lot [of]   cheese
        b. *een doos   kilo   kaas
              a   box [of]   kilo [of]   cheese
        b′. ?een doos   kilo's   kaas
              a   box [of]   kilos [of] cheese
        c. een   doos   pakjes   lucifers
              a   box [of]   boxes [of] matches
        d. een   schaal   plakjes   kaas
              a   dish [of]   slices [of] cheese
        e. $een vrachtwagen kolonies   mieren
              a   truck [of]   colonies [of] ants

The part nouns in (80) cannot readily be used as the N_1 of a recursive QC. This is, of course, due to the fact that they can only be followed by a non-count noun while the referential N_1s heading the embedded QCs are count nouns.

(80) a. *een stuk   aantal   chocola
      a   piece [of] number [of] chocolate
    b. *een stuk   kilo   chocola
      a   piece [of] kilo [of] chocolate
    b′. *een stuk   kilo's   chocola
      a   piece [of] kilos [of] chocolate
    c. *een stuk   doos   chocola
      a   piece [of] box [of] chocolate
    d. *?een stuk   reep   chocola
      a   piece [of] bar [of] chocolate
    e. *een stuk   groep   eenden
      a   piece [of] group [of] ducks

The examples in (81) show that the collective nouns behave just like the measure and container nouns.

(81) a. *een verzameling boel   thee
      a   collection [of] lot [of] tea
    b. *een verzameling ons   thee
      a   collection [of] ounce [of] tea
    b′. een verzameling onsjes   thee
      a   collection [of] ounces [of] tea
    c. een verzameling zakjes   suiker
      a   collection [of] bags [of] sugar
    d. een verzameling repen   chocola
      a   collection [of] bars [of] chocolate
    e. een verzameling series   postzegels
      a   collection [of] series [of] stamps

4.1.1.3.3. *Some semantic properties*

This section discusses some of the semantic properties of the different types of N_1s, focusing on their quantificational meaning. We will see that quantifier nouns are quite similar to cardinal numerals in various respects.

I. The quantificational force of N_1s

In the previous sections it has repeatedly been claimed that all N_1s are quantificational in the sense that they indicate a certain amount or quantity of the denotation of N_2. In this respect, they behave like cardinal numerals or quantifying adjectives like *veel* 'many/much'. As is shown in (82), the latter elements can be questioned by means of the *wh*-word *hoeveel* 'how many/much'. If N_1s indeed have quantifier-like properties comparable to cardinal numerals or quantifying adjectives, we expect them to yield felicitous answers to the question in (82a) as well. Example (82b′) shows that this indeed holds for quantifier nouns.

(82) a. Hoeveel boeken heb je gelezen?
         how.many books have you read
     b. drie/veel
         three/many
     b′. een boel/paar
         a lot/couple

In (83), it is shown that the same thing holds for the measure noun *liter* 'liter' and the container noun *glas* 'glass'. Note that the N_1s can undergo pluralization and diminutivization, and can be preceded by a cardinal numeral. This clearly shows that we are dealing with referential nouns.

(83) a. Hoeveel bier   heb je gedronken?
         how.much beer have you drunk
         'How much beer did you drink?'
     b. Een/één liter/litertje.   b′. Een/één glas/glaasje.
         a/one   liter/liter$_{dim}$ a/one   glass/glass$_{dim}$
     c. Twee liter/$^?$liters/litertjes. c′. twee glazen/glaasjes.
         two liter/liters/liters$_{dim}$ two   glasses/glasses$_{dim}$

Similarly, part and collective nouns in (84) and (85) can be used as answers to questions involving *hoeveel*, although there seems to be an additional restriction: when the part noun *plak* 'slice' or the collective noun *groep* 'group' is preceded by the indefinite article *een* 'a', as in (84b) and (85b), the size of the slice/group must be indicated by means of diminutivization or addition of an attributive adjective like *dik* 'big' or *groot* 'big'; this is not needed when these nouns are preceded by a numeral, as in (84c) and (85c).

(84) a. Hoeveel cake heb je gegeten?
         how.much cake have you eaten
         'How much cake did you eat?'
     b. Een plakje/$^{*?}$(dikke) plak.
         a   slice$_{dim.}$/big   slice
     c. Eén plak/twee plakken.
         one slice/two   slices

(85) a. Hoeveel toeristen heb je rondgeleid?
         how.many tourists have you prt.-guided
     b. een groepje/$^{??}$(grote) groep
         a   group$_{dim}$/big   group
     c. Eén groep/twee groepen.
         one group/two groups

II. Weak versus strong quantification constructions

QCs can be either °weak or strong noun phrases. On the weak reading, exemplified in the primeless examples in (86), these noun phrases get a nonspecific indefinite interpretation, that is, they simply refer to a set of new discourse entities. On the strong reading, exemplified in the primed examples, these noun phrases get a partitive interpretation, that is, they refer to a subset of a larger set of entities

already given in the domain of discourse. The primed and primeless examples in (86a&d) show that whereas the indefinite article is always possible on the weak reading of QCs, it sometimes gives rise to a degraded result on the strong reading.

(86) a. Er zijn een aantal   studenten verdwenen.   [QN]
        there are a number [of] students   disappeared
        'A number of students have disappeared.'

    a′. Een aantal   studenten zijn verdwenen.
        a number [of] students   are disappeared
        'A number of the students have disappeared.'

    b. Er   is twee kilo   vlees verdwenen.   [MN]
        there is two kilo [of] meat disappeared
        'Two kilo of meat has disappeared.'

    b′. Twee kilo   vlees is verdwenen.
        two kilo [of] meat is disappeared
        'Two kilo of the meat has disappeared.'

    c. Er   zijn twee stukken/dozen   chocola   verdwenen.   [PartN/ConN]
        there are two pieces/boxes [of] chocolate disappeared
        'Two pieces/boxes of chocolate have disappeared.'

    c′. Twee stukken/dozen   chocola   zijn verdwenen.
        two pieces/boxes [of] chocolate are disappeared
        'Two pieces/boxes of the chocolate have disappeared.'

    d. Er   is één/een kudde   schapen geslacht.   [ColN]
        there is one/a flock [of] sheep   slaughtered
        'A flock of sheep has been slaughtered.'

    d′. Eén/*Een kudde schapen is geslacht.
        one/a flock [of]   sheep   is slaughtered
        'One flock of the sheep has been slaughtered.'

III. Definite and indefinite N_1s

All N_1s indicate a certain amount or quantity. The difference between quantifier nouns and the other types of N_1s is that quantifier nouns indicate an indefinite amount or quantity, whereas the other types indicate an often conventionally or contextually determined definite amount or quantity. The difference is brought out clearly in constructions with the preposition *per* 'per'. This preposition can be followed by a cardinal numeral like *vier* 'four' but not by a quantifier like *veel* 'many/much', which indicates some indefinite amount or quantity.

(87) a. per vier
          per four
    b. *per veel
          per many/much

The examples in (88) show that the same difference can be found between quantifier nouns like *boel* and *hoop*, which indicate an indefinite amount of quantities, and the other N_1s, which indicate a (conventionally or contextually determined) amount or quantity.

(88) a. *per boel/hoop   d. per plak
          per lot/lot   per slice
      b. per kilo   e. per dozijn
          per kilo   per dozen
      c. per kop
          per cup

The result is often marked when *per* is followed by a plural noun, although acceptability may vary depending on the context and on the ease of conceptualization; an example like (89c) gives rise to a perfectly acceptable result in the following example found on the internet: *Deze speculaas weegt ca. 125 gram per plak en wordt per twee plakken verkocht* 'This spiced biscuit weighs about 125 grams and is sold in sets of two pieces'. The fact that (89a) is fully acceptable with the singular form of *kilo* shows that a phrase like *twee kilo* does not function as a plural noun phrase; it simply refers to a definite quantity. The marked status of the plural form *kilo's* shows that the noun phrase *twee kilo's* 'two kilos' is plural: it refers to two discrete entities of one kilo each.

(89) a.   per twee kilo/*kilo's   c. ??per twee plakken
           per two kilo$_{sg/pl}$ per two slices
      b. ??per twee koppen   d. *?per twee koppels
           per two cups   per two couples

4.1.1.3.4. Some similarities between N$_1$s and cardinal numerals

Section 4.1.1.3.3 has shown that N$_1$s and cardinal numerals share a number of semantic properties. Therefore, it seems useful to compare the two types of element in other respects as well. This section shows that they both license so-called °quantitative *er* and exhibit similar behavior under modification and coordination.

I. Quantitative er

If N$_1$s are quantificational, they may be expected to co-occur with °quantitative *er*. The primeless examples in (90) show, however, that this expectation is borne out for the quantifier and the measure nouns only. Note that the measure noun in (90b) must be followed by the sequence *of + numeral*, which is probably due to the fact that this makes the quantifier less definite. Given the requirement that the phonetically empty noun is [+COUNT], it does not come as a surprise that measure nouns like *liter* give rise to a degraded result due to the fact that they normally combine with non-count N$_2$s. Given that part nouns also combine with non-count N$_2$s, we might in principle give a similar account for the unacceptability of (90d), but the unacceptability of (90c&e) shows that there is more involved than simply a count/non-count distinction: the ungrammaticality of (90c-e) is clearly related to the referential status of the N$_1$s.

(90) a.   Ik heb   er   nog [een paar/boel [*e*]].   [QN]
           I   have ER   still a couple/lot
           'I have still got a couple of them.'

b. Ik heb   er nog [een kilo *(of twee) [*e*]].   [MN]
    I   have ER still a kilo   or two
    'I have still got about two kilos of it.'

b'. *Ik heb   er nog [een liter *(of twee) [*e*]].
    I   have ER still a liter   or two

c. *Ik heb   er nog [een doos   (of twee) [*e*]].   [ConN]
    I   have ER still a box   or two

d. *Ik heb   er nog [een reep (of twee) [*e*]].   [PartN]
    I   have ER still a bar or two

e. *Ik heb   er nog [een kudde (of twee) [*e*]].   [ColN]
    I   have ER still a herd   or two

Note that the intended contentions of the ungrammatical examples can be expressed
by means of the examples in (91), in which N_2 is simply left implicit. This is
impossible with quantifier nouns like *paar*, which is typically preceded by the
unstressed indefinite article *een* 'a'; the noun *paar* in (90a) can only be interpreted
as a collective noun, which is typically preceded by a numeral in this context.

(91) a. Ik heb   nog één/*?een paar.   [QN]
          I   have still one/a couple

      b. Ik heb   nog twee liter(s).   [MN]
          I   have still two liter

      c. Ik heb   nog twee dozen.   [ConN]
          I   have still two boxes

      d. Ik heb   nog twee repen.   [PartN]
          I   have still two bars

      e. Ik heb   nog twee kuddes.   [ColN]
          I   have still two herds

Example (92a) shows that QCs headed by the quantifier noun *aantal* may
trigger either singular or plural agreement on the finite verb (cf. Section 4.1.1.2.1),
and the same thing is shown for the measure noun *kilo* in (92b). The primed
counterparts with quantitative *er*, on the other hand, are compatible with plural
agreement only, which shows that in these constructions the verb agrees with the
phonetically empty N_2 that we postulated for these constructions. We added
example (92c) to show that in constructions without quantitative *er* agreement is
always triggered by N_1.

(92) a.   Daar lopen/loopt nog een aantal studenten.
           there walk$_{pl/sg}$ still a couple [of] students

      a'. Daar lopen/*loopt er nog [een aantal [*e*]].
           there walk$_{pl/sg}$ ER still a couple

      b.   Daar liggen/ligt nog een kilo of twee appels.
           there lie$_{pl/sg}$ still a kilo or two [of] apples

      b'. Daar liggen/*ligt er nog [een kilo of twee [*e*]].
           there lie$_{pl/sg}$ ER still a kilo or two

      c.   Daar ligt/*liggen nog een kilo of twee.
           there lie$_{pl/sg}$ still a kilo or two

The primed examples in (93) show that N_1 differs from N_2 in that it cannot be replaced by a nominal gap licensed by quantitative *er*: this holds both for the quantifier noun *aantal* in (93a′), and for referential nouns like the part noun *stuk* 'piece' in (93b′). The two types of N_1 exhibit divergent behavior when it comes to replacing the phrase $N_1 + N_2$: the doubly-primed examples show that this is readily possible when N_1 is a referential noun but not when it is a quantifier noun. This different behavior need not be related to the semantic distinction between the two classes, but may simply be due to the fact that the quantifier noun *aantal* cannot be preceded by a numeral/weak quantifier; the indefinite article *een* 'a' does not license quantitative *er*.

(93) a.　Ik heb nog een aantal　　mededelingen.
　　　　　I   have yet a number [of] announcements
　　a′. *Ik heb er nog [een [*e*] mededelingen].
　　a″. *Ik heb er nog [een [*e*]].
　　b.　Ik heb nog twee stukken　chocolade.
　　　　　I   have still two pieces [of] chocolate
　　b′. *Ik heb er nog [twee [*e*] chocola].
　　b″. Ik heb er nog [twee [*e*]].

II. Modification

Cardinal numerals can be modified by variety of modifiers; cf. Section 6.1.1.4. In this subsection, we will be concerned with the modifiers in (94): the modifier *minstens* 'at least' in (94a) indicates that the cardinal number provides a lower bound, whereas *hoogstens* 'at most' in (94b) indicates that it provides an upper bound. The modifiers in (94c) have an approximate meaning. The primed examples show that these modifiers cannot be used with quantifiers like *veel* 'many' or *weinig* 'few'.

(94) a.　minstens tien glazen　　　　　　a′. *minstens veel glazen
　　　　　at.least ten glasses　　　　　　　　at.least many glasses
　　b.　hoogstens tien glazen　　　　　　b′. *hoogstens veel glazen
　　　　　at.most three glasses　　　　　　　　at.most many glasses
　　c.　bijna/ongeveer/precies tien glazen　c′. *bijna/ongeveer/precies veel glazen
　　　　　nearly/about/precisely ten glasses　　nearly/about/precisely many glasses

The examples in (95) show that most N_1s can be preceded by the modifiers in (94). The only exception are the quantifier nouns, which is not surprising given that they indicate an indefinite amount/quantity, just like the quantifier *veel* in the primed examples in (94); cf. Section 4.1.1.3.3, sub III. The examples in (95e&e′) show that modification of collective nouns is only possible when the collection consists of a default number of entities; when this is not the case (as with a flock or a group), the resulting construction is unacceptable.

(95) a.　*minstens/hoogstens/bijna/ongeveer/precies een boel/paar　　studenten
　　　　　at.least/at.most/nearly/about/precisely　　　a lot couple [of] students
　　b.　minstens/hoogstens/bijna/ongeveer/precies een kilo　　　　vuurwerk
　　　　　at.least/at.most/nearly/about/precisely　　　a kilo [of]　　　fireworks

c.	minstens/hoogstens/bijna/ongeveer/precies	een emmer	appels
	at.least/at.most/nearly/about/precisely	a bucket [of]	apples
d.	minstens/hoogstens/bijna/ongeveer/precies	een plak	koek
	at.least/at.most/nearly/about/precisely	a slice [of]	cake
e.	minstens/hoogstens/bijna/ongeveer/precies	een team	voetballers
	at.least/at.most/nearly/about/precisely	a team [of]	footballers
e′.	*minstens/hoogstens/bijna/ongeveer/precies	een kudde	schapen
	at.least/at.most/nearly/about/precisely	a flock [of]	sheep

The fact that the modifiers in (95) cannot immediately precede N_1, but must precede *een*, suggests that it is the full phrase *een N_1* that acts as a quantifier. This will be clear from the fact that in examples like (96a) the modifier must be adjacent to the modified numeral. Finally, it can be noted that in cases in which N_1 is preceded by a numeral, it is the numeral and not N_1 that is modified. This accounts for the fact that, in contrast to (95e′), (96b) is acceptable.

(96) a.   <*bijna> de <bijna>   tien studenten
         nearly the   ten students
    b.   minstens/hoogstens/bijna/ongeveer/precies tien kuddes   schapen
        at.least/at.most/nearly/about/precisely   ten flocks [of] sheep

III. Scope and coordination

The examples in (97) show that cardinal numerals and quantifiers may take scope over nominal phrases of different sizes: in the primeless examples, their scope is restricted to one conjunct, whereas in the primed examples they may have both conjuncts in their scope.

(97) a.   [[vier mannen] en   [vier vrouwen]]
          four men   and four/many women
    a′. [vier [mannen en vrouwen]]
        four men and women
    b.   [[veel mannen] en   [veel vrouwen]]
          four men   and four/many women
    b′. [veel [mannen en vrouwen]]
        many men and women

The examples differ in the scope of the attributive modifier/numeral: in the primeless examples the numeral/quantifier has scope only over the noun immediately following it, whereas in the primed examples it has scope over both nouns. This difference is clearest with the numeral *vier* 'four' in the (a)-examples: (97a) refers to a set of people with cardinality 8, whereas the phrase in (97b′) refers to a set of people with cardinality 4. The difference is less clear with the quantifier *veel* 'may' in the (b)-examples, due to the fact that (97b) implies (97b′). However, the same does not hold in the other direction: in a situation with 90 women and 4 men, (97b′) might be appropriate whereas (97b) is not.

    The quantifier noun *hoop* has the same property as the quantifier *veel*: whereas (98a) implies (98b), the implication does not hold the other way round. This shows

that in (98b) the quantifier noun must also be assumed to take scope over the conjoined phrase *dieven en inbrekers*.

(98) a. [[een hoop dieven] en   [een hoop inbrekers]]
          a lot [of] thieves   and a lot [of] burglars
      b. [een hoop [dieven en inbrekers]]
          a lot [of] thieves and burglars

    Measure nouns, on the other hand, act like cardinal numerals: the full noun phrase in (99a) refers to a total quantity of two kilos of potatoes and vegetables, whereas in (99a′) it refers to a total amount of just one kilo. More or less the same thing holds for the container noun *glas* 'glass' in (99b&b′): (99b) refers to two glasses, one filled with gin and one with tonic, whereas (99b′) refers to a single glass filled with a mixture of gin and tonic. The collective nouns also behave in this way, but this will go unillustrated here. Example (99c) show, finally, that part nouns like *stuk* 'piece' cannot take scope over both conjuncts: this is due to the fact that QC with these nouns must refer to a "homogeneous" entity.

(99) a. [[een kilo aardappelen] en   [een kilo groente]]
           a kilo [of] potatoes   and a kilo [of] vegetables
     a′. [een kilo [aardappelen en groente]]
           a kilo [of] potatoes and vegetables
      b. [[een glas [gin]] en   [een glas [tonic]]]
           a glass [of] gin and a glass [of] tonic
     b′. [een glas [gin en tonic]]
           a glass [of] gin and tonic
      c. een stuk koek   en *(een stuk)   chocola
          a piece [of] biscuit and a piece [of] chocolate

IV. Conclusion

This section has compared the three types of N_1s with numerals and quantifiers. Quantifier nouns have been shown to pattern with quantifiers. Container, part and collective nouns, on the other hand, rather pattern with cardinal numerals, notwithstanding the fact that the latter, but not the former, license quantitative *er*. Measure nouns again exhibit ambiguous behavior.

4.1.1.4. The projection of N_2

This section discusses the projection headed by N_2. It will be argued that this projection is not a DP, but a phrase that is somewhat smaller.

I. Determiners

One reason to assume that the phrase headed by N_2 is not a DP is that it can never be preceded by an article, a demonstrative or a possessive pronoun. This is shown in (100) both for count and for non-count nouns. By way of contrast, the primed examples give the corresponding partitive constructions, in which the projection of N_2 does act as a full DP; see Section 4.1.1.6 for a discussion of this construction.

(100) a. *een boel   de/die/mijn   boeken   [count noun]
        a lot [of]   the/those/my books
    a′.   een boel   van de/die/mijn   boeken
        a lot   of   the/those/my books
    b. *een glas   de/deze/zijn cognac   [non-count noun]
        a glass [of] the/this/his   cognac
    b′.   een glas van de/deze/je   cognac
        a glass   of   the/this/your cognac

One might suggest that the ungrammaticality of the primeless examples is due to the fact that the determiners make the projection headed by N_2 definite. It must be noted, however, that an indefinite article cannot be used either, as is shown by (101a); compare this QC with the partitive construction in (101b), in which the indefinite article must be expressed.

(101) a.   Ik   kreeg van Peter een glas   (*een) uitgelezen cognac.
        I   got   from Peter a glass [of]   an   exquisite cognac
    b.   Ik   kreeg van Peter een glas van *(een) uitgelezen cognac.
        I   got   from Peter a glass of   an   exquisite cognac

II. Proper nouns and pronouns

Another reason for assuming that N_2 does not head a DP is that substituting a pronoun for the projection of N_2 yields an unacceptable result. The ungrammaticality of (102a&b) is not conclusive since we are dealing with definite pronouns. Example (102c) shows, however, that existential quantifiers are excluded as well. By way of comparison, the primed examples give the corresponding partitive constructions; note that *van het/ze* 'of it/them' is not possible, but this is due to the general rule that replaces the inanimate pronouns *het/ze* 'it/them' with the °R-pronoun *er* in this syntactic context.

(102) a. *een fles   het   a′. een fles ervan
        a bottle [of] it   a bottle of.it
    b. *een doos   ze   b′. een doos ervan
        a box [of] them   a box   of.it
    c. *een fles   iets (lekkers)   c′. een fles van iets (lekkers)
        a bottle [of] something tasty   a bottle of   something tasty

III. Complementation and modification

Although the examples above support the idea that N_2 does not head a DP, we cannot conclude that N_2 is a bare noun. This is clear from the fact that it may take an argument, as is shown for the relational noun *vriendjes* 'friends' in (103a). Further, N_2 can be modified by all sorts of modifiers: an attributive adjective in (103b), an appositive phrase in (103c), an °adjunct PP in (103d), and a restrictive relative clause in (103e).

(103) a.   een hoop vriendjes van Jan
          a lot [of] friends of Jan
    b.   een liter   warme melk
          a liter [of] warm milk
    c.   een glas   melk direct van de koe
          a glass [of] milk   straight from the cow
    d.   een stuk   appeltaart met slagroom
          a piece [of] apple.pie   with cream
    e.   een groep   studenten die demonstreren
          a group [of] students   who demonstrate

For completeness' sake, note that N_2 can be modified by an adjective in the positive or the comparative form but not an adjective in the superlative form. This might be due to the fact that noun phrases containing a superlative are definite: *de/*een aardigste student* 'the/a kindest student'. Finally, note that a pseudo-superlative like *alleraardigste* could be used, but these do not necessarily trigger a definite interpretation.

(104) a.   een groep   aardige studenten
          a group [of] nice   students
    b.   een groep   (nog) aardigere studenten
          a group [of] even nicer   students
    c. *een groep   aardigste studenten
          a group [of] nicest   students

IV. Numerals and quantifiers

Cardinal numerals and quantifiers cannot precede N_2. This, however, has no bearing on what the size of the projection of N_2 is, given that a plausible explanation for the impossibility of (105) can be found in the fact that they are in the scope of the N_1, which also has quantifying force; cf. **veel vijf studenten* 'many five students'.

(105)   *een paar   vijf/veel   studenten
         a couple [of] five/many students

V. Initial coordination

The claim that N_2 heads a projection that is somewhat smaller than a DP can also be supported by evidence involving initial coordination, that is, coordination by means of discontinuous coordinators like *of ... of ...* 'either ... or ...' and *zowel ... als ...* 'both ... and ...'. In the primeless examples in (106) the two conjuncts each include an article so we may safely conclude that we are dealing with full DPs, and we see that the result of initial coordination is fine; in the primed examples, on the other hand, we are dealing with the smaller phrases *oude mannen* 'old men' and *oude vrouwen* 'old women', and the result of initial coordination is unacceptable.

(106) a.   of   de oude mannen of de oude vrouwen
          either   the old men   or the old women
    a′. *de of oude mannen of oude vrouwen

    b.   zowel de oude mannen als   de oude vrouwen
         both   the old men   and the old women
    b′. *de zowel [oude mannen] als [oude vrouwen]

When N_2s head a phrase that is smaller than a full noun phrase, we predict that initial coordination of phrases headed by such nouns is impossible. As is shown in the primed examples in (107) for quantifier and collective nouns by means of *zowel ... als ...*, this expectation is indeed borne out. Note that it is not coordination itself that causes the ungrammaticality, since the primeless examples with the conjunction *en* 'and' are fully acceptable.

(107) a.   een paar   oude mannen en oude vrouwen
          a couple [of] old man and old women
    a′. *een paar   zowel oude mannen als oude vrouwen
          a couple [of] both old men and old women
    b.   een groep   Engelse jongens en Franse meisjes
          a group [of] English boys and French girls
    b′. *een groep   zowel Engelse jongens als Franse meisjes
          a group [of] both English boys and French girls

VI. Movement

The primeless examples in (108) show that the projection headed by N_2 can never be moved independently from N_1; the noun phrase consisting of N_1 and N_2 cannot be split. The primed examples show that the same thing holds for numerals and quantifiers: Standard Dutch does not allow this so-called split topicalization construction. That the judgments on the primeless and the primed examples are related is clear from the fact that those dialects that do allow the primeless examples also allow the split patterns in the primed examples. We refer the reader to Coppen (1991), Vos (1999), and Van Hoof (2006) for a discussion of split topicalization.

(108) a. *Pinguïns heb   ik [$_{NP}$ een heleboel [*e*]] gezien aan de Zuidpool.
          penguins have I   a lot   seen   at the South.Pole
    a′. *Pinguïns heb   ik [$_{NP}$ drie [*e*]] gezien aan de Zuidpool.
          penguins have I   three   seen   at the South.Pole
    b.   *Bramen   heb   ik [$_{NP}$ drie emmers *e*] geplukt.
          blackberries have I   three buckets   picked
    b′. *Bramen   heb   ik [$_{NP}$ veel [*e*]] geplukt.
          blackberries have I   many   picked

VII. Quantitative er

That the phrase headed by N_2 and the nominal projection following a numeral sometimes exhibit similar behavior is also clear from the fact already discussed in Section 4.1.1.3.4, sub I, that both can be replaced by quantitative *er* when N_1 is a quantifier or measure noun. This again shows that the projection of N_2 is smaller than DP, given that DPs cannot be replaced in this way.

(109) a.　Ik　heb　er　aan de Zuidpool [$_{NP}$ *een heleboel* [*e*]] gezien.
　　　　　I　have　ER　at the South.Pole　a lot　　　　　　　seen
　　　b.　Ik　heb　er　aan de Zuidpool [$_{NP}$ *drie* [*e*]] gezien.
　　　　　I　have　ER　at the South.Pole　three　　seen

4.1.1.5. Modification of quantificational binominal constructions

This section investigates modification of the nouns in a QC. We will discuss attributive adjectives, PP-modifiers and relative clauses.

I. Attributive adjectives

Section 4.1.1.3.2, sub I, has shown that N_1 can only be modified by a limited set of attributive adjectives, namely those with a quantificational meaning or indicating size. In other cases, attributive adjectives preceding N_1 actually modify N_2 (see Section 4.1.1.2.2, sub II, for details), despite the fact that in these cases gender and number agreement is always with N_1, not N_2.

(110) a.　een　lekker/*lekkere glas　　wijn
　　　　　a　　tasty　　　　glass [of]　wine
　　　b.　een　lekker/*lekkere stuk　　kaas
　　　　　a　　tasty　　　　piece [of]　cheese

In (110), the singular neuter noun *glas*/*stuk* requires that the attributive –*e* ending be absent, whereas agreement between the adjective and the non-neuter substance noun N_2 would have required presence of the –*e* ending. This is clear from the fact, illustrated in (111), that the –*e* ending must be present when the adjective follows N_1. This shows, again, that if N_2 functions as the semantic head of the QC, this does not imply that it also functions as the syntactic head.

(111) a.　een glas　　lekkere wijn
　　　　　a glass [of]　tasty wine
　　　b.　een stuk　　lekkere kaas
　　　　　a piece [of]　tasty cheese

The attributive inflection on the adjective *lekker* in (110) is sensitive to the number and definiteness feature of the full binominal phrase; when the singular N_1 is replaced by a plural one, or when the indefinite article *een* is replaced by the definite article *het*, the adjective must have the –*e* ending. This is shown for (110a) in (112): note that we replaced the non-neuter N_2 *wijn* by the neuter N_2 *bier* in order to block interference of the gender feature of this noun.

(112) a.　vier lekkere/*lekker glazen　　bier
　　　　　four tasty　　　　glasses [of]　beer
　　　b.　het lekkere/*lekker glas　　beer
　　　　　the tasty　　　　glass [of] beer

When the adjective immediately precedes N_2, on the other hand, the adjective is not sensitive to the number and definiteness feature of the full binominal phrase. This is shown in (113), where the adjective agrees with the neuter substance noun in all

cases, although it must be noted that, for some speakers, examples (113b&c) are somewhat marked.

(113) a. een glas   lekker/*lekkere bier
         a glass [of] tasty   beer
     b. vier glazen $^?$lekker/*lekkere bier
         four glasses [of]   tasty   beer
     c. het glas $^?$lekker/*lekkere bier
         the glass [of] tasty   beer

Attributive set-denoting adjectives modifying N_2 can only precede N_1 when they are set-denoting, that is, adjectives that normally can also occur as the predicate in a copular construction. Placing an adjective that does not belong to this group in front of N_1 normally gives rise to a degraded result.

(114) a. een groep   Amerikaanse toeristen
         a   group [of] American   tourists
     a′. $^{??}$een Amerikaanse groep toeristen
     b′. een groep   vermeende misdadigers
         a group [of] alleged criminals
     b′. $^{*?}$een vermeende groep misdadigers

Furthermore, the attributively used set-denoting adjectives must denote a property of N_2; in cases like (115), where the adjective has a classifying function instead, the adjective cannot precede N_1 either.

(115) a. $^\#$een wit/rood glas   wijn
         a   white/red glass [of] wine
     a. een glas   witte/rode wijn
         a glass [of] white/red wine
     b. $^\#$een vervalste doos   diamanten
         a   forged box [of] diamonds
     b′. een doos   vervalste diamanten
         a box [of] forged   diamonds

Finally, it should not be possible to construe the attributively used adjective with N_1: in examples like (116a) the construal of the adjective with N_2 is blocked by the fact that it can also express a property of N_1; in order to modify N_2 the adjective must occur after N_1, as in (116b).

(116) a. een grote doos   eieren
         a   big   box [of] eggs
         'a big box with eggs'
     b. een doos   grote eieren
         a   box [of] big   eggs
         'a box with big eggs'

II. Prepositional phrases

Modifying PPs never intervene between N_1 and N_2, regardless of whether it is N_1 or N_2 that is modified. First, consider the examples in (117): the PPs *met een deksel* 'with a lid' and *met statiegeld* 'with deposit money' clearly belong to the container nouns *doos* and *krat* (which is also clear from the fact that N_2 can be dropped), but nevertheless they follow N_2. This fact that the PP cannot be placed between N_1 and N_2 suggests that the PP actually modifies a phrase containing both N_1 and N_2, not just N_1. If this is indeed correct, the structure of these noun phrases is as indicated in the primed examples.

(117) a. een doos (sigaren) met een deksel
          a box [of] cigars   with a lid
      a′. [een [[doos sigaren] met een deksel]]
      b. een krat   (bier) met statiegeld
          a crate [of] beer with deposit
      b′. [een [[krat bier] met statiegeld]]

In the examples in (117), the referential meaning of the N_1s is highlighted at the expense of their quantificational force; (117a), for example, does not refer to a quantity of cigars but simply to a box containing cigars; the construction is more or less synonymous with *een doos met sigaren* 'a box with cigars'. Consequently it is N_1, and not N_2, that acts as the semantic head of the examples in (117). This also clear from the fact that examples like (118), where the verb forces a reading in which N_2 acts as the semantic head of the QC, are semantically anomalous when a PP-modifier of N_1 is present.

(118) a. Jan heeft gisteren een doos sigaren ($^\$$met een deksel) gerookt.
          Jan has yesterday a box [of] cigars with a lid   smoked
      b. Ik heb gisteren   een krat bier   ($^\$$met statiegeld) opgedronken.
          I   have yesterday a crate [of] beer   with deposit   prt.-drunk

Since modification of N_1 by means of a PP suppresses the quantificational meaning of N_1, we expect that purely quantificational nouns cannot be modified by a PP: that this is borne out is clear from the fact that the examples in (119) only allow an interpretation in which *uit die pot/fles* modifies N_2, which is clear from the fact that N_2 cannot be dropped. However, given that we have seen that the PP may also modify the complete QC, one might want to argue that these examples can be ambiguous between the structures in the primed and doubly-primed example; we leave it to future research to discuss whether the examples in (119a&b) are really ambiguous in this way.

(119) a. een aantal   *(bonen) uit die pot
          a number [of]   beans   from that pot
      a′. [een aantal [bonen uit die pot]]
      a″. [een [[aantal bonen] uit die pot]]
      b. een liter $^{??}$(water) uit die fles
          a liter   water   from that bottle
      b′. [een liter [water uit die fles]]
      b″. [een [[liter water] uit die fles]]

Whatever one wants to conclude about the structure of the examples in (119a&b), it seems that the analysis suggested in the doubly-primed examples is not available when N_1 is referential. This can be made clear by the examples in (120). Despite its complexity, example (120a) seems acceptable: the PP *zonder pitten* must be interpreted as a modifier of N_2, and *met een deksel* as a modifier of N_1. Changing the order of the two PPs, as in (120a′), makes the construction completely unacceptable, which would immediately follow if we assume that the PP modifying N_2 is embedded in the noun phrase headed by N_2, as indicated in (120b), but not if we assume that it is external to a phrase containing both N_1 and N_2.

(120) a. een kist   sinaasappelen zonder pitten met een deksel
           a box [of] oranges   without pips with a lid
      a′. *een kistje sinaasappelen met een deksel zonder pitten
      b. [een [[kist [sinaasappelen zonder pitten] met een deksel]]]

III. Relative clauses

Just like PP-modifiers, relative clauses never intervene between N_1 and N_2, regardless of whether it is N_1 or N_2 that is modified. Some examples are given in (121): the relative clauses in these examples can only be construed with the container nouns *doos* and *krat*, which is clear from the fact that N_1 triggers singular agreement on the finite verb of the relative clause, and from the fact that N_2 can be dropped. Nevertheless, the relative clauses must follow N_2. The fact that the relative clause cannot be placed between N_1 and N_2 suggests that it modifies a phrase containing both N_1 and N_2, not just N_1. If this is correct, the structure of these noun phrases is as indicated in the primed examples.

(121) a. een doos (sigaren) die kapot is
           a box [of] cigars   that broken is
      a′. [een [[doos sigaren] die kapot is]]
      b. een krat   (bier) waarop statiegeld   zit
           a crate [of] beer where-on deposit.money sits
           'a crate of beer on which deposit money must be paid'
      b′. [een [[krat bier] waarop statiegeld zit]]

In (121), the referential meaning of the N_1s is highlighted at the expense of their quantificational force. This accounts for the fact that examples like (122), where the verb forces a reading in which N_2 acts as the semantic head, are semantically anomalous when the relative clause is present.

(122) a. Jan heeft gisteren een doos sigaren ($^\$$die kapot is)   gerookt.
           Jan has yesterday a box [of] cigars   that broken is smoked
      b. Jan heeft net   een krat bier   ($^\$$waarop statiegeld zit)   opgedronken.
           Jan has   just a crate [of] beer where-on deposit.money sits prt.-drunk

Since modification of N_1 by a relative clause suppresses the quantificational meaning of N_1, it is expected that purely quantificational nouns cannot be modified: that this is indeed correct is shown by the fact that the examples in (123) only allow an interpretation in which the relative clause modifies N_2. This is clear not only from the semantic interpretation, but also from the fact illustrated in (123a) that it is

N_2 that triggers number agreement on the finite verb in the relative clause, and from the fact illustrated in (123b) that it is N_2 that triggers gender agreement on the relative pronoun. Note that example (123b) with the relative pronoun *die* improves when the indefinite article is replaced by the definite article *de*, which is of course due to the fact that N_1 is then construed as a referring expression.

(123) a. een boel_{sg} bonen_{pl} die verrot zijn_{pl}/*is_{sg}
          a lot [of] beans   that rotten are/is
     b. een liter_{[-neuter]} water_{[+neuter]} dat_{[+neuter]}/*die_{[-neuter]} gemorst is
          a liter [of]   water   that   spilled is

Given that the relative clause may in principle modify the complete QC, one might want to claim that the examples in (123) are ambiguous, and can be associated with either the structures in the primeless or the structures in the primed examples in (124).

(124) a.   [een boel [bonen die verrot zijn]]
     a′. [een [boel bonen] die verrot zijn]
     b.   [een liter [water dat gemorst is]]
     b′. [een [[liter water] dat gemorst is]]

There is reason to assume that both structures are indeed available. First, recall from Section 4.1.1.3.2, sub I, that purely quantificational N_1s normally cannot be preceded by a definite article, but that this becomes possible when the QC is modified by a relative clause; this is illustrated again in (125).

(125) a. Ik heb   een/*de stoot studenten geïnterviewd.
          I   have a/the lot [of]   students   interviewed
     b. de stoot   studenten die door mij geïnterviewd zijn
          the lot [of] students   that by me   interviewed   are
          'the many students that are interviewed by me'

We also showed in that section that this is a more general phenomenon: proper nouns like *Amsterdam*, which normally do not license a definite article, can be preceded by it when they are modified by a relative clause: cf. *het Amsterdam *(dat ik ken uit mijn jeugd)* 'the Amsterdam *(that I know from my childhood)'. The crucial point is that the definite article is licensed on the antecedent of the relative pronoun, and this suggests that in (125b) it is the full QC that acts as the antecedent of the relative pronoun: the definite article precedes N_1, not N_2. This suggests that the structures in the primed examples in (124) are possible alongside the primeless ones.

 It seems, however, that the primed structures are not available when N_1 is referential. This can be made clear by means of the examples in (126). Despite its complexity, example (126a) seems acceptable: the first relative clause must be construed with the N_2 *sinaasappelen* and the second one with the N_1 *kistje*, which is clear from the fact that they agree with the respective relative pronouns in number/gender. Changing the order of the two relative clauses, as in (126a′), results in ungrammaticality, which would immediately follow if we assume that the relative clause modifying N_2 is embedded in the nominal projection headed by N_2, as indicated in (126b), but not if we assume that it is external to a phrase containing both N_1 and N_2.

(126) a.　$^?$een kistje　　sinaasappels [$_{RC1}$ die verrot zijn] [$_{RC2}$ dat kapot is]
　　　　 a box$_{dim}$ [of] oranges　　　　that rotten are　　　that broken is
　　　 a′. *een kistje sinaasappels [$_{RC2}$ dat kapot is] [$_{RC1}$ die verrot zijn]
　　　 b.　[een [kistje [sinaasappels$_i$ die$_i$ verrot zijn]]$_j$ dat$_j$ kapot is]

　　For completeness' sake, note that the same order restriction seem to hold when the modifiers are respectively a PP and a relative clause. The examples show that the modifier of N$_2$ always precedes the modifier of N$_1$; example (127b′) is of course grammatical but not under the intended reading that the oranges are from Spain.

(127) a.　een kistje sinaasappels [$_{RC}$　die verrot waren] [$_{PP}$ met roestige spijkers]
　　　　　a box$_{dim}$ [of] oranges　　　that rotten were　　　with rusty nails
　　　 a′. *een kist sinaasappels [met roestige spijkers] [die verrot waren]
　　　 b.　een kistje sinaasappels [$_{PP}$　uit Spanje] [$_{RC2}$ dat kapot is]
　　　　　a box$_{dim}$ [of] oranges　　　 from Spain　　　that broken is
　　　 b′. $^\#$een kistje sinaasappels [$_{RC2}$ dat kapot is] [$_{PP}$ uit Spanje]

IV. Conclusion

This section has shown that both N$_1$ and N$_2$ can be modified. When N$_1$ is modified, it seems that the complete QC is in the scope of the modifier. When N$_2$ is modified either the complete QC or the projection of N$_2$ can be in the scope of the modifier, depending on the status of N$_1$: when N$_1$ is purely quantificational, both structures seem available; when it is referential the scope of the modifier seems restricted to the projection of N$_2$.

4.1.1.6. A note on partitive and pseudo-partitive constructions

This section discusses the partitive and pseudo-partitive construction, which are exemplified in (128a) and (128b) respectively. The primed examples show that these constructions occur not only with cardinal numerals but also in the quantificational binominal constructions (QCs) discussed in the previous sections. Although the partitive and pseudo-partitive constructions seem identical at first sight, we will show that they behave quite differently. More specifically we will argue that, as the name already suggests, pseudo-partitive constructions are in fact not partitive constructions; despite appearances, the phrase *van die lekkere koekjes* in the (b)-examples is not a PP but a noun phrase. After a brief general introduction of the constructions in 4.1.1.6.1, which will also make clear why we discuss these constructions in this section on QCs, Section 4.1.1.6.2 will discuss the differences between the two constructions.

(128) a.　Vier　van de koekjes　lagen op tafel.
　　　　　four　of the cookies　lay　 on the.table
　　　 a′. Een paar van de koekjes lagen op tafel.
　　　　　a couple of the cookies　lay　 on the.table
　　　 b.　Ik wil　 graag　vier van die lekkere koekjes.
　　　　　I　 want please four of those tasty cookies
　　　 b′. Ik wil　 graag　een paar　van die lekkere koekjes.
　　　　　I　 want please a couple　of those tasty cookies

It is important to note here that our use of the notion pseudo-partitive construction differs from the one found in the literature, where it is often used to refer to binominal constructions like *een kop koffie* 'a cup of coffee', which were discussed in Section 4.1.1.

4.1.1.6.1. *Partitive and pseudo-partitive constructions*

This section briefly discusses the partitive and the pseudo-partitive construction. We will show that partitive constructions contain a phonetically empty noun preceding the *van*-PP, which implies that examples like (128a′) are in fact concealed QCs. Pseudo-partitive constructions do not contain a phonetically empty noun, but are special in that they contain a noun phrase in the guise of a spurious PP, which implies that (128b′) must also be analyzed as a QC.

I. Partitive constructions

Partitive constructions are noun phrases that refer to a subset of some set presupposed in discourse. They consist of a cardinal numeral or a quantifier expressing the cardinality or size of the subset, followed by a *van*-PP the complement of which denotes the presupposed set. Some examples are given in (129), in which the noun phrase *de koekjes* 'the cookies' refers to the presupposed set. In (129a) the cardinal numeral *vier* indicates that the cardinality of the subset is 4, and in (129b) the quantifier *veel* expresses that the subset is bigger than some implicitly assumed norm. Example (129c) shows that the universal quantifier *alle* 'all' cannot be used, possibly because it conveys redundant information: (129c) refers to the same set as the noun phrase *de/alle studenten* 'the/all students' does. Example (129d) with the distributive quantifier *elk* 'each', on the other hand, is acceptable: here reference is made not to the set as a whole, but to the entities making up this set.

(129) a. vier van de koekjes   c. *alle van de koekjes
      four of the cookies   many of the cookies
    b. veel van de koekjes   d. elk van de koekjes
      all of the cookies   each of the cookies

The partitive construction is syntactically headed by the numeral/quantifier, not by the complement of *van*. This is clear from the fact that the latter does not trigger number agreement on the finite verb; (130) shows that it is the numeral/quantifier that determines agreement (or, rather, the phonetically empty noun following it; cf. the discussion of (134)).

(130) a. Eén van de studenten   is/*zijn   gisteren   vertrokken.
      one of the students   is/are   yesterday   left
      'One of the students has left yesterday.'
    b. Vier van de studenten zijn/*is   gisteren   vertrokken.
      four of the students   are/is   yesterday   left

Given that nouns appearing as N_1s in QCs have quantificational meaning, it does not really come as a surprise that they can also occur in the partitive construction. Example (131) shows, however, that container and collective nouns

(and to a somewhat lesser extent also measure nouns) preceded by the indefinite article *een* 'a' give rise to a degraded result. When these N₁s are preceded by a cardinal numeral, the result is usually acceptable, despite the fact that most speakers interpret the N₁s (with the exception of *twee kilo*) primarily as referential.

(131) a.   een aantal van de jongens
         a number   of the boys

     b. ^{??}een kilo van de appels   b′. twee kilo/[?]kilo's van de appels
         a kilo   of the apples   two kilo/kilos   of the apples

     c. een stuk van de taart   c′. twee stukken van de taart
         a piece   of the cake   two pieces   of the cake

     d. *een doos van de appels   d′. [?]twee dozen van de appels
         a box   of the apples   two boxes   of the apples

     e. *[?]een groep van de studenten   e′. twee groepen van de studenten
         a group   of the students   two groups   of the students

The acceptability of the construction also depends on the nature of the nominal complement of the *van*-PP: when the noun phrase is preceded by a demonstrative pronoun instead of a definite article, the result is fully acceptable, and the primary reading is the quantificational one. This holds both for expressions in which N₁ is preceded by an indefinite article and expressions in which it is preceded by a numeral. This is shown in (132) for all marked examples in (131).

(132) a.   een aantal van deze jongens
         a number   of these boys

     b. een kilo van deze appels   b′. twee kilo/kilo's van deze appels
         a kilo   of these apples   two kilo/kilos   of these apples

     c. een stuk van deze taart   c′. twee stukken van deze taart
         a piece   of this cake   two pieces   of this cake

     d. een doos van deze appels   d′. twee dozen van deze appels
         a box   of these apples   two boxes   of these apples

     e. een groep van deze studenten   e′. twee groepen van deze studenten
         a group   of these students   two groups   of these students

    We have seen in (130) that number agreement on the verb is triggered by the part preceding the *van*-phrase. This also holds for the partitive constructions in (131) and (132) with part, container, and collective nouns. The quantifier and measure nouns behave differently, however: they allow agreement between the verb and the complement of the *van*-PP.

(133) a.   Er   is/zijn een aantal   van de jongens niet aanwezig.
         there walk_{pl} a number_{sg} of the boys   not present
         'A number of the boys are not present.'

     b.   Er   ligt/liggen een kilo van deze appels op tafel.
         there lies/lie   a kilo   of these apples on the.table

     c.   Er   liggen/*ligt twee stukken van de taart op tafel.
         there lie/lies   two pieces of the cake   on the.table

    d.   Er   staat/*staan   een doos van deze appels   op tafel.
        there stands/stand a box   of these apples   on the.table
    e.   Een groep van deze studenten komt/komen hier   kamperen.
        a group of these students   comes/come here camping

The contrast in (133) is identical to the one we have seen in Section 4.1.1.2.1 concerning QCs: in the purely quantificational constructions it is N_2 that triggers agreement with the verb, whereas in the more referential ones it is N_1 that triggers agreement. Given that it is implausible that in (133) agreement on verb is triggered *directly* by the complement of the *van*-PP, it has been suggested that the partitive construction features an empty noun following the numeral/quantifier, which is construed as identical to the complement of the *van*-PP. This implies that the structures of the noun phrases in (130) are given as in (134): since the numeral *één* 'one' must be followed by a singular noun, whereas the numeral *vier* 'four' must be followed by a plural noun, the agreement facts in (130) can be accounted for by assuming that it is the empty noun that triggers agreement on the verb.

(134) a.   [één e_{sg} [van de studenten]]
     b.   [vier e_{pl} [van de studenten]]

This proposal implies that the structures of the noun phrases in (133) are as given in (135): we are dealing with regular QCs in which the phonetically empty noun functions as N_2. The fact that the agreement pattern of the partitive construction in (133) is identical to that of the constructions discussed in Section 4.1.1.2.1 is now derived from the fact that both are quantificational binominal constructions.

(135) a.   [een aantal e_{pl} [van de studenten]]
     b.   [een kilo e_{pl} [van deze appels]]
     c.   [twee stukken e_{sg} [van de taart]]
     d.   [een doos e_{pl} [van deze appels]]
     e.   [een groep e_{pl} [van deze studenten]]

II. Pseudo-partitive constructions

The primeless examples in (136a&b) seem structurally identical to those in (129a&b); the only difference is that the noun phrase complement of *van* is not preceded by the definite article *de* 'the' but by the distal demonstrative *die* 'those'. It therefore will not come as a surprise that these examples may have a partitive reading. What we want to focus on here, however, is that there is a second reading with a meaning that comes close to "four/many cookies of a certain kind that is familiar to the addressee".

(136) a.   vier van die (lekkere) koekjes
        four of   those tasty cookies
        'four of those tasty cookies'/'four tasty cookies (of that sort)'
     b.   veel   van die (lekkere) koekjes
        many of   those tasty cookies
        'many of those tasty cookies'/'many tasty cookies (of that sort)'

The same ambiguity arises in the examples in (137), where the *van*-phrase is preceded by nouns that may appear as N₁s in QCs: all examples in (137) can be interpreted either as a partitive or as a pseudo-partitive construction. In passing note that constructions with the singular, neuter demonstrative *dat* trigger the same ambiguity; cf. the examples in (137b&c).

(137) a.   Ik wil   een paar   van die lekkere koekjes.
           I   want a couple   of those tasty cookies
      b.   Ik wil   twee liter van dat lekkere bier.
           I   want two liter of that nice beer
      c.   Ik wil   een stuk   van dat lekkere gebak.
           I   want a piece   of that nice cake
      d.   Ik wil   een kistje van die geurige sigaren.
           I   want a box$_{\text{dim}}$ of those aromatic cigars
      e.   Ik wil   opnieuw een stelletje van die enthousiaste studenten.
           I   want again   a couple   of those enthusiastic students

The availability of the pseudo-partitive reading is due to the fact that the phrase *van die/dat (A) + N* can be used with the distribution of a DP, that is, despite the fact that it has the appearance of a PP it can be used in positions that are normally occupied by a noun phrase; cf. 5.2.3.2.2, sub V. This is illustrated in (138): in (138a) the *van*-phrase is used as the subject of the clause and in (138b) as the object. These examples also have the connotation that the denotation of the noun is familiar to the addressee, and often have an intensifying meaning comparable to English "these + Adj + N$_{\text{pl}}$".

(138) a.   Er   liggen van die lekkere koekjes op tafel.
           there lie   of those tasty cookies   on the.table
           'There are these tasty cookies lying on the table.'
      b.   Marie geeft altijd   van die   grappige voorbeelden.
           Marie gives always of those funny examples
           'Marie always gives these funny examples.'

Since PPs normally cannot function as subjects, we can conclude that the *van*-PPs in (136) and (137) are actually ambiguous: they may be interpreted either as a PP, which gives rise to the partitive reading, or as a noun phrase, which gives rise to the pseudo-partitive reading. Under this analysis both the partitive and the pseudo-partitive construction (137) are QCs, but they differ in that in the former case N₂ has the form of an empty noun, whereas in the latter case it is a spurious PP that functions as N₂. This is exemplified in (139) for the noun phrase *een paar van die lekkere koekjes* in (137a).

(139) a.   Partitive: [een paar *e* [$_{\text{PP}}$ van die lekkere koekjes]]
      b.   Pseudo-partitive: [een paar [$_{\text{NP}}$ van die lekkere koekjes]]

4.1.1.6.2. Similarities and differences

Partitive and pseudo-partitive constructions may be confused not only because they have the same morphological shape, but also because they share the property that

the selection restrictions of the verb can apparently be satisfied by the noun embedded in the *van*-phrase. This is illustrated by means of example (140a) involving the quantifier noun *aantal* 'number'. Both under the partitive and under the pseudo-partitive reading the plurality requirement imposed by the verb is apparently satisfied by the plural noun *studenten* 'students'. This follows from the analysis proposed in the previous section. The structure associated with the partitive reading is given in (140b): the quantifier noun is followed by an empty noun functioning as N_2 and since the quantifier noun requires this empty noun to be plural, the latter can satisfy the selection restriction of *zich verenigen* 'to unit' in the same way as an overt N_2 in a QC. The structure associated with the pseudo-partitive reading is given in (140b′): we are dealing with a regular QC in which N_2 has the form of a spurious PP, and given that this spurious PP refers to a non-singleton set, the semantic requirement of the verb is satisfied.

(140) a.   Een aantal van die studenten   verenigen   zich.
  a number of those students   unite   REFL
   b.   [Een aantal e_{pl} [$_{PP}$ van die studenten]] verenigen zich.
  Partitive: 'A number of those students (over there) united.'
   b′.   [Een aantal [$_{NP}$ van die studenten]] verenigen zich.
  Pseudo-partitive: 'A number of students (you know the type I mean) united.'

Recall that the part, container and collective nouns always function as the syntactic head of a QC and therefore block agreement between the verb and N_2, so it will not come as a surprise that they cannot enter constructions like (140). We have seen, however, that they do allow N_2 to satisfy certain more semantic selection restrictions that do not have a syntactic reflex: example (141a) shows that the N_2 *spinazie* can satisfy the requirement imposed by the verb *eten* 'to eat' that the direct object be edible. It is furthermore important to note that example (141b) is pragmatically odd due to the fact that it only allows a reading in which both the plate and the spinach have been eaten by Jan; apparently the complement of the PP-adjunct cannot satisfy the selection restriction imposed by the verb.

(141) a.   Jan heeft een bord   spinazie opgegeten.
  Jan has   a plate [of] spinach prt.-eaten
   b. $Jan heeft een bord met spinazie opgegeten.
  Jan has   a plate   with spinach prt.-eaten

Example (142a) shows that, under both the partitive and the pseudo-partitive reading, the selection restriction imposed by *eten* 'to eat' is apparently satisfied by the noun *spinazie* in the *van*-phrase. Again, this follows from the proposed analysis. The structure associated with the partitive reading is given in (142b): the quantifier noun is followed by an empty noun functioning as N_2, which is construed as identical to the complement of the *van*-PP, and since this empty N_2 can satisfy the selection restriction of *eten* in the same way as an overt N_2 in a QC the result is pragmatically felicitous. The structure associated with the pseudo-partitive reading is given in (142b′): we are dealing with a regular QC in which N_2 has the form of a spurious PP, and given that this spurious PP refers to an edible substance, the semantic requirement of the verb is satisfied.

(142) a.   Jan heeft een bord van die heerlijke spinazie opgegeten.
          Jan has   a plate   of that delicious spinach   prt.-eaten
      b.   Jan heeft [een bord [*e*] [$_{PP}$ van die heerlijke spinazie]] opgegeten.
          Partitive: 'Jan ate a plate of that delicious spinach (over there).'
      b′. Jan heeft [een bord [$_{NP}$ van die heerlijke spinazie]] opgegeten.
          Pseudo-partitive: 'Jan ate a plate of that delicious spinach (you know).'

Despite these similarities there are various ways to distinguish the two constructions. We have already seen that we can appeal to the meaning of the complete construction: a partitive construction denotes a subset of a presupposed superset, whereas a pseudo-partitive construction denotes set of entities of a kind familiar to the addressee. In addition, the following subsections will show that we can appeal to a number of more syntactic properties of the two constructions.

I. The preposition van

The analyses of the partitive and pseudo-partitive noun phrases given above imply that the status of *van* differs in the two constructions: in the former it is a regular preposition, whereas in the latter it is a spurious one. To substantiate this claim, we will investigate in more detail constructions in which the spurious *van*-PP is used as an argument of a verb or a preposition, and show that it behaves as a noun phrase.

A. Selection

The spurious *van*-PP can substitute for nominal arguments of verbs, which is shown in the examples in (143), involving the verbs *zitten* 'to sit/to be' and *bakken* 'to bake'. The fact that the spurious *van*-PP functions as the subject in (143) is especially telling: genuine PPs normally cannot have this syntactic function.

(143) a.   Er   zitten nog (van die) vieze koekjes in de trommel.
          there sit   still of those awful cookies in the tin
          'There are still some of those awful cookies in the tin.'
      b.   Hij bakt vaak (van die) vieze koekjes.
          he   bakes often of those awful cookies
          'He often bakes (such) awful cookies.'

Example (144) shows that the spurious *van*-PP can also substitute for the nominal complement of a preposition. Again, this is revealing given that prepositions normally do not take PP-complements.

(144)   Zij loopt altijd   op (van die) afgetrapte schoenen.
          she walks always on of those   worn.out shoes
          'She always walks on worn-out shoes.'

The fact that the spurious *van*-PP has the distribution of a regular noun phrase is consistent with the analysis of the pseudo-partitive construction proposed in the previous subsection, where the *van*-phrase is analyzed as a nominal projection.

B. Extraposition

PP-complements of verbs differ from nominal complements in that they can undergo °PP-over-V. An example is given in (145a). As is shown in (145b),

however, the spurious *van*-PP patterns with the noun phrases in this respect. This again supports the claim that we are actually dealing with a noun phrase.

(145) a. dat Jan vaak <op die trein> wacht <op die trein>.
        that Jan often for that train waits
        'that Jan is often waiting for that train.'
    b. dat Jan vaak <van die vieze koekjes> bakt <*van die vieze koekjes>.
        that Jan often   of those awful cookies bakes
        'that Jan often bakes those awful cookies.'

Occasionally, ambiguity arises between a PP- and an NP-complement reading. PP-over-V can then serve to disambiguate the example: after extraposition of the *van*-phrase only the PP-complement reading survives. This is shown in (146).

(146) a. Jan heeft van dat lekkere brood gegeten.
        Jan has   of that tasty bread   eaten
        PP-complement reading: 'Jan has eaten of that tasty bread (over there).'
        Pseudo-partitive reading: 'Jan has eaten that tasty bread (you know which).'
    b. Jan heeft gegeten van dat lekkere brood.
        Jan has   eaten   of that nice bread
        PP-complement reading only: 'Jan has eaten of that tasty bread (over there).'

Unfortunately, this test cannot be applied directly to the partitive and pseudo-partitive construction, since PP-over-V leads to a bad result in both cases (although it has been claimed that PP-over-V is somewhat better in the case of the partitive reading). This is illustrated in (147).

(147)   Jan heeft een aantal <van die koekjes> opgegeten <*van die koekjes>.
        Jan has   a number   of those cookies   prt.-eaten
        'Jan ate a number of those cookies (you know the kind I mean).'
        'Jan ate a number of cookies.'

C. R-pronominalization

Partitive and pseudo-partitive constructions also differ with respect to °R-pronominalization. The examples in (148) show that the PP-complement *op die trein* 'for that train' from example (145a) can undergo this process, whereas this is not possible with the spurious *van*-PP from example (145b). Example (149) furthermore shows that R-pronominalization can also be used to disambiguate examples like (146). After pronominalization of *dat lekkere brood* only the PP-complement reading survives. These facts again support the suggestion that *van* is not a true preposition in the spurious *van*-PP.

(148) a. dat Jan er   vaak op wacht.
        that Jan there often for waits
        'that Jan is often waiting for it.'
    b. *dat Jan er   vaak van bakt.
        that Jan there often of   bakes

(149)   Hij heeft er van   gegeten.
         he has   there-of eaten
         'He has eaten of it.'

The examples in (150) show that R-pronominalization of the *van*-phrase is possible in the partitive construction, but not in the pseudo-partitive construction: whereas (150a) is ambiguous between the partitive and pseudo-partitive reading, example (150b) only has the partitive reading. This finding is consistent with the analysis proposed in Section 4.1.1.6.1: whereas the *van*-phrase is a genuine PP in the partitive construction, it is a disguised noun phrase in the pseudo-partitive construction.

(150) a.   Hij heeft een boel/vier van die boeken gelezen.
           he has   a lot/four of those books   read
           'He has read four/a lot of those books (over there).'
           'He has read a lot of books (of that kind).'
      b.   Hij heeft er   een boel/vier van gelezen.
           he has   there a lot/four of   read
           'He has read four/a lot of them.'

D. Quantitative er

Section 4.1.1.3.4 has shown that °quantitative *er* can be used to license an empty nominal projection corresponding to N_2 in a QC. If the partitive and the pseudo-partitive readings of example (150a) indeed correlate, respectively, with the interpretation of the *van*-phrase as a genuine PP and a concealed noun phrase, we correctly predict that (151) corresponds to (150a) on the pseudo-partitive reading only: quantitative *er* requires that the empty element *e* be interpreted as a noun phrase.

(151)   Hij heeft er [een boel [*e*]] gelezen.
         he   has   ER a lot   read
         'He has read a lot of them.'

II. The demonstrative die/dat

The previous subsection has shown that the partitive *van*-phrase is headed by a true preposition, whereas the pseudo-partitive *van*-phrase is a disguised noun phrase. Something similar holds for the demonstrative. The examples in (152) and (153) show that whereas the distal demonstrative *die/dat* is part of a larger paradigm in the partitive construction, it cannot be replaced by any other determiner in the pseudo-partitive construction.

(152)   • Partitive construction
      a.   een aantal van deze/die/de/mijn   boeken
           a number of   these/those/the/my books
           'a number of these/those/the/my books'
      b.   een glas   van dit/dat/het/jouw   bier
           a glass   of   this/that/the/your beer
           'a glass of this/that/the/your beer'

(153)   • Pseudo-partitive construction
   a.   een aantal van die/#deze/#de/#mijn boeken
         a number of   those/these/the/my   books
         'a number of books (of that type)'
   b.   een glas   van dat/#dit/#het/#jouw bier
         a glass   of   that/this/the/your   beer
         'a glass of beer (of that type)'

The fact that the examples in (153) can only be interpreted as a pseudo-partitive construction with *die* and *dat* suggests that these distal demonstratives are defective. This can be further supported by the fact that noun phrases containing a distal demonstrative normally can be modified by means of the locational adjunct *daar* 'over there'. As is shown in (154), the presence of this adjunct has a disambiguating effect on potential ambiguous examples; the presence of *daar* blocks the pseudo-partitive reading.

(154) a.   een aantal van die boeken daar
           a number   of   those books over there
           'a number of those books over there'
     b.   een glas van dat bier   daar
           a glass   of   that beer over there
           'a glass of that beer over there'

The prosodic properties of the demonstrative also suggest that we are dealing with a defective form in the pseudo-partitive construction. Demonstratives are typically used in contrastive contexts, and can therefore readily be assigned contrastive accent: *niet DIT maar DAT boek* 'not this but that book'. The demonstrative in the pseudo-partitive construction, however, resists accent: the examples in (155) can only be interpreted as true partitive constructions.

(155) a.   een aantal van DIE boeken
           a number   of   those books
           'a number of THOSE books'
     b.   een glas van DAT bier
           a glass of   that beer
           'a glass of THAT beer'

Finally, (156b) shows that the demonstrative cannot be followed by a numeral or quantifier in the spurious *van*-PP, which suggests that the defective demonstrative is not a regular determiner.

(156) a.   Jan heeft die (drie) lekkere taarten   gebakken.
           Jan has   those three tasty pies   baked
           'Jan baked those (three) tasty pies.'
     b.   Jan heeft van die (*drie) taarten   gebakken.
           Jan has   of those three pies   baked
           'Jan bakes these tasty pies.'

III. Definiteness of the complement of van

Since the partitive construction refers to a subset of a presupposed set, the complement of *van* must be definite. This predicts that the indefinite determiner *zulk(e)* 'such' cannot occur in the partitive construction. As is shown in (157), this prediction is indeed borne out; the noun phrases following *van* only have a type-reading and in that sense resemble the pseudo-partitive reading.

(157) a.   een paar   van   zulke studenten
            a couple   of   such students
     b.   een kilo   van   zulke aardappelen
            a kilo   of   such potatoes
     c.   een glas   van   zulk bier
            a glass   of   such beer
     d.   een stuk   van   zulke kaas
            a piece   of   such cheese
     e.   een school van   zulke vissen
            a shoal   of   such fish

4.1.1.6.3.   Conclusion

This section has discussed the partitive and pseudo-partitive construction. It has been argued in 4.1.1.6.1 that the pseudo-partitive construction is actually a regular QC, albeit that the projection of N_2 is a nominal disguised as a *van die N* phrase with a spurious preposition *van*. The partitive construction, on the other hand, is a noun phrase headed by an empty noun followed by a partitive *van*-PP. Due to the fact that the empty noun may function as the N_1 of a QC, the partitive construction may have the same morphological shape as a pseudo-partitive construction. Section 4.1.1.6.2 therefore discussed some properties of the spurious nominal *van die N* phrase that are helpful in distinguishing the two constructions.

4.1.2. *Non-quantificational constructions:* een soort boek *'a kind of book'*

Example (158) shows that binominal phrases need not be quantificational. These non-quantificational examples typically involve the noun *soort*. As in Section 4.1.1, we will refer to the first noun (*soort*) as N_1, and to the second noun as N_2.

(158) a.   deze/die soort   aap/apen
            this/that species [of]   monkey/monkeys
     b.   dit/dat soort   auto/auto's
            this/that kind [of]   car/cars
     c.   een soort   appel/appels
            a kind [of] apple/apples
            'an apple-like thing/apple-like things'

We will see in this section that the three uses of *soort* in (158) differ in certain respects: in (158a), the noun *soort* is clearly used as a referential expression and the binominal construction refers to a contextually determined species of monkey. This is less clear in the other two uses: example (158b) has a type reading in the sense that it refers to a set of cars that resemble a certain car/certain cars that is/are under

discussion; example (158c) does not refer to an apple/apples but to an entity/entities that resemble an apple in a certain way. That the constructions in (158) differ from the quantificational constructions discussed in Section 4.1.1 is clear from the fact that N_2 may be a singular noun (whereas N_2 in the QC must be a plural or a non-count noun).

The referential noun *soort* in (158a) seems to be part of a larger paradigm that includes more or less synonymous expressions like *type* 'type', *model* 'type/model' and *merk* 'brand'. Schermer-Vermeer (2008) has shown that the use of this construction has been on the rise over the last century, and that a growing set of nouns may enter this construction: examples that occur frequently in the *Corpus Gesproken Nederlands* are *formaat* 'size', *genre* 'type', *kaliber* 'caliber/size', *kleur* 'color', *kwaliteit* 'quality', *maat* 'size', *slag* 'sort', but there are many more incidental cases; some examples involving these nouns are given in (159).

(159) a.   die   kleur   behang
           that   color   wallpaper
     b.   deze kwaliteit stof
           this   quality   fabrics
     c.   deze maat   schoen/schoenen
           this   size   shoe/shoes

In the following subsections, we will focus on the examples with the noun *soort*, and show how the three constructions in (158) differ. Where possible we will show that the examples in (159) behave more or less like the noun *soort* in (158a).

I. Gender (demonstratives)

That we are dealing with three different, but homophonous, nouns in (158) is not only clear from the meaning differences between the three constructions but also from the fact that the nouns have different genders. Consider again the examples in (158a&b): the noun *soort* 'species' in (158a) is non-neuter, which is clear from the fact that it takes the non-neuter demonstratives *deze/die* 'this/that': *deze/die soort aap/apen* 'this/that species of monkey/monkeys'. The noun *soort* 'kind of' in (158b), on the other hand, is neuter, which is clear from the fact that it takes the neuter demonstratives *dit/dat* 'this/that': *dit/dat soort auto/auto's*. It is difficult to determine the gender of the noun *soort* 'N-like entity' in (158c) given that it differs from the other two nouns in not allowing these definite demonstratives at all.

It can further be noted that the non-neuter noun *soort* 'species' imposes gender restrictions on N_2; it can be followed by singular, non-neuter nouns like *aap* 'monkey' but not by singular, neuter nouns like *paard* 'horse'. The neuter noun *soort* 'kind of' does not impose similar restrictions on N_2, which can therefore be both neuter and non-neuter. The third use of *soort* is also compatible with both neuter and non-neuter N_2s.

(160) a. $^{*?}$deze/die$_{[-neuter]}$ soort$_{[-neuter]}$ paard$_{[+neuter]}$
          this/that   species [of] horse
     b.   dit/dat$_{[+neuter]}$ soort$_{[+neuter]}$ hond$_{[-neuter]}$
           this/that   kind [of]   dog

    c.   een soort   paard/hond
          a kind [of] horse/dog
          'a dog/horse-like animal'

Non-neuter N_1s like *kleur* 'color' and *maat* 'size' in the primeless examples in (161) often behave like the non-neuter noun *soort* 'species' in not allowing neuter N_2s. Neuter nouns like *formaat* 'size', *genre* 'type' in the primed examples do not impose a similar restriction on N_2; cf. Schermer-Vermeer (2008). It seems, however, that the status of mixed cases with non-neuter N_1s and neuter N_2s also depends on the choice of N_2: an example like *die kleur hemd* in (161a) is much more degraded than *die kleur behang* 'that color of wallpaper' in (159a), which also involves a neuter N_2 but can actually be found on the internet.

(161) a. ??deze/die kleur$_{[-neuter]}$ hemd$_{[+neuter]}$ a′. dit/dat   formaat$_{[+neuter]}$ boek$_{[-neuter]}$
           this/that color [of] shirt   this/that size [of]   book
     b. ??deze/die maat$_{[-neuter]}$ hemd$_{[+neuter]}$ b′. dit/dat   genre$_{[+neuter]}$ lezer$_{[-neuter]}$
           this/that size [of]   shirt   this that type [of]   reader

II. Compounding

Another conspicuous difference between the examples in (158) is that the non-neuter noun *soort* 'species' in (158a) can appear as the second member of a compound with a similar kind of meaning, whereas this is completely impossible with the N_1 *soort* 'N-like entity' in (158c); the compound *appelsoort* in (162c) is of course acceptable but only as the counterpart of the binominal construction *dat soort apple* 'that species of apple'. Example (162b) further shows that the result with the neuter N_1 *soort* 'kind of' in (158b) is somewhat marginal; furthermore it seems hard to interpret this compound with the "resemblance" reading typical of this noun.

(162) a.   de apensoort
          'the species of monkeys'
     b.   ?het autosoort
          'the kind of car'
     c.   #een appelsoort

The examples in (163) show that nouns like *kleur* 'color', *kwaliteit* 'quality' and *maat* 'size' behave just like the non-neuter noun *soort* 'species'. All these examples occur frequently on the internet.

(163) a.   die behangkleur
          'that color of wall paper'
     b.   deze stofkwaliteit
          'that quality of fabric'
     c.   deze schoenmaat
          'that size of shoe'

III. Pluralization

The noun *soort* 'N-like entity' also differs from the other two nouns in that it does not allow plural formation: example (164c) is acceptable but only under the same

kind of reading as (164a) or (164b); it does not have the interpretation "two apple-like thngs". The plural examples in (164a) and (164b) impose different selection restrictions on N_2: N_2 must be plural in the former, but can be singular in the latter.

(164) a. twee soorten   apen/[#]aap
          two   species [of] monkeys/monkey
    b. twee soorten   auto/auto's
          two   kinds [of]   car/cars
    c. [#]twee soorten   appel/appels
          two   kinds [of]   apple/apples

A caveat is in order here, however. For convenience, we have translated the non-neuter noun *soort* 'species' in (158a) by means of the English noun *species*. This translation may actually be too narrow, since it may also be combined with N_2s like *postzegels* 'stamps' and substance nouns like *koffie* 'coffee'.

(165) a. deze/die soort   postzegels
          this/that kind [of] stamps
    b. deze/die soort   koffie
          this/that kind [of] coffee

This may raise the question of whether we are really dealing with the plural form of the neuter noun *soort* 'kind of' in (164b); it may actually involve the plural form of the non-neuter noun. A reason to assume this is that the neuter noun cannot be modified by means of a quantifier like *elk* 'each'. Since nouns that have a plural form generally do allow modification by *elk* 'each', the ungrammaticality of (166b) casts some doubt on the assumption that we are dealing with the plural form of the neuter noun *soort* in (164b). We leave this for future research.

(166) a. elke[-neuter] soort   aap
          each   kind [of] monkey
    b. *elk[+neuter] soort   auto
          each   kind [of] car

It is hard to determine whether nouns like *kleur* 'color', *kwaliteit* 'quality' and *maat* 'size' behave like the non-neuter noun *soort* 'species' with respect to pluralization; the examples in (167) show that the plural form *kleuren* can readily be followed by a substance noun, but not by a count noun. We leave establishing the precise status of examples like (167) to future research as well.

(167) a. drie kleuren behang
          three colors   wallpaper
    b. drie kleuren [?]trui/*truien
          the   colors   sweater/sweaters

IV. Articles

The constructions in (158) are similar in that they normally do not allow a definite determiner. However, this restriction is relaxed in the case of (158a&b), when the construction is modified by a relative clause. The binominal construction in (168c) is acceptable but only under a reading comparable to (168a) or (168b). Example

(169) shows that a noun like *kleur* behaves like the non-neuter noun *soort* 'species' in this respect.

(168) a. de soort   vogels *(die Jan bestudeert)
           the species [of] birds   that Jan studies
     b. het soort   auto *(dat Jan graag wil   bezitten)
           the kind [of] car   that Jan gladly wants possess
           'the kind of car that Jan wants to have'
     c. #het/de soort appel (dat/die Jan lekker vindt)
           the kind [of] apple that   Jan tasty   considers

(169)   de kleur behang   *(die ik zoek)   is niet verkrijgbaar
           the color wallpaper   that I   look.for is not available

Attributive adjectives can license the indefinite determiner *een* on the nouns *soort* 'species' and *soort* 'kind' but only when they precede N$_1$. This is shown in (170); the primed examples are only acceptable under the "of a sort" reading (that is, (170a′) can be interpreted as "a beautiful monkey of a sort"), in which case an indefinite article must be present. The examples in (171) show again that a noun like *kleur* behaves like the non-neuter noun *soort* 'species' in this respect.

(170) a. een mooie   soort   aap   a′. #een soort mooie aap
           a   beautiful   species [of] monkey
     b. (?)een duur   soort   auto   b′. #een soort dure auto
           an expensive kind [of]   car

(171) a. een mooie   kleur behang
           a   beautiful color wallpaper
     b. *een kleur mooi behang

V. Insertion of van *'of' and attributive modification*

Another difference involves the insertion of the preposition *van* 'of' between N$_1$ and N$_2$. The examples in (172) show that this is readily possible in examples like (158c). Examples like (172a) sound somewhat marginal. They can be found on the internet but the number of cases is relatively small: A Google search on the string *[deze soort van]* resulted in about 7,000 hits, many of which did not instantiate the relevant construction. Judgments on examples like (172b) vary among speakers, but examples of this construction do occur frequently in informal spoken Dutch and can readily be found on the internet; a Google search performed in November 2008 on the string *[dit soort van]* resulted in more than 50,000 hits, and a cursory look at the results revealed that most cases instantiated the relevant construction.

(172) a. ??deze soort   van aap
           that species of monkey
     b. %dit soort   van auto
           this kind   of car
     c. een soort   van appel
           a   kind   of apple
           'an apple-like thing'

The examples in (173) with the indefinite article *een* are all are acceptable but only on a reading similar to (172c). Note that addition of an attributive adjective triggers a more referential reading of the noun *soort*, which makes the example unacceptable.

(173) a. een $^{\#}$(*mooie) soort van aap
       a   beautiful species of monkey
    b. een $^{\#}$(*duur) soort van auto's
       an   expensive kind   of cars
    c. een (*lekkere) soort van appel
       a   tasty   kind   of apple
       'an apple-like thing'

The examples in (174) show that with nouns like *kleur* 'color', *kwaliteit* 'quality' and *maat* 'size', insertion of *van* gives rise to an unacceptable result. These nouns therefore seem to pattern again with the non-neuter noun *soort* 'species'.

(174) a. *die   kleur   van behang
         that   color   of   wallpaper
    b. *deze kwaliteit van stof
         this   quality   of   fabrics
    c. *deze maat   van schoen/schoenen
         this   size   of   schoe/shoes

VI. The syntactic status of N_2 (number agreement)

The constructions in (158) also differ with respect to the question what the syntactic head of the construction is. Example (175a) is only fully acceptable when the non-neuter noun *soort* 'species' triggers agreement on the finite verb, which must therefore be considered the syntactic head of the construction. In (175b), on the other hand, agreement can be triggered either by N_1 or by N_2, which shows that either of the two nouns can act as the syntactic head of the construction. With the noun *soort* 'N-like entity', it is always N_2 that functions as the syntactic head of the construction that triggers agreement.

(175) a. Deze/die soort   vogels is/$^{*?}$zijn moeilijk te oberveren.
         this/that species [of] birds   is/are   hard   to observe
    b. Dit/dat soort   vragen   is/zijn moeilijk te beantwoorden.
         this/that kind [of] questions is/are   hard   to answer
    c. Er   liggen/*ligt een soort   appels op de tafel.
         there   lie/lies   a kind [of] apples   on the table

Note, however, that when the neuter noun *soort* 'kind of' is preceded by the definite article and functions as the antecedent of a relative clause, agreement of N_2 and the verb in the matrix clause gives rise to a degraded result. When the relative pronoun takes N_2 as its antecedent, as in (176b), agreement between N_2 and the finite verb becomes perhaps slightly better, but the result is still marked.

(176) a. Het soort$_i$ vragen   dat$_i$ jij stelt   is/$^{*?}$zijn moeilijk te beantwoorden.
         this kind [of] questions that you ask   is/are   hard   to answer

b.   Het soort vragen$_i$ die$_i$ jij stelt   is/$^{??}$zijn moeilijk te beantwoorden.
     this kind [of] questions that you ask is/are   hard   to answer

The nouns *type* and *model* in (177a&b) do not allow N_2 to trigger agreement on the verb, which suggests that they fall into the same category as the non-neuter noun *soort* 'species'; however, giving judgments is somewhat complicated by the fact that *model* does not readily take a plural N_2, and that the noun *type* is also more common with a singular N_2. Nouns like *kleur* 'color' also require that N_1 triggers agreement on the verb.

(177) a.   Dit type   auto's   rijdt/*rijden snel.
           this type [of] cars   drives/drive fast
     b.   Dit model   auto's   is/*zijn erg geliefd.
           this model [of] cars   is/are   very popular
     c.   Deze kleur   bloemen is/*zijn erg mooi.
           this color   flowers is/are   very beautiful

VII. The semantic status of N_2

The examples in (178) show that, as in the QCs, N_2 may act as the semantic head of all binominal *soort*-constructions. The requirement that the verb *verzamelen* takes a plural count noun or a substance noun as its direct object is satisfied by N_2; when N_2 is a singular count noun, the result is ungrammatical.

(178) a.   Jan verzamelt deze soort   postzegels/*postzegel/wijn.
           Jan collects   this kind [of] stamps/stamp/wine
     b.   Jan verzamelt dit soort   postzegels/*postzegel/wijn.
           Jan collects   this kind [of] stamps/stamp/wine
     c.   Jan verzamelt een soort   postzegels/*postzegel/wijn.
           Jan collects   a kind [of]   stamps/stamp/wine

VIII. Conclusion

This section has discussed some of the properties of the non-quantificational constructions in (158), and it has been shown that the three homophonous forms are different in various respects. Since these forms have not been investigated systematically in the literature, future research on the three constructions in question will undoubtedly reveal more systematic differences. Furthermore, this section has shown that the behavior of the other nouns that may enter the non-quantificational construction is similar to that of the non-neuter noun *soort* 'species' in (158a).

4.1.3. Other constructions

Besides the binominal constructions discussed in Sections 4.1.1 and 4.1.2, there are various other types of binominal constructions without a preposition. Although we are generally dealing with a modification relation between the two nouns, it is sometimes not immediately clear in which direction the modification relation goes. An example like *de staat Washington* 'the state Washington', for instance, may be ambiguous between two different readings: on the first reading N_2 has a modifying function with respect to N_1, and enables the hearer to pick out the intended state; on the second reading N_1 modifies N_2, and thus distinguishes between Washington DC

and the state of Washington. The two readings seem to differ in the intonation patterns they trigger: on the first reading, accent is preferably given to N_2, whereas on the second reading it is instead N_1 that receives contrastive accent. It may be the case that the two readings also involve different syntactic structures (for instance $[_{NP}$ N $[_{NP}$ N]] versus $[_{NP}$ $[_{NP}$ N] N]), but at this moment we do not have any evidence that bears on this issue. It seems that the most common modification relation is that in which N_2 has a modifying function with respect to N_1. Some typical examples, which are often given in the literature, are given in (179). This section will discuss a number of systematic types of examples.

(179) a. de maand   mei
          the month [of] may
     b. de leraar   wiskunde
          the teacher math
          'the math teacher'

I. Binominal constructions that can be used as vocatives and arguments

In this construction type, N_2 is a proper noun referring to a person. When the construction as a whole refers to a person, N_1 can be a rank in a hierarchically ordered organization like the army or the church, a title, a form of address or a kinship noun (especially *tante* 'aunt' and *oom* 'uncle'). Some examples, mainly adapted from Haeseryn et al. (1997), are given in (180).

(180) a. Rank: *koningin Beatrix* 'Queen Beatrix'; *generaal McArthur* 'General McArthur'
     b. Title: *doctor Jansen* 'Dr. Jansen'; *Graaf Grisenstijn* 'Count Grisenstijn'
     c. Form of address: *meneer/mevrouw Verdonk* 'Mr./Mrs. Verdonk'
     d. Kinship noun: *tante Jeanne* 'Aunt Jeanne'; *oom/ome Ben* 'Uncle Ben'

The resulting structures in (180) function as a complex proper nouns, which is clear from the fact that they normally cannot be preceded by an article. The examples in (181) show that in this respect they crucially differ from constructions in which the N_1s occur on their own.

(181) a. Ik heb (*de) koningin Beatrix gezien.
          I have the Queen   Beatrix seen
     b. Ik heb *(de) koningin gezien.
          I have   the Queen   seen

It is also clear from the fact illustrated in (182) that, like proper nouns, binominal constructions can be used both as vocative, and in regular argument position.

(182) a. Docter Jansen, kunt u   even   komen?
          Dr. Jansen   can you for.a.moment come
     b. Kan dokter Jansen even   komen?
          can Doctor Jansen for.a.moment come

Forms of address like *meneer* and *mevrouw* can be followed by a noun phrase denoting a highly ranked profession or social function, as in (183a). When the

second noun phrase denotes a "lower" profession or implies some subjective qualification, as in (183b), the complex noun phrase gets an ironic connotation. In cases like these, the projection of N$_2$ necessarily contains the definite article. N$_1$, on the other hand, is never preceded by a definite article, which again suggests that the construction as a whole functions as a proper noun.

(183) a.   mevrouw de voorzitter; meneer de president
           Madam   the Chairman; Mister   the President
      b.   meneer de student; meneer de verrader
           Mister   the student; Mister the traitor

Constructions like (183) differ from the ones in (180), however, in that their use is more restricted. Their normal use is that of vocative, and they can only be used in argument position when the person referred to is physically present. So, whereas (182b) can be uttered in the absence of the intended person, example (184b) seems to require that the intended person be physically present.

(184) a.   Mevrouw de voorzitter,   kunt u   uitleggen waarom ....
           Mrs.   the chairperson can   you explain   why
      b.   Kan mevrouw de voorzitter   uitleggen waarom ....
           can Mrs.   the chairperson explain   why

Example (185a) illustrates by means of the title noun *professor* that some of the N$_1$s in (180) can be pluralized (De Belder 2009). Since this requires that a determiner be present, it is not clear whether we are dealing with a construction of the type in (180) here. The fact illustrated in (185b) that such plural noun phrases cannot be used as vocative suggests that we are dealing with a binominal construction of the type discussed in the next subsection.

(185) a.   Kunnen *(de) professoren Chomsky and Kayne even   komen?
           can   the professors Chomsky and Kayne   for.a.moment come
      b.   *?Professoren Chomsky and Kayne, kunt u   even   komen?
           Professors Chomsky and Kayne   can   you for.a.moment come

Binominal constructions like *tante Jeanne* 'aunt Jeanne' must be distinguished from phrases like *mijn zuster Els*. This is immediately clear from the fact that the latter cannot be used as a vocative; see the contrast between the (c)-examples in (186). The proper noun *Els* functions instead as an appositive, which is clear from the distinctive intonation pattern in (186b′), with an intonation break preceding and following it; (186a′) does not exhibit this intonation pattern, but can probably be seen as the non-restrictive counterpart of (186b′). For a more extensive discussion of appositions, see Section 3.1.3.

(186) a.   Tante   Jeanne is ziek.   a′. Mijn zuster Els is ziek.
           Aunt   Jeanne is ill   my sister   Els is ill
      b.   *Tante, Jeanne, is ziek.   b′. Mijn zuster, Els, is ziek.
           aunt   Jeanne is ill   my sister   Els is ill
      c.   Tante Jeanne, bent u   boven?   c′. *Mijn zuster Els, ben je   boven?
           Aunt Jeanne   are you upstairs   my sister Els   are   you upstairs

II. Binominal constructions that can only be used as arguments

When the construction as a whole refers to a geographical entity, N_1 can be a noun that denotes the set of geographical entities that the referent of the entire binominal construction is a member of. Some typical examples are given in (187). In examples like these the modification relation is typically bidirectional: while it is clear that the proper noun enables the hearer to identify the intended river, state or city, it is at the same time expressed that the proper noun refers to a river, a state and a city, respectively. Whether both directions are indeed activated may also be related to the extra-linguistic knowledge of the hearer: in (187b), it will be prominent for those speakers who are aware of the fact that the proper noun *Utrecht* is used both for the province Utrecht and its capital city. Note that in these cases N_1 is typically preceded by a definite article, and that the proper noun may also be preceded by an article, provided that it also has one when used in isolation.

(187) a. *de rivier de Amstel* 'the river Amstel'
       b. *de provincie/stad Utrecht* 'the province of Utrecht'
       c. *de stad Amsterdam* 'the city of Amsterdam'

The bidirectional relation also seems to hold for examples like (188). This is perhaps not so clear in (188a), where it is clearly the proper noun that modifies the noun *familie* and not vice versa, but it is in (188b), where it is simultaneously expressed that we are dealing with a poetess called Vasalis, and that Vasalis is a poetess. Again, the use of a definite article seems obligatory.

(188) a. de familie Jansen
           the family Jansen
           'the Jansen family'
       b. de dichteres Vasalis
           the poetess   Vasalis

Note that the order of the common and the proper noun can sometimes be reversed, as is shown in (189a). By using this example we are referring to the person Jan Wolkers in his capacity as a writer (as opposed to his quality as, e.g., a sculptor). It seems reasonable, however, to not consider this example as a binominal construction but as the restrictive counterpart of the construction in (189b), where we are clearly dealing with an appositive noun phrase.

(189) a. Jan Wolkers de schrijver is erg geliefd in Nederland.
           Jan Wolkers the writer   is much loved in the.Netherlands
       b. Jan Wolkers, de (beroemde) schrijver, houdt hier vanavond een lezing.
           Jan Wolkers the famous writer   gives here tonight a lecture
           'Jan Wolkers, the (famous) writer, will give a lecture here tonight.'

Examples like (190) seem close to the examples in (189) but may be crucially different as the phrase following the proper noun may simply function as a surname, which is orthographically represented by writing N_2 with a capital and may be reflected by the fact that N_2 has lost its descriptive content; the person referred to by

Jan de Bakker in (190b), who was the first martyr of the Protestant faith in the Netherlands, was not a baker but a priest.

(190) a. Paulus de Boskabouter
          Paulus the wood.gnome
     b.   Jan de Bakker

As a result of the addition of the proper noun, the binominal phrases discussed so far (188) are uniquely identifying. The same effect can be attained by the noun phrases that contain a numeral in (191a), where the numeral identifies the referent of the full noun phrase. Something similar happens in (191b&c), where the nouns *boek* and *Jan* are not used in their normal denoting function but as meta-linguistic expressions referring to the word themselves.

(191) a. agent 007; kamer B105; bus 22; bladzijde 79
          agent 007; room B105; bus 22; page 79
     b.   Het woord *boek* is een enkelvoudig nomen.
          the word *boek*   is a singular noun
     c.   In taalkundige artikelen wordt altijd   de naam *Jan* gebruikt.
          in linguistic articles   is   always the name *Jan* used
          'In linguistic articles it is always the name *Jan* that is used.'

III. Unclear cases

Occasionally, it is not so clear whether we are dealing with true binominal constructions. Take (192a) as an example. This example differs from the examples above in that it is not a uniquely referring expression. Furthermore, it is possible to express the same meaning by means of a postnominal PP. This suggests that the binominal construction is simply an abbreviated version of the noun phrase with a PP-modifier. Something similar could be claimed for (192b), which can be seen as the abbreviated version of (192b′).

(192) a. een kaartje (voor de) eerste klasse
          a ticket   for the   first class
          'a first class ticket'
     b.   een retourtje   Amsterdam-Den Haag
          a   return.ticket Amsterdam-the Hague
     b′. een retourtje   van Amsterdam naar Den Haag
          a   return.ticket   from Amsterdam to the Hague

In cases like (193), the binominal construction as a whole acts as a proper noun, referring to a certain cabinet, committee, method, etc. The second noun is normally the family name of some person who is intimately related to the referent of the noun phrase as a whole. In cases like these, the binominal construction comes pretty close to a compound, which is also clear from the fact that, in writing, the two nouns are generally linked by means of a hyphen.

(193) a.   het vierde kabinet-Balkenende
            the fourth cabinet-Balkenende
      b.   de commissie-Van Traa
            the committee-Van Traa
      c.   de methode-Paardekooper
            the method-Paardekooper

The examples in (194), in which the second noun phrase has the form of a genitive noun phrase, are clearly relics from the older stages of the language. In present-day Dutch such noun phrases would normally be realized by means of a postnominal *van*-phrase instead of the genitive noun phrase.

(194) a.   Dag des   Oordeels
            day the$_{gen}$ judgment$_{gen}$
            'Doomsday'
      b.   de heer   des   huizes
            the master the$_{gen}$ house$_{gen}$
            'the master of the house'

4.2. Binominal constructions with a preposition

In the previous section, we were mainly concerned with binominal constructions in which the two nouns may or must be adjacent. In this section, we will deal with binominal constructions that contain a preposition. Section 4.2.1 will start with a discussion of *N van een N* constructions like *een schat van een kat*, which obligatorily contain the preposition *van* and are used to express, e.g., metaphoric comparison: "a cat like a treasure". This is followed in Section 4.2.2 by a discussion of the interrogative construction *wat voor een N* 'what kind of N', which obligatorily contains the preposition *voor*, and in which the interrogative pronoun *wat* is used to request a further specification of the set denoted by the second noun.

4.2.1. The N van een N *'N of a N' construction*

This section will discuss *N van een N* constructions of the type in (195). The examples in (195a) and (195b) show that there are two semantic subtypes of this construction; cf. Den Dikken (2006: ch.5). Example (195a) involves some form of metaphoric comparison: the size of the referent of the noun phrase is compared to a tree, that is, he is huge. The most prominent reading of (195), on the other hand, is one in which a property is attributed to the referent of the noun phrase in his/her capacity as a doctor: although the referent may be brilliant in most respects, (s)he is certainly not brilliant as a doctor. In many cases, however, it is not easy to distinguish between the two subtypes. For example, example (195c) is a case of evaluative metaphoric comparison; the referent of the phrase is not only compared with a dike but this comparison is (in this case conventionally) used to simultaneously express that the referent has certain (unspecified) properties that are highly desirable for a managing director.

(195) a. Hij is een boom   van een kerel.
          he   is a   tree   of   a fellow
          'a fellow like a tree'

     b. Hij is een onbenul van een dokter.
          he   is an   idiot   of   a doctor
          'He is an idiot as a doctor'.

     c. Hij is een dijk van een directeur.
          he   is a   dike of   a director

The semantic relation between the nouns in the binominal *N van een N* construction in (196a) is therefore quite different in nature from the relation between the nouns in a construction like (196b), where the PP *van een piraat* 'of a pirate' is a PP-modifier of the noun *schat* 'treasure': in the first we are discussing a cat, whereas in the latter we are discussing a treasure.

(196) a. Marie heeft een schat   van een kat.
          Marie has   a treasure of   a cat
          'Marie has a very sweet cat.'

     b. Jan bewonderde een schat van een piraat.
          Jan admired   a treasure of a pirate
          'Jan admires a treasure of a pirate.'

The two constructions also differ syntactically. The indefinite articles in the binominal construction in (196a), for example, cannot be replaced by the definite article *de* 'the' (at least not with preservation of the intended metaphoric meaning of the example), whereas this is perfectly possible in the modification construction in (196b). This is illustrated in (197).

(197) a. [#]Marie heeft *de* schat van een kat.

     a′. [#]Marie heeft een schat van *de* kat.

     a″. [#]Marie heeft *de* schat van *de* kat.

     b. Jan bewonderde *de* schat van een piraat.

     b′. Jan bewonderde een schat van *de* piraat.

     b″. Jan bewonderde *de* schat van *de* piraat.

Another difference between the two constructions in (196) is that the binominal *N van een N* construction in (196a) cannot be split, whereas the PP-modifier in construction (196b) can be separated from the noun *schat* 'treasure' by means of PP-over-V or topicalization. This is shown in (198).

(198) a. [#]dat Marie een schat heeft van een kat.

     a′. [#]Van een kat heeft Marie een schat.

     b. dat Jan een schat bewonderde van een piraat.

     b′. Van een piraat bewonderde Jan een schat.

Now that we have seen that the binominal construction in (196a) differs from the modified noun phrase in (196b), we will investigate the former in more detail. Keep in mind that the judgments given in the examples below only reflect the metaphoric use of the construction; occasionally, the given strings are acceptable under the

modification interpretation, that is, with a *van*-PP modifying the first noun, but this will not be indicated.

I. The relation between the two nouns (number agreement between the two nouns)

The most conspicuous property of the *N van een N* construction is that, as a general rule, the two nouns agree in number: when N_1 is singular, N_2 must be singular as well; when N_1 is plural, N_2 must also be plural. This is illustrated in (199).

(199) a.   een schat   van een kat   [... sg ... sg ...]
         a   treasure of   a   cat
     b.   schatten van katten   [... pl ... pl ...]
         treasures of   cats
     c. *een schat   van katten   [... sg ... pl ...]
         a   treasure of   cats
     d. *schatten van een kat   [... pl ... sg ...]
         treasures of   a   cat

As is shown in (200), the *N van een N* construction resembles in this respect the copular construction, in which number agreement between the subject and the predicative noun phrase is generally obligatory as well; see Section 8.2, sub IV, for some exceptions. This supports the idea that the two nouns in the *N van een N* construction are in a predicative relation.

(200) a.   Die kat is een schat.   [... sg ... sg ...]
         that cat is a treasure
     b.   Die katten zijn schatten.   [... pl ... pl ...]
         those cats are treasures
     c. ^{??}Die katten zijn een schat.   [... pl ... sg ...]
         those cats   are a treasure
     d. *Die kat is schatten.   [... sg ... pl ...]
         that cat is treasures

Occasionally, however, a predicative singular noun can be predicated of a plural subject, as in (201a); this is especially the case when the predicate is a mass noun, as in (201b). It has been claimed in Bennis et al. (1998) that, for at least some people, the corresponding *N van een N* constructions in the primed examples are also acceptable (to various degrees). If the primed examples are really grammatical (we were not able to find any examples of this sort on the internet), this stresses the similarity of the *N van een N* and the copular construction, and hence supports the idea that N_1 and N_2 are in a predicative relation in the *N van een N* construction.

(201) a.   Die feiten zijn een ramp.   b.   Die voetbalvandalen zijn tuig.
         those facts are a disaster   those hooligans   are scum
     a′. [%]die ramp   van een feiten b′. [%]dat tuig   van een voetbalsupporters
         that disaster of   a facts   that scum of   a   hooligans

It has also been claimed that examples like (202b), in which N_2 is a mass noun, are at least marginally possible for some speakers (we found one example on the internet). However, the corresponding copular construction is absolutely ungram-

matical. It must be noted, however, that in English, singular mass nouns that trigger plural agreement on the finite verb (like *the police* in *The police are coming*) can occur as the subject in a copular construction with a plural nominal predicate: *The police are idiots*. When a mass noun triggers singular agreement on the finite verb, on the other hand, this is impossible: *%The government is/are idiots*. The unacceptability of Dutch examples like (202a) may therefore be due to the fact that all Dutch mass nouns trigger singular agreement on the finite verb.

(202) a. *De regering   is/zijn idioten.
            the government is/are   idiots
       b. %die idioten   van een regering
            those idiots of   a government

II. The semantic head of the construction

A hotly debated issue with respect to the *N van een N* construction is whether N_1 or N_2 is the semantic head of the construction. The fact that in constructions like (203a), the *N van een N* construction can be replaced a noun phrase headed either by N_1 or by N_2 has given rise to the idea that the construction is ambiguous and that either of the two nouns can function as the semantic head of the construction.

(203) a.   Jan en Ruud   zijn twee schatten van katten.
             Jan and Ruud are   two treasures of cats
       b.   Jan en Ruud zijn twee schatten.
       c.   Jan en Ruud zijn twee katten.

This conclusion seems to be mistaken, however, since the acceptability of (203b) is just due to the fact that the noun phrase *twee schatten* is used as a (metaphoric) predicate, just as in the *N van een N* construction. When the binominal phrase is used as an argument, as in (204), the direct object *twee schatten* in (204b) cannot be construed metaphorically, but must refer to entities that are part of the regular denotation set of the noun *schat* 'treasure'; as a result (204b) refer to a different state of affairs than (204c). The fact that (204c) can be used to refer to the same state of affairs as (204a), on the other hand, shows unambiguously that it is N_2 that acts as the semantic head of the *N van een N* construction.

(204) a.   Zij   heeft/kocht twee schatten van katten.
             she   has/bought two treasures of cats
       b.   #Zij heeft/kocht twee schatten.
       c.   Zij heeft/kocht twee katten.

III. The syntactic head of the construction (number agreement with the finite verb)

Since the two nouns in the *N van een N* construction generally agree in number, it is hard to say which of the two nouns triggers agreement on the finite verb. In order to determine that, we have to take recourse to the more exceptional and perhaps disputable cases in (201b) and (202b). Our own judgments suggest that non-linguistic factors may be the determining factor when we are dealing with a singular N_1: in (205a) singular agreement seems to be preferred, whereas in (205a′) it is plural agreement that is preferred. In examples like (205b), in which N_1 is plural, we

always seem to have plural agreement. The data in (205) show that the fact that N_2 is the semantic head of the construction does not necessarily imply that it is also the syntactic head of the construction; cf. the discussion in 4.1.1.2, where we reached a similar conclusion for the quantificational binominal construction.

(205) a. Die ramp van een feiten [%]komt/*komen zeer ongelegen.
            that disaster of a facts   is/are   very inconvenient
     a′. Die ramp van een feiten [%]staan/[*?]staat in iedere grammatica.
            that disaster of a facts   are/is   in every grammar
     b. Die idioten van een regering [?]zijn/*is nu helemaal gek geworden.
            those idiots of a government are/is   now completely mad become

IV. Articles and other determiners preceding N_1 (gender agreement)

Another way to determine the syntactic head of the construction is by considering what determiner the *N van een N* construction takes. If the definite determiner agrees in gender with N_1 we conclude that N_1 is the syntactic head of the construction, and when it agrees with N_2 we conclude that N_2 is the syntactic head. Unfortunately, we cannot show this on the basis of the definite articles *de* and *het*, since we have already seen in (197a) that definite articles cannot be used in the *N van een N* construction. Gender agreement can, however, also be illustrated by means of demonstrative pronouns: the demonstrative *die* 'that/those' is non-neuter and/or plural, whereas the demonstrative *dat* 'that' is singular neuter.

(206)   • Demonstrative pronouns in singular *N van een N* constructions
     a. die[-neuter] schat[-neuter] van een kat[-neuter]
         that   treasure   of   a cat
     b. dat[+neuter] vod[+neuter] van een schrift[+neuter]
         the   rag   of   an exercise book
     c. [%]die[-neuter] schat[-neuter] van een kind[+neuter]
         the   treasure   of   a child
     c′. [%]dat[+neuter] schat[-neuter] van een kind[+neuter]
     d. [%]dat[+neuter] vod[+neuter] van een roman[-neuter]
         the   rag   of   a book
     d′. *die[-neuter] vod[+neuter] van een roman[-neuter]

(207)   • Demonstrative pronouns in plural *N van een N* constructions
     a. die schatten van katten
         those treasures of cats
     b. die vodden van schriften
         those rags   of   exercise books
     c. die vodden van romans
         those rags   of   novels

The examples in (206a&b) and (207) show that the demonstratives can readily be used when the two nouns select the same demonstrative, that is, when they both select *die* or *dat*. According to some speakers the mixed singular examples are excluded. Other speakers do accept at least some of these examples. In the case of (206c&c′), judgments appear to differ among these speakers: some prefer the

primeless example, in which the demonstrative agrees with N_1 but not with N_2, whereas others prefer the primed example, in which the demonstrative agrees with N_2. The judgments on the 9d)-examples in (206), on the other hand, seem clearer: the primed example is generally rejected, whereas the primeless example is accepted by at least some speakers. Similar judgments have been collected with the possessive pronouns $onze_{\text{[-neuter,+sg]}}$ 'our' and $ons_{\text{[+neuter,+sg]}}$ 'our' in (208). We refer the reader to Everaert (1992) for a detailed discussion.

(208) • The possessive pronoun *ons/onze* 'our'
    a. $^{\%}$Onze$_{\text{[-neuter]}}$ draak$_{\text{[-neuter]}}$ van een toneelstuk$_{\text{[+neuter]}}$ is   uitgevoerd.
       our   dragon   of a play   has.been performed
    a. $^{\%}$Ons$_{\text{[+neuter]}}$ draak$_{\text{[-neuter]}}$ van een toneelstuk$_{\text{[+neuter]}}$ is uitgevoerd.
    b. $^{\%}$ons$_{\text{[+neuter]}}$ doetje$_{\text{[+neuter]}}$ van een filiaalchef$_{\text{[-neuter]}}$
       our   softy   of   a branch.manager
    b'. *onze$_{\text{[-neuter]}}$ doetje$_{\text{[+neuter]}}$ van een filiaalchef$_{\text{[-neuter]}}$

Table 4 summarizes the above findings. Examples in which the determiner agrees in gender with the two nouns are always possible. When the two nouns differ in gender, agreement of the determiner and N_1 is obligatory for at least one group of speakers. For another group of speakers, the gender of N_1 affects the agreement pattern: when N_1 is [-NEUTER], agreement between the determiner and N_2 is preferred, but when N_1 is [+NEUTER], agreement of the determiner and N_2 is also blocked for them. It goes without saying that those cases in which agreement is entirely absent give rise to the most degraded results, which is not reflected by the judgments in the table.

Table 4: Gender agreement in singular N van een N *constructions*

	N1	N2	AGREEMENT WITH	JUDGMENT		
				GROUP I	GROUP II	GROUP III
DET$_{\text{[-neuter]}}$	-neuter	-neuter	N_1 and N_2	O.K	O.K	O.K
	-neuter	+neuter	N_1	*	?	*
	+neuter	-neuter	N_2	*	*	*
	+neuter	+neuter	no agreement	*	*	*
DET$_{\text{[+neuter]}}$	+neuter	+neuter	N_1 and N_2	O.K	O.K	O.K
	+neuter	-neuter	N_1	*	?	*
	-neuter	+neuter	N_2	*	*	?
	-neuter	-neuter	no agreement	*	*	*

To conclude this discussion of agreement, we want to point out that the set of determiners preceding the *N van een N* construction is rather limited. The demonstratives *die/dat* in (206) and (207) above, for example, do not really have a deictic function, but rather seem to express a kind of affective meaning, as can also be found in, for example, *die Jan toch!*, which is said of Jan when he is doing/saying something special and the speaker wants to express his approval or (mild) disapproval of what Jan is doing/saying. As is shown by (209a), using demonstratives in their deictic function generally leads to a bad result, just like the use of the definite article does. Only in very special contexts are "true"

demonstratives possible. An interrogative example like (209b), for instance, seems possible provided that the speaker is, for instance, hugging the cat in question thus showing that he himself is fond of it, but not when he is just pointing at it. In other words, (209b) is only possible when used as a kind of rhetorical question.

(209) a. ^{??}Jan bekeek   die schatten van katten (en Marie bekeek   deze).
         Jan looked.at   those treasures of cats   and Marie looked.at those
     b. En wat   vind   je   van deze schat van een kat?
         and what consider you of   this treasure of a cat
         'And, what do you think of this wonderful cat?'

The fact that the *N van een N* construction conveys a strong personal evaluation of the referent of the construction may also account for the fact that first person possessive pronouns are more commonly used in the construction than the second or third person ones. When acceptable, the use of second and third person possessive pronouns generally conveys an ironic message; the speaker of (210b), for example, confronts the hearer with a fact that is not compatible with the description of the cats as being "schatten".

(210) a. Mijn/^{*?}jouw/^{*?}haar schatten van katten zijn ziek.
        my/your/her treasures of cats   are ill
     b. Mijn/jouw/haar schatten van katten hebben het vlees weer eens gestolen.
        my/your/her treasures of cats   have   the meat again   stolen
        'Those nice cats of yours stole the meat from the pan again.'

     Due to restrictions like these, the set of determiners preceding the *N van een N* construction is largely restricted to the cases discussed above and the indefinite articles *een*/∅ and derivatives of them like *zo'n* 'such a', *geen* 'no' and *wat een* 'what a'. Some examples involving these indefinite determiners are given in (211).

(211) a. Ruud is een schat   van een kat.
        Ruud is a   treasure of   a cat
     a′. Jan en Ruud   zijn ∅ schatten van katten.
        Jan and Ruud   are   treasures of cats
     b. Jan is zo'n   schat   van een kat.
        Jan is such a treasure of   a cat
     c. Is Ruud geen schat   van een kat?
        Is Ruud no   treasure of   a cat
        'Isn't Ruud a wonderful cat?'
     d. Wat een schat   van een kat!
        what a   treasure of   a cat
        'What a wonderful cat!'

V. Modification of the nouns

Modification of the nouns in the construction is subject to various restrictions. Inserting an attributive adjective immediately before N$_2$, for example, is impossible; the only exception are classifying adjectives in collocations like *Cyperse kat* 'tabby' in (212c).

(212) a. *een schat van een vriendelijke kat
       a   treasure of a   kind   cat
    b. ??een schat van een oude   kat
       a   treasure of an   old   cat
    c. een schat van een Cyperse kat
       a   treasure of a   tabby

Using an attributive adjective modifying N_1 is possible, but generally these modifiers are amplifying or affective in nature and do not attribute a property to N_1, which is of course not surprising given that N_1 is not referential in nature.

(213) a. een grote schat   van een kat
       a   big   treasure of a   cat
       'a *very* nice cat'
    b. een lelijk serpent van een hond
       an ugly serpent of a   dog
       'a *very* nasty dog'

According to some, an attributive adjective preceding N_1 can also be used to modify N_2, which would be compatible with the fact that it is N_2 that acts as the semantic head of the construction. Some examples, taken from Den Dikken (1995b), are given in (214).

(214) a. %een roodharig$_{[+neuter]}$ slagschip$_{[+neuter]}$ van een vrouw$_{[-neuter]}$
       a   red.haired   battleship   of a   woman
       'a fierce red-haired woman'
    a′. *een roodharige$_{[-neuter]}$ slagschip$_{[+neuter]}$ van een vrouw$_{[-neuter]}$
    b. %een roodharige$_{[-neuter]}$ ijsberg$_{[-neuter]}$ van een wijf$_{[+neuter]}$
       a   red.haired   iceberg   of a   bitch
       'a frigid red-haired bitch'
    b′. %een roodharig$_{[+neuter]}$ ijsberg$_{[-neuter]}$ van een wijf$_{[+neuter]}$

Insofar as the examples in (214) are acceptable, it is clear that *roodharig* must be modifying N_2. Note that the data in (214) are in accordance with the findings with respect to gender agreement in Table 4: the (a)-examples show that when N_1 is neuter and N_2 is non-neuter, the adjective must agree with N_1, whereas the (b)-examples show that when N_1 is non-neuter and N_2 is neuter, speakers seem to vary with respect to the noun that triggers agreement — for some speakers it is N_1, as in (214b), whereas for others it is N_2, as in (214b′). So again, we have to conclude that the feature [+NEUTER] N_1 blocks gender agreement with N_2 for all speakers.

Although attributively used adjectives may precede N_1, postnominal modifiers cannot immediately follow it, as is shown in (215a). Probably, the impossibility to modify N_1 is again due to the fact that N_1 is not referential in nature. Example (215b) shows that postmodifiers following N_2 are possible, but in these cases we cannot immediately decide whether the PP modifies N_2 or the complete *N van een N* construction.

(215) a.   een boom (*daar/*in de tuin) van een kerel
            a   tree   there/in the garden of   a fellow
            'a big/strong fellow'
     b.   een boom van een kerel   uit Groningen
            a   tree   of   a   fellow from Groningen

In order to find out whether the modifier in (215b) modifies N_2 or the complete *N van een N* construction, we may take into account relative clauses such as those given in (216). The fact that the relative pronoun must agree in gender with N_2 suggests that it is this noun that is modified, and not the complete *N van een N* construction.

(216) a.   een schat$_{[-neuter]}$ van een kind$_{[+neuter]}$ dat$_{[+neuter]}$/*die$_{[-neuter]}$ ziek is
            a treasure   of a   child   that   ill is
            'a charming child that is ill'
     b.   een kreng$_{[+neuter]}$ van een vrouw$_{[-neuter]}$ die$_{[+neuter]}$/*dat$_{[+neuter]}$ weggelopen is
            a   carcass   of a   wife   that   run.away has
            'a bitch of wife that has run away'

VI. The article een *preceding N_2*

The indefinite article preceding N_2 cannot be replaced by other kinds of determiners. The indefinite article seems sensitive to the number of N_2: when N_2 is singular the indefinite article is *een* 'a', and when it is plural the article has the null form.

(217) a.   Marie heeft een schat van een/*∅ kat.
            Marie has   a treasure of   a   cat
     b.   Marie heeft twee schatten van ∅/$^{\%}$een katten.
            Marie has   two treasures of   ∅/a   cats

The "%" preceding *een* in (217b) is due to the fact that whereas Bennis et al. (1998) claim that examples like *schatten van een katten* are possible, other speakers consider the result highly marked at best. Still, the N_{pl} *van een* N_{pl} construction is fully acceptable for all speakers in exclamative contexts like (218a), in which case both nouns are preceded by the indefinite article *een*. As shown in (218b), such a combination of *een* and a plural noun is not restricted to *N van een N* constructions of this kind, but are typical of this kind of exclamative constructions.

(218) a.   Een schatten van een katten dat hij heeft!
            a treasures   of   a cats   that he has
     b.   Een boeken dat hij heeft!
            a books   that he has

This suggests that the indefinite article and N_2 can simply be analyzed as a noun phrase. There is, however, a problem with this conclusion; *een* is also possible with N_2s that normally cannot be preceded by an indefinite article. The most conspicuous case involves proper nouns: normally, a proper noun like *Marie* is not preceded by an indefinite article (**een Marie*), yet in (219) it is obligatorily present.

(219) a.   die schat   van *(een) Marie
             that treasure of   a   Marie
      b.   dat serpent van *(een) Marie
             that snake   of   a   Marie

The same can perhaps be shown on the basis of substance nouns, which normally cannot be preceded by an indefinite article either: *een pracht van een wijn/kaas* (lit.: a beauty of a wine/cheese). However, a caveat is in order, since speakers tend to no longer construe the N$_2$s in such cases as substance nouns. Instead, the noun *wijn* will, for instance, be interpreted as referring to a certain kind of N$_2$, and the N$_2$ *kaas* as referring to an actual object.

    There are also proper nouns that can be preceded by a definite, but not by an indefinite article, for example *de/*een Westerkerk* or *het/*een paleis op de Dam*. Again, these proper nouns must be preceded by *een* in the *N van een N* construction; note that the definite article, which is normally present, cannot be used in these binominal constructions.

(220) a.   die pracht van een Westerkerk
             that beauty of   a   *Westerkerk*
      b.   dat monster van een Paleis op de Dam
             that monster of   a   *Paleis op de Dam*

The facts in (219) and (220) have led to the suggestion that *een* is actually not part of the noun phrase headed by N$_2$, but is present to perform some other function; see Bennis et al. (1998) for discussion.

VII. *The preposition* van

Since the preposition *van* cannot be replaced by any other preposition, it has been suggested that it is a spurious preposition. Alexiadou et al. (2007: 246) suggest that this can further be motivated by the fact that, unlike true *van*-PPs, the sequence *van* + noun phrase cannot undergo pronominalization. Another fact that may point in this direction is that this sequence cannot be moved independently of the sequence preceding *van*.

(221) a.   Jan is een boom van een kerel.
             Jan is a tree   of a fellow
      b. *Jan is een boom ervan.
           Jan is a tree   there-of

Bennis et al. (1998) also adopt the claim that *van* is a spurious preposition and they have suggested that its syntactic function is to signal the predicative relation between N$_1$ and N$_2$; they claim that, in a sense, *van* is comparable to the copula *zijn* 'to be' in a copular construction.

VIII. *Syntactic distribution*

The *N van een N* construction can be used in all regular NP-positions, that is, both as an argument and as a nominal predicate. In (222), we give examples in which the construction functions as a subject, a direct object, an indirect object, the complement of a preposition, and a predicate in a copular construction.

(222) a. Zo'n schat van een kind   verdient   een lolly.   [subject]
          such a treasure of a child deserves a lollipop
      b. Ik heb   een pracht van een vaas gekocht.   [direct object]
          I   have a beauty of a vase   bought
      c. Jan geeft zo'n schat van een kind   graag een kusje.   [indirect object]
          Jan gives such a treasure of a child gladly a kiss
      d. Iedereen heeft respect voor zo'n boom van een vent. [complement of P]
          everyone has   respect for   such a tree of a fellow
          'Everybody respects such a big/strong fellow.'
      e. Jan en Ruud   zijn schatten van katten.   [nominal predicate]
          Jan and Ruud are   treasures of cats

4.2.2. *The interrogative* wat voor *'what kind of' construction*

This section will discuss the so-called *wat voor* construction in (223). Section 4.2.2.1 starts by briefly discussing the meaning of the *wat voor* construction, and Section 4.2.2.2 will focus on its internal structure. One of the typical properties of the *wat voor* phrase is that it can be split by moving the interrogative pronoun *wat* to clause-initial position while stranding the *voor NP* string, as in (223b). Section 4.2.2.3 will discuss this so-called *wat voor* split in detail.

(223) a. Wat voor een boek/boeken lees je?
          what for   a   book/books   read you
          'What kind of book/books are you reading?'
      b. Wat lees je voor een boek/boeken?

Before we start our discussion we want to point out that the availability of both the unsplit and the split pattern clearly distinguishes example (223b) from the seemingly similar construction in (224a): the unacceptability of (224b) suggests that *wat* and *aan boeken* do not form a constituent.

(224) a. Wat heeft Jan aan boeken gekocht?
          what has   Jan on books   bought
          'What did John buy in the way of books?'
      b. *Wat aan boeken heeft Jan gekocht?

4.2.2.1. *The meaning of the* wat voor *construction*

The complex phrase *wat voor (een)* 'what kind of' can be classified together with the *wh*-word *welk(e)* 'which' as interrogative demonstrative pronouns; cf. Section 5.2.3.1.1. *Wat voor N* phrases differ from *welk(e) N* phrases in °D-linking: whereas the latter instruct the addressee to select certain referents from some referent set previously established in the discourse, the former do not presuppose such a pre-established set and simply instruct the addressee to provide a further characterization of the set denoted by the N in question. In other words, a felicitous answer to a *wat voor N* question involves a noun phrase denoting a subset of N, whereas a felicitous answer to a *welk(e) N* question involves a noun phrase referring to one or more discourse entities for which the predicate in the question holds. A prototypical answer to the *wat voor* question in (225a) is therefore something like (225a′), in which the relevant set of shoes is narrowed down to shoes that are blue

and have high heels. This answer would not be appropriate for the question in (225b), since in this case the speaker implies that the relevant set of shoes is already identified; the speaker is specifically asking for the identification of the relevant entity, which is felicitously provided by the answer in (225b′).

(225) a.　Wat voor een schoenen heb je　gekocht?
　　　　 what for　a　 shoes　 have you bought
　　　　 'What kind of shoes did you buy?'
　　 a′.　Blauwe　met hoge hakken.
　　　　 blue　　 with high heels
　　　　 'Blue ones with high heels.'
　　 b.　Welke schoenen heb je　gekocht?
　　　　 which shoes　　 have you bought
　　　　 'Which shoes did you buy?'
　　 b′.　Die　blauwe　met hoge hakken.
　　　　 those blue　　 with high heels
　　　　 'Those blue ones with high heels.'

Out of the blue, (225b′) could not be used as an answer to the question in (225a), since it would wrongly presuppose that the person who is asking the question has the necessary background information to determine the referent of the noun phrase. However, if the person who is answering the question provides an additional hint, for instance by pointing to a certain pair of shoes, the answer may become felicitous. The person who answers can also provide additional linguistic clues indicating that the relevant set is or should be known to the speaker: the adverb *natuurlijk* 'of course' in, for instance, *die blauwe met hoge hakken natuurlijk* may provide such a clue.

In short, we can say that whereas a *welk(e) N* question requires as an answer a noun phrase with a unique referent taken from a presupposed set, the *wat voor N* question merely asks for a further restriction of the set denoted by N (which is not known to the speaker). This distinction also holds when the *wat voor* phrase is used predicatively. A *wat voor N* question like (226a) asks for a further specification of the property already ascribed to the subject of the clause (viz. the property of being a book). A *welk(e) N* question like (226b), on the other hand, asks for unambiguous identification of the book. This accounts for the difference in definiteness of the noun phrases that are given as an answer.

(226) a.　Wat　voor　een　boek　is dat?
　　　　 what for　 a　 book is that
　　　　 'What kind of a book is that?'
　　 a′.　Een boek dat　ik　voor mijn verjaardag heb　gekregen.
　　　　 a book　 that I　for my birthday　　 have got
　　　　 'A book that has been given to me for my birthday.'
　　 a″.　Een roman.
　　　　 A novel

> b.   Welk boek is dat?
>   which book is that
> b′. Het boek dat ik voor mijn verjaardag heb   gekregen.
>   the book that I   for   my birthday   have got
>   'The book that has been given to me for my birthday.'
> b″. *De zondvloed* van Jeroen Brouwers.
>   *De zondvloed* by   Jeroen Brouwers

4.2.2.2. Internal structure and distribution of the wat voor *construction*

The *wat voor* construction is a binominal construction that obligatorily contains the preposition *voor* 'for'. The first noun in the phrase (N_1) is always the interrogative pronoun *wat* 'what'. The second noun (N_2) can be a singular or plural count noun, a non-count noun, or the existentially quantified personal pronouns *iets* 'something' or *iemand* 'someone'. N_2 is mostly optionally preceded by *een*, although this seems to be a less favored option when N_2 is a quantifier. Some examples are given in (227).

(227) a.   [Wat voor (een) boek] lees jij?   [singular count noun]
            what for   a   book read you
            'What kind of book do you read?'
       b.   [Wat voor (een) boeken] lees jij?   [plural count noun]
            what for   a   books   read you
            'What kind of books do you read?'
       c.   [Wat   voor (een) koffie] drink jij?   [non-count noun]
            what   for   a   coffee drink you
            'What kind of coffee are you drinking?'
       d.   [Wat voor (?een) iets/iemand]   is dat?   [quantified pronoun]
            what for   a   something/someone is that
            'What kind of thing/person is that?'

As pointed out in 4.2.2.1, the *wat voor* questions in (227) request a further specification of N_2. The answer to (227a) could be, e.g., a children's book or a textbook in linguistics. Below, we will discuss the syntactic properties of the construction.

I. The string wat voor (een) N *is a constituent*

The fact that the string *wat voor een N* occupies the initial position of the clause in the examples in (227) above suggests that we are dealing with a phrase. This conclusion is further supported by the fact illustrated in (228) that *wat voor* phrases can be coordinated (the °constituency test).

(228)   Wat voor een vrouw en wat voor een man heb   jij   ontmoet?
           what for a woman and what for a man   have you met
           'What kind of woman and what kind of man did you meet?'

The fact that the *wat voor* phrases in (227) can also be split (the so-called *wat voor* split) does not contradict this claim, since the split patterns can be and generally are analyzed as involving subextraction of *wat,* as indicated in (229).

(229) a. Wat$_i$ lees jij [t_i voor een boek]?
    b. Wat$_i$ lees jij [t_i voor een boeken]?
    c. Wat$_i$ drink jij [t_i voor een koffie]?
    d. Wat$_i$ is dat [t_i voor iets/iemand]?

Evidence in favor of this analysis comes from the fact that the split is possible only in certain syntactic configurations. For example, when the *wat voor* phrase is the complement of a preposition, as in (230), the split is impossible because subextraction from an NP-complement of a preposition is generally excluded. Since much more can be said about the syntactic restrictions on the *wat voor* split, we will postpone further discussion of this to Section 4.2.2.3.

(230) a. [$_{PP}$ Op [$_{NP}$ wat voor een bericht]] wacht je?
          for   what for a message   wait you
         'For what kind of message are you waiting?'
    b. *Wat$_i$ wacht je [$_{PP}$ op [$_{NP}$ t_i voor een bericht]]?

II. The semantic head of the construction

The examples in (227) suggest that it is N$_2$ that satisfies the semantic selection restrictions of the verb; this is further supported by the fact that the noun *boek(en)* 'book(s)' in (227a&b) cannot be replaced by a noun like *sigaar*, which would violate these selection restrictions: **Wat voor een sigaar/sigaren lees je?* 'what kind of cigar(s) are you reading?'. It is therefore plausible to assume that N$_2$ is the semantic head of the construction, not the interrogative pronoun *wat*. This assumption can be further supported by the binding data in (231), in which coreference is indicated by means of italics.

(231) a. *Wie* hebben *elkaar*   gebeten?
        who have   each.other bitten
        'Who bit each other?'
    b. **Wat*   hebben/heeft *elkaar*   gebeten?
        what have/has   each.other bitten
    c. *Wat voor honden* hebben *elkaar*   gebeten?
        what for dogs   have   each.other bitten
        'What kind of dogs bit each other?'
    d. **Wat voor hond* heeft *elkaar*   gebeten?
        what for dog   has each.other bitten

The examples in (231a&b) show that the interrogative pronouns *wie* 'who' and *wat* 'what' differ in that the former can act as the antecedent of the reciprocal pronoun *elkaar* 'each other', whereas the latter cannot (a difference which may be related to the fact that *wat* triggers singular agreement on the finite verb, whereas *wie* may trigger either singular or plural agreement; see the discussion under III). The acceptability of example (231c) therefore suggests that it is N$_2$ that acts as the antecedent of *elkaar*; this is confirmed by the unacceptability of example (231d), where the singular noun *hond* cannot be the antecedent of *elkaar*. These facts support the claim that it is N$_2$ that functions as the semantic head of the *wat voor* phrase.

III. The syntactic head of the construction

The examples in (232) show that the interrogative pronoun *wat* 'what' differs from *wie* 'who' in that it obligatorily triggers singular agreement on the finite verb.

(232) a. Wat ligt/*liggen er   op de grond?
           what lies/lie   there on the floor
       b. Wie ligt/liggen er   op de grond?
           who lies/lie   there on the floor

Consequently, if *wat* functions as the syntactic head of the construction, we would wrongly expect that a *wat voor* phrase would trigger singular agreement on the finite verb as well. The data in (233) therefore suggest that N_2 is not only the semantic but also the syntactic head of the construction.

(233) a. Wat voor een man loopt   daar?
           what for a man   walks   there
           'What kind of man is walking there?'
       b. Wat voor een mannen lopen/*loopt daar?
           what for a men   walk/walks   there
           'What kind of men are walking there?'

IV. The status of the string wat voor een

The conclusion that N_2 is both the semantic and the syntactic head of the *wat voor* phrase has given rise to the assumption that the string *wat voor een* is a complex modifier. Apart from the fact that the interrogative pronoun *wat* cannot be replaced by any other pronoun, there are two arguments that support this assumption: the element *een* does not behave like a regular indefinite article, and the element *voor* lacks the case assigning property of prepositions. A problem for this assumption is, however, that *wat* can be extracted from the string *wat voor een*, which would be unexpected in view of the °Lexical Integrity Constraint: when we are indeed dealing with a lexicalized form, extraction of *wat* should be blocked.

A. The article een

Support for the assumption that the *wat voor* phrase is a complex modifier comes from the fact that *een* does not act like a regular indefinite article, which is clear from the fact, illustrated in (234a), that it may precede both singular and plural N_2s, whereas indefinite articles preceding a plural noun normally have a null form. As a matter of fact, it may be the case that the null form may also appear in the *wat voor* construction (alternatively, of course, one may assume that no article is present at all), but the data in (234b) then show that this null form is not restricted to plural noun phrases, as would normally be the case.

(234) a. Wat voor een hond/honden heb   jij?
           what for   a   dog/dogs   have you
           'What kind of dog/dogs do you have?'
       b. Wat voor hond/honden heb   jij?
           what for   dog/dogs   have you
           'What kind of dog/dogs do you have?'

It is not entirely clear whether *een* can also precede N$_2$ when the latter is an existential pronoun (which would be normally excluded: **een iets/iemand*). Our intuitions are that this is impossible when N$_2$ is the [-HUMAN] pronoun *iets* 'something', but at least marginally possible when it is the [+HUMAN] pronoun *iemand* 'someone'. This intuition seems to be confirmed by a Google search performed in June 2008: whereas the search on the string *[wat voor een iets]* resulted in only 3 *wat voor* constructions, the search on *[wat voor een iemand]* yielded 17 results. It can further be noted that in most of these cases the *wat voor* phrase was used as the predicate in copular constructions like *wat voor een iets is dat?* 'what kind of thing is that?' and *wat voor een iemand ben jij?* 'what kind of person are you?'

(235) a. Wat voor ($^{*?}$een) iets   zou   jij   willen hebben?
           what for   a   something would you   want   have
           'What kind of thing would you like to have?'
     b. Wat voor ($^?$een) iemand zou   jij   willen uitnodigen?
           what for   a   someone would you   want   invite
           'What kind of person would you like to invite?'

Another argument in favor of the idea that *een* is a spurious article is that it cannot be replaced by any other determiner or any other element that may occur in the left periphery of the noun phrase; replacement of *een* by, e.g., a definite article or a numeral leads to an ungrammatical result.

(236)   Wat voor *de/$^{*?}$drie honden heb jij?
          what for   the/three dogs   have you

It must be noted, however, that there is one apparent counterexample to the claim that N$_2$ cannot be preceded by a numeral, viz., constructions involving an empty N$_2$ licensed by °quantitative *er*, as in (237). *Een*, which is normally pronounced with a schwa, must be pronounced in this construction like the numeral *één* 'one', /e:n/. However, since *één* cannot be replace by a numeral like *drie*, it seems plausible that the occurrence of *één* in (237) is due to the fact that the empty noun must be preceded by some element carrying stress. Note that examples like (237a) also occur without *er*: we found various instances of *Wat voor een wil je (hebben)?* on the internet.

(237) a. [Wat voor één/*drie [*e*]] wil jij   er   hebben?
            what for   a/three   want you   ER   have
           'What kind would you like to have?'
     b. Wat wil jij er [voor één/*drie *e*] hebben?

Some speakers also allow examples like (237a) without *een* being present, as shown in (238a). The split pattern in (238b), on the other hand, is consistently judged unacceptable, which might be related to the fact that the phonetic string in (238b) has a more prominent reading in which *er ... voor* functions as a pronominal PP: *Wat wil jij ervoor hebben?* 'What do you want to have for it?'. Examples like (238a) also occur without *er*: we found various instances of *Wat voor wil je (hebben)?* on the internet.

(238) a. %[Wat   voor [*e*]] wil   jij   er hebben?
          what for   want you ER have
          'What kind would you like to have?'
    b. *Wat wil jij er [voor [*e*]] hebben?

B. The preposition voor

The discussion in Subsection A suggests that *een* is a spurious indefinite article. Similarly, the preposition *voor* may not be a true preposition, which is suggested by the fact that it does not assign case. Unfortunately, this cannot be shown on the basis of Dutch since this language lacks morphological case, but we can show this on the basis of German. Whereas the German preposition *für* normally assigns accusative case, it does not assign accusative case to N_2 in the *was für* construction. Instead, the case of N_2 depends on the case of the complete *was für* phrase: when the *was für* phrase is a subject, N_2 has nominative case; when it is a direct object, it has accusative case; and when it is the complement of a preposition like *mit* 'with', it is assigned dative case. This is shown in (239).

(239) a. Was für ein Mann$_{nom}$ hat das Buch gelesen?   [German]
          what for a man   has the book read
          'What kind of man read the book?'
    b. Was für einen Mann$_{acc}$ hat sie geheiratet?   [German]
          what for a man   has she married
          'What kind of man did she marry?'
    c. Mit   was für einem Mann$_{dat}$ hast du   gesprochen?   [German]
          with what for a man   have you spoken
          'With what kind of man did you speak?'

Another fact that can perhaps be taken to show that *voor* is not a true preposition is that the string *voor* + noun phrase cannot undergo R-pronominalization, which is normally possible with *voor*-PPs.

(240) a. Wat voor een boek is dat?
          what for a book   is that
    b. *Wat ervoor is dat?
          what for-it   is that

C. The wat voor split

The conclusions in A and B that *een* is a spurious article and that *voor* is not a "true" preposition either could be seen as supporting the assumption that *wat voor een* is a complex modifier that is part of the lexicon as such: the availability of the string *wat voor* could then be accounted for by assuming that it is a reduced form of *wat voor een*. Analyses that adopt this assumption do, however, run into problems with the *wat voor* split. If *wat voor (een)* is a complex modifier, the examples in (241) would violate the Lexical Integrity Constraint, according to which parts of lexical items cannot undergo syntactic processes: in these examples, *wat* is extracted from the lexical modifier *wat voor (een)*. Assuming that *wat voor (een)* is a complex modifier therefore forces us to introduce additional mechanisms to allow

the violation of this constraint; see Corver (1990/1991) for a good overview of several proposals from the literature.

(241)   Wat heb jij   voor (een) hond/honden?
          what have you for   a   dog/dogs
          'What kind of dog/dogs do you have?'

As an alternative, it has been proposed that *wat* must be considered a nominal predicate, that is, the *wat voor* construction should be analyzed like the *N van een N* construction in Section 4.2.1. Since arguing for this would lead us into a thicket of theory-internal issues of generative grammar, we cannot go into this matter here; for a discussion of this analysis, see Den Dikken (1995b) and Bennis et al. (1998), who provide more or less similar analyses for the two constructions in question.

V. Modification

Being an interrogative pronoun, N_1, of course, cannot be modified. Premodification of N_2, on the other hand, does not seem to be restricted. Some examples of *wat voor* phrases with an N_2 modified by an attributive adjective are given in (242a&b).

(242) a.   Wat loopt daar voor (een) rare   man?
           what walks there for   a   strange man
      a′.   Wat voor (een) rare man loopt daar ?
      b.   Wat heb je   daar voor (een) interessant pakje?
            what have you there for   an   interesting parcel
      b′.   Wat voor (een) interessant pakje heb je daar?

Modification by means of a PP or a relative clause is possible as well, as is shown in (243a&b). However, in these cases, there seems to be a preference to split the *wat voor* phrase, which may be due to °focus and to the general tendency to place longer phrases in the right periphery of the clause.

(243) a.   Wat loopt daar voor (een) rare   man met een stok?
           what walks there for   a   strange man with a cane
      a′.   ?Wat voor (een) rare man met een stok loopt daar?
      b.   Wat heb je   daar voor (een) interessant pakje   in pakpapier?
            what have you there for   an   interesting parcel in wrapping paper
      b′.   ?Wat voor (een) interessant pakje in pakpapier heb je daar?

Postmodification by means of a relative clause is possible, provided that a split *wat voor* phrase is used; an example is given in (244a), although it must be noted that the most likely reading of this sentence is one in which the relative clause is interpreted as an apposition. Example (244b) shows that when the *wat voor* phrase is not split, use of a relative clause leads to an unacceptable result.

(244) a.   Wat is dat   voor een man   die daar met een stok loopt?
           what is that there for a man that with a cane walks
      b.   *?Wat voor een man die daar met een stok loopt is dat?

VI. Syntactic distribution

The *wat voor* construction can be used in all regular NP-positions, that is, both as an argument and as a nominal predicate. In (245), we give examples in which the construction functions as a subject, a direct object, an indirect object, the complement of a preposition, and the predicate in a copular construction.

(245) a. Wat voor een kind   heeft die lolly   gestolen?   [subject]
          what kind of a child has   that lollipop   stolen
  b. Wat heb   je   voor een vaas gekocht?   [direct object]
          what have you   for a vase   bought
  c. Wat voor een kind heeft hij die lolly   gegeven?   [indirect object]
          what kind of child has   he that lollipop   given
          'To what kind of child did he give a lollipop?'
  d. Op wat voor een bericht ben je aan het wachten?   [complement of P]
          for what for a message   are   you AAN HET wait
          'For what kind of message are you waiting?'
  e. Wat voor een boek is dat?   [nominal predicate]
          what for a book   is that
          'What kind of book is that?'

4.2.2.3. The wat voor *split*

This section will discuss in more detail the properties of the *wat voor* split. This split is generally assumed to be the result of moving the interrogative pronoun *wat* into clause-initial position, as in (246d). Splitting the *wat voor* phrase at some other point is excluded, as is illustrated in (246b&c).

(246) a. *Wat voor een boeken* heb jij   gelezen?
          what for a books   have you read
          'What kind of books did you read?'
  b. **Wat voor een* heb jij *boeken* gelezen?
  c. **Wat voor* heb jij *een boeken* gelezen?
  d. *Wat* heb jij *voor een boeken* gelezen?

It has been argued that the syntactic function of the *wat voor* phrase, along with its surface position in the clause, is relevant for the question of whether the *wat voor* split is allowed. We will review the relevant data in 4.2.2.3.1, and show that at least subjects and direct objects of various sorts of verbs allow the split, provided that they occupy their "base" position in the clause. The *wat voor* split is blocked not only by movement of the *wat voor* phrase, but also by the presence of certain other elements in the clause, such as the negative adverb *niet* 'not'. This will be discussed in 4.2.2.3.2, where we will also discuss so-called "parasitic gaps" licensed by a *wat voor* phrase.

4.2.2.3.1.   The syntactic function of the split phrase

Whether *wat voor* split is possible depends on the syntactic function of the phrase. Below, we will show that direct objects, subjects and nominal predicates do allow the split, while indirect objects and complements of prepositional phrases do not.

Further, it will be shown that the surface position of the stranded remnant of the *wat voor* phrase (henceforth: remnant) may also bear on whether the split is possible or not. This is generally assumed to follow from the general prohibition of subextraction from a moved phrase, the so-called °freezing principle.

I. Direct objects

The examples in (247a&b) show that direct objects may undergo *wat voor* split, but that the remnant must generally be left-adjacent to the verb(s) in clause-final position, that is, scrambling of the remnant, as in (247b), is excluded as an instantiation of the freezing effect. PP-over-V also gives rise to a degraded result: speakers of Dutch may differ somewhat on their judgments of (247c), but all agree that it is marked compared to (247a).

(247) a. Wat$_i$ heb je   gisteren [t_i voor (een) boeken] gelezen?
          what   have you yesterday   for a books   read
          'What kind of books did you read yesterday?'
      b. *Wat$_i$ heb je [t_i voor (een) boeken]$_j$ gisteren t_j gelezen?
      c. $^{\%}$Wat$_i$ heb je gisteren gelezen [t_i voor (een) boeken]?

The only elements that may intervene between the remnant and the clause-final verb(s) are phrases that compete for the same position: (248a&b) provide examples involving, respectively, a verbal particle, *aan*, and a PP-predicate, *in de kast*. The latter example is perhaps slightly marked, but certainly not ungrammatical. Note in this connection that when °R-extraction has taken place from the PP-predicate, as in (248b′), the result is fully acceptable.

(248) a. Wat$_i$ heb je   de kinderen [t_i voor (een) boeken] aangeraden?
          what have you the children   for a books   prt.-recommended
          'What kind of books did you read aloud to the children?'
      b. $^{(?)}$Wat$_i$ heb   je [t_i voor (een) boeken] in de kast   gezet?
          what have you   for a books   into the bookcase put
          'What kind of books did you put into the bookcase?'
      b′. Wat$_i$ heb   je   *er* [t_i voor (een) boeken] *in*   gezet?
          what have you there for a books   into put
          'What kind of books did you put into it?'

The examples in (249) show that inverting the order of the *wat voor* remnant and the particle or (the stranded preposition of) the PP-predicate gives rise to an ungrammatical result.

(249) a. *Wat$_i$ heb je de kinderen aan [t_i voor (een) boeken] geraden?
      b. *Wat$_i$ heb je in de kast [t_i voor (een) boeken] gezet?
      c. *Wat$_i$ heb je *er in* [t_i voor (een) boeken] gezet?

II. Subjects

The data involving the nominative subject of the clause are more complex than the data involving the direct object. Below, we will show that the *wat voor* split is allowed in passive constructions and clauses involving an °unaccusative verb, provided that the subject occupies its base position and not the (derived) subject

position. When the construction contains a transitive or an intransitive verb, the split only seems to be possible in °expletive constructions.

A. Passive constructions

The nominative subject of a passive clause corresponds to the accusative object of its active counterpart. In Dutch, the subject of a passive clause can occupy two positions: either it occupies the position that is normally taken by the direct object, or it occupies the regular subject position of the clause. This can be demonstrated relatively easily by considering the passive of a ditransitive construction: in (250b), the nominative argument *het boek* follows the indirect object *de kinderen*, which suggests that it occupies the same position as the direct object in the active construction in (250a); in (250c), on the other hand, it precedes the indirect object, which suggests that it occupies the regular subject position.

(250) a.   Gisteren   heeft Jan de kinderen   het boek voorgelezen.
            yesterday has   Jan the children   the book read.aloud
            'Jan read the book aloud to the children yesterday.'
     b.   Gisteren   is   de kinderen het boek   voorgelezen.
            yesterday has.been the children the book   read.aloud
     c.   Gisteren   is   het boek de kinderen voorgelezen.
            yesterday has.been the book the children read.aloud

If the nominative noun phrase in (250b) indeed occupies the same position as the direct object in (250a), it does not come as a surprise that the *wat voor* split of a subject is possible in (251b); after all, the same thing holds for the direct object in (251a). Given that the *wat voor* phrase in (250c) is generally assumed to have been moved into the regular subject position, the freezing principle correctly predicts that the *wat voor* split is impossible in (251c).

(251) a.   Wat$_i$ heeft Jan de kinderen   gisteren [t_i voor een boek] voorgelezen?
            what has   Jan the children   yesterday   for a book   read.aloud
     b.   Wat$_i$ is   de kinderen gisteren [t_i voor een boek] voorgelezen?
            what has.been the children yesterday   for a book   read.aloud
     c.   *Wat$_i$ is   [t_i voor een boek]$_j$ de kinderen gisteren t_j voorgelezen?
            what has.been   for a book   the children yesterday   read.aloud

B. Unaccusative verbs

It has been argued that, just like the subject of a passive construction, the subject of an unaccusative verb is a "derived" subject. Given the discussion of the passive construction in A above, this can be readily shown in the case of dyadic unaccusative verbs. When the nominative argument follows the (dative) object, as in (252a), the *wat voor* split is possible, hence it is plausible to assume that it occupies a position that is comparable to that of a direct object. When it precedes the object, as in (252b), the *wat voor* split is excluded, which suggests the working of the freezing principle; in other words, the subject has been moved from its original position in (252a) into the regular subject position of the clause.

(252) a.   Wat_i zouden hem nou [_{NP} *t*_i voor een boeken] bevallen?
           what would him PRT   for a books   please
           'What kind of books would please him?'
    b.   *Wat_i zouden [_{NP} *t*_i voor een boeken]_j hem nou *t*_j bevallen?

When we are dealing with a monadic unaccusative verb, the *wat voor* split is possible also, but only in the expletive construction. This can be accounted for by assuming that in expletive constructions, the regular subject position is filled by the expletive *er*, so the nominative argument must occupy its base position in (253a). Example (253b) is ungrammatical since *er* must be present when the indefinite subject remains in its base position. Example (253c), finally, is ungrammatical since the nominative argument has been moved into the regular position, and hence invokes a violation of the freezing principle.

(253) a.   Wat_i zijn er   gisteren [_{NP} *t*_i voor mensen] aangekomen?
           what are there yesterday   for people   prt.-arrived
           'What kind of people have arrived yesterday?'
    b.   ^{*?}Wat_i zijn gisteren [_{NP} *t*_i voor mensen] aangekomen?
    c.   *Wat_i zijn [_{NP} *t*_i voor mensen]_j gisteren *t*_j aangekomen?

Note, however, that there is a caveat in order here. In (253) and in the examples below, we abstract away from the fact that expletive *er* can be dropped when certain adverbial phrases are present. A typical example involves the place adverb *daar* 'there' in (254); see Section 8.1.4 for discussion. The fact that the *wat voor* remnant is placed after the adverb *daar* suggests that in this example the indefinite subject also occupies its base position.

(254)   Wat zijn (er) daar voor mensen aangekomen?
        what are there there for people   prt.-arrived
        'What kind of people have arrived there?'

The *wat voor* split can be sensitive to the semantic type of the predicate, especially the distinction between °stage-level and individual-level predicates. Whereas the former often allow the expletive construction, the latter do not due to the fact that they block an existential reading of the subject noun phrase; see Hartmann (2008: §1.4) for a review of the literature. Therefore, it is not surprising that in a copular construction (which is always an unaccusative construction), the adjectival predicate determines whether *wat voor* split is possible or not. A typical stage-level predicate like *beschikbaar* 'available' allows the *wat voor* split whereas an individual-level predicate like *waterdicht* 'waterproof' does not; see Section 5.1.5.1.3, sub I) for exceptions. Example (255b) with *er* is unacceptable because the individual-level predicate *waterdicht* does not license an existential reading of the noun phrase *schoenen* 'shoes' and is therefore not possible in an expletive construction. Finally, (255b′) without *er* is ungrammatical due to the freezing principle.

(255) a.   Wat$_i$ zijn er   [$_{NP}$ t_i voor boeken] beschikbaar.
          what are there   for books   available
          'What kind of books are available?'
   b. *Wat$_i$ zijn er   [$_{NP}$ t_i voor schoenen] waterdicht?
          what are there   for   shoes   waterproof
          'What kind of shoes are waterproof?'
   b′. *Wat$_i$ zijn [$_{NP}$ t_i voor schoenen]$_j$ t_j waterdicht?

C. Intransitive verbs

Den Besten (1985) has claimed that regular intransitive verbs do not allow the *wat voor* split. It seems, however, that this is an overgeneralization. As with monadic unaccusative verbs, the *wat voor* split seems possible when expletive *er* is present; the split in (256a) is at worst slightly marked and certainly gives rise to a much better result than the split in (256b).

(256) a. $^{(?)}$Wat$_i$ hebben er   gisteren [$_{NP}$ t_i voor (een) jongens] gevochten?
          what have   there yesterday   for a boys   fought
          'What kind of boys fought yesterday?'
   b. *Wat$_i$ hebben [$_{NP}$ t_i voor een jongens]$_j$ gisteren t_j gevochten?

The contrast in (256) is not really surprising from the perspective of present-day generative grammar, given that there is a growing body of evidence in favor of the claim that the subject of an intransitive clause is not base-generated directly in the regular subject position, but in some more deeply embedded position. The fact that the nominative argument does not occupy the regular subject position in (256a) is also clear from the fact that it follows the adverbial phrase *gisteren*. If (256b) is indeed derived by moving the subject into the regular subject position of the clause, its unacceptability can be made to follow from the freezing principle.

    Finally, note that it has been suggested that the *wat voor* split is only possible when the clause contains a verb in clause-final position, especially when a modal verb like *zouden* in (257a) is present. Although some difference in acceptability between the examples in (257) can perhaps be detected, we think it would be an overstatement to say that (257a) is perfectly well-formed and that (257c) is completely unacceptable: all examples seem acceptable.

(257) a.   Wat zouden er   hier voor een mensen gewoond hebben?
          what would   there here for a people   lived   have
          'What kind of people would have lived here?'
   b. Wat hebben er   hier voor een mensen gewoond?
          what have   there here for a people   lived
   c. Wat wonen er   hier voor een mensen?
          what live   there here for a people

D. Transitive verbs

What has been said in Subsection C regarding the subject of an intransitive verb also holds for the subject of a transitive clause. Although it has been claimed that the *wat voor* split is excluded for the subject of a transitive verb, this seems an overgeneralization. In (258a), an example is given that seems relatively good.

(258) a. Wat$_i$ hebben er [$_{NP}$ t_i voor een vogels] je voedertafel   bezocht?
      what have   there   for a birds   your feeding table visited
      'What kind of birds have visited your feeding table?'
  b. $^?$Wat$_i$ hebben [$_{NP}$ t_i voor een vogels] je voedertafel bezocht?

Actually, (258b) is much better than might have been expected, as it seems to involve movement and hence should invoke a freezing effect. However, it may be the case that this example is ambiguous, because a definite direct object often makes it possible to drop the expletive *er*. This is shown in (259): example (259a) shows that in most varieties of Dutch the interrogative subject *wie* must be accompanied by the expletive. However, when a definite direct object is present, expletive *er* is preferably dropped; see Section 8.1.4 for more discussion.

(259) a. Wie rookt $^{\%}$(er)?
      who smokes   there
  b. Wie rookt   ($^?$er) de sigaar?
      who smokes there the cigar

So, in order to determine whether (258b) is excluded by the freezing principle, we have to take the placement of adverbs into account: when the subject precedes the adverb, it occupies the regular subject position, and the *wat voor* split is predicted to be impossible; when it follows the adverb, it is probably in its base position, and the *wat voor* split is predicted to be possible. As is shown by (260), the subject may actually occupy either position, so we may indeed conclude that (258b) is ambiguous. The judgments on the two examples are more or less as predicted.

(260) a. $^?$Wat$_i$ hebben gisteren [$_{NP}$ t_i voor een vogels] je voedertafel   bezocht?
      what have   yesterday   for a birds   your feeding.table visited
      'What kid of birds visited your feeding table yesterday?'
  b. *Wat$_i$ hebben [$_{NP}$ t_i voor een vogels]$_j$ gisteren t_j je voedertafel bezocht?

III. Indirect objects

The primed examples in (261) show that *wat voor* split of nominal indirect objects always leads to a degraded result; note that for some speakers, the primeless examples are also somewhat degraded (a prepositional indirect object seems preferred by most speakers).

(261) a. $^{(?)}$Wat voor een meisje heb je   een lolly   gegeven?
      what for a girl   have you a lollipop given
      'To what kind of girl did you give a lollipop?'
  a'. $^{*?}$Wat heb je voor een meisje een lolly gegeven?
  b. $^{(?)}$Wat voor een mensen heb je   je artikel   toegestuurd?
      what kind of people   have you your paper   prt.-sent
      'To what kind of people did you send your paper?'
  b'. $^{*?}$Wat heb je voor een mensen je stuk toegestuurd?

IV. Complements of a preposition

As was shown earlier in (230), repeated here as (262), *wat voor* split of the complement of a preposition is excluded as well due to the fact that subextraction from a nominal complement of a preposition is generally excluded.

(262) a.　[$_{PP}$ Op [$_{NP}$ wat voor een bericht]]　wacht je?
　　　　　　for　　what for a message　　wait you
　　　　'For what kind of message are you waiting?'
　　b.　*Wat$_i$ wacht je [$_{PP}$ op [$_{NP}$ t_i voor een bericht]]?

It is interesting to note that the *wat voor* split differs in this respect from the exclamative *wat*-construction discussed in 1.2.2.1.4. The two (a)-examples in (263) suggest that this construction is similar to the *wat voor* construction: the fact illustrated in (263a) that *wat* and its associated noun phrase may precede the finite verb in clause-initial position suggests that the two form a constituent, and the availability of the split pattern in (263a′) suggests that *wat* can be extracted from this constituent by *wh*-movement. However, this movement analysis of (263a′) runs into problems with (263b): since subextraction from a nominal complement of a preposition is normally excluded, the movement analysis wrongly predicts this example to be ungrammatical.

(263) a.　Wat　een hoop boeken heeft　hij!
　　　　　what　a lot [of] books　has　　he
　　　　'What a lot of books he has!'
　　a′.　Wat heeft hij een hoop boeken!
　　b.　Wat　beschikt　hij [$_{PP}$　over　een hoop boeken]!
　　　　　what　has　　　he　　P　　a lot [of] books
　　　　'What a lot of books he has at his disposal!'

V. Nominal predicates

Wat voor split of a nominal predicate is fully acceptable. This is illustrated in (264).

(264) a.　Wat voor een jongen　is Jan eigenlijk?
　　　　　what for a boy　　　is Jan actually
　　　　'What kind of boy is Jan actually?'
　　b.　Wat is Jan eigenlijk voor een jongen?

4.2.2.3.2.　The status of wat*: parasitic gaps and intervention effects*

In the case of *wat voor* split, movement of *wat* does of course not involve movement of an argument but of a *part* of an argument, viz. the complete *wat voor* phrase. This has several consequences, which are discussed in this section. We start with discussion of so-called parasitic gaps in I, followed by the discussion of several intervention effects in II. Finally, we conclude in III by pointing out a semantic difference between split and unsplit a *wat voor* phrases.

I. Parasitic gaps

When *wat* is an argument in its own right, it may license a so-called °parasitic gap in the infinitival adverbial phrase [*zonder ... te lezen*] in (265a). The complement of

lezen need not be overtly expressed, but can be expressed by a phonetically empty parasitic gap PG, the content of which is identified by the moved *wh*-phrase (which is indicated by means of the subscript "i"). In other words, the interpretation of this example is something like "for which x, Jan threw x away without reading x". As is shown in (265b), a parasitic gap can also be licensed when a *wat voor* phrase is moved into clause-initial position as a whole.

(265) a. Wat$_i$ gooide Jan [zonder PG$_i$ te lezen] t_i weg?
      what threw Jan without   to read   away
      'What did Jan throw away without reading?'

    b. [Wat voor een boek]$_i$ gooide Jan [zonder PG$_i$ te lezen] t_i weg?
      what for a   book threw Jan without   to read   away
      'What kind of book did Jan throw away without reading?'

The N$_1$ *wat* from the *wat voor* phrase, on the other hand, cannot license such a parasitic gap: it can license neither a parasitic gap with the function of direct object of the infinitival verb *lezen* (cf. (266a)), nor a parasitic gap that functions as an N$_1$ in a *wat voor* phrase functioning as the direct object of *lezen* (cf. (266b)). It has been assumed that this is due to the fact that parasitic gaps can be licensed by arguments only.

(266) a. *Wat$_i$ gooide Jan [zonder PG$_i$ te lezen] [t_i voor een boeken] weg?
      what threw Jan without   to read   for a books   away

    b. *Wat$_i$ gooide Jan [zonder [PG$_i$ (voor een tijdschriften)] te lezen]
      what threw Jan without   for a magazines   to read
      [t_i voor een boeken] weg?
        for a books   away

For completeness' sake, note that, according to some speakers, example (267b) is acceptable as well. If this is really the case, this example is a problem for the earlier claim that scrambling induces a freezing effect. Since it is generally assumed that Dutch parasitic gaps must be licensed by a *wh*-moved or a scrambled phrase (cf. Bennis & Hoekstra 1984), it would follow that the *wat voor* phrase in (267b) has been scrambled, and, consequently, a freezing effect is wrongly predicted to arise.

(267) a. [Wat voor een boek]$_i$ gooide Jan [zonder PG$_i$ te lezen] t_i weg?
      what for a   book threw Jan without   to read   away
      'What kind of book did Jan throw away without reading?'

    b. %Wat$_i$ gooide Jan [t_i voor een boek]$_j$ [zonder PG$_j$ te lezen] t_j weg?

In this connection it should also be mentioned that Beermann (1997) claims that, in German, one occurrence of *wat* may bind the gaps in two or more *wat voor* phrases. Example (268) shows that this is not possible in Dutch. In fact, the examples in (268b&c) show that *wat voor* split is degraded anyway in these examples; the only fully acceptable option is to move the full subject into clause-initial position.

(268) a. *Wat$_i$ hebben (er) [t_i voor een meisjes] [t_i voor een jongens] gekust?
      what have there for a girls   for a boys   kissed
      Intended meaning: 'What kind of girls kissed what kind of boys?'
    b. $^{*?}$Wat$_i$ hebben (er) [t_i voor een meisjes] [wat voor een jongens] gekust?
    c. *Wat$_i$ hebben (er) [wat voor een meisjes] [t_i voor een jongens] gekust?
    d. [Wat voor een meisjes]$_i$ hebben t_i [wat voor een jongens] gekust?

II. Intervention effects

The discussion in the previous subsection has shown that the interrogative element *wat* does not function as an argument; it is only the full *wat voor* that acts like that. This subsection will show that this conclusion is supported by the so-called intervention effect. Arguments and non-arguments differ in that the latter are more sensitive to certain intervention effects than the former. As is shown in (269), for example, an interrogative direct object can be moved across the negative adverb *niet*, whereas an interrogative adverbial phrase of manner cannot. Below, we will see that N$_1$ *wat* behaves like a non-argument in the sense that it cannot cross certain adverbs, as a result of which the *wat voor* split is sensitive to the presence of these adverbs.

(269) a. Welke auto heb jij niet gerepareerd?
      which car have you not repaired
      'Which car didn't you repair?'
    b. *Hoe heb jij die auto niet gerepareerd?
      how have you that car not repaired
      '*How didn't you repair that car?'

The examples in (270) show that time and place adverbs like *gisteren* 'yesterday' and *daar* 'there' do not have any effect on the *wat voor* split. The split is possible as long as the remnant follows the adverb.

(270) a. Wat voor een boeken heeft hij gisteren/daar gelezen?
      what for a books has he yesterday/there read
      'What kind of books did he read yesterday/there?'
    b. Wat heeft hij gisteren/daar voor een boeken gelezen?
    c. $^{*?}$Wat heeft hij voor een boeken gisteren/daar gelezen?

The situation is different, however, with manner adverb like *zorgvuldig* 'carefully', modal adverbs like *zeker* 'certainly', frequency adverbs like *vaak* 'often', or the negative adverb *niet* 'not'; the (a)- and (b)-examples in (271) to (273) show that these adverbial phrases allow movement of the complete *wat voor*, but block the *wat voor* split. Perhaps the (b)-examples become slightly better when the *wat voor* remnant precedes the adverbial phrase, as in the (c)-examples, but they still seem to be severely degraded; note that if one were to consider these examples grammatical, a similar problem would arise for the freezing principle, as has been pointed out for (267b).

(271) a.　Wat　voor　een　boeken　heeft　hij　zorgvuldig　gelezen?
　　　　　what　for　a　books　has　he　carefully　read
　　　　　'What kind of books did he read carefully?'
　　b.　*Wat heeft hij zorgvuldig voor een boeken gelezen?
　　c.　$^{??}$Wat heeft hij voor een boeken zorgvuldig gelezen?

(272) a.　Wat　voor　een　boeken　heeft　hij　zeker/vaak　gelezen?
　　　　　what　for　a　books　has　he　certainly/often　read
　　　　　'What kind of books did he certainly/often read?'
　　b.　*Wat heeft hij zeker/vaak voor een boeken gelezen?
　　c.　$^{*?}$Wat heeft hij voor een boeken zeker/vaak gelezen?

(273) a.　Wat　voor　een　boeken　heeft　hij　niet　gelezen?
　　　　　what　for　a　books　has　he　not　read
　　　　　'What kind of books didn't he read?'
　　b.　*Wat heeft hij niet voor een boeken gelezen?
　　c.　$^{*?}$Wat heeft hij voor een boeken niet gelezen?

　　　The examples in (274) show that in the context of long *wh*-extraction, *wat voor* split can also be blocked by negation in the matrix clause. The (a)-examples first show that long *wh*-movement is possible both with the unsplit and the split pattern. The (b)-examples show that, although long *wh*-movement of a *wat voor* phrase across negation is somewhat marked anyway, long *wh*-movement of *wat* in isolation gives rise to a severely degraded result. This suggests again that N$_1$ *wat* resembles adverbial phrases, which cannot be extracted from embedded clauses either when the matrix clause contains negation.

(274) a.　Wat　voor een boeken $_i$ dacht　Jan [dat hij t_i moest lezen]?
　　　　　what　for a books　　thought Jan that he had.to read
　　　　　'What kind of books did Jan think that he had to read?'
　　a′.　$^{(?)}$Wat$_i$ dacht　Jan [dat　hij [t_i voor een boeken]　moest　lezen]?
　　　　　what thought Jan that he　for a books　had.to read
　　b.　$^?$Wat voor een boeken$_i$ wist　Jan niet [dat　hij t_i　moest　lezen]?
　　　　　what for a books　knew Jan not　that he　had.to read
　　　　　'What kind of books didn't Jan know that he had to read?'
　　b′.　*Wat$_i$ wist　Jan niet [dat　hij [t_i voor boeken]　moest　lezen]?
　　　　　what knew Jan not that he　for books　had.to read

III. The wat voor *split and universally and existentially quantified expressions*

Wat voor split may give rise to meaning differences when the sentence contains a universal quantifier like *iedereen* 'everybody'. Consider the examples in (275). Although judgments are apparently not as sharp for all speakers, it seems that the preferred answer to (275a) involves the characterization of one type of book, for instance, a textbook on linguistics: it is a textbook on linguistics that everybody has read. The preferred answer to (275b), on the other hand, involves a so-called pair-list reading: Jan read a textbook on linguistics, Peter a novel, and Marie a study on biochemistry. This difference in meaning is sometimes expressed by assuming that the °scope of the universal operator with respect to the question operator differs in

the two examples: in (275a), the question operator has wide scope, whereas in (275b) it has narrow scope.

(275) a. Wat voor een boek heeft iedereen gelezen?
          what for a book   has   everyone read
          'What kind of book did everyone read?'
      b. Wat heeft iedereen voor een boek gelezen?

The difference between the two examples can be highlighted by modifying the universal quantifier *iedereen* by the adverb *vrijwel* 'nearly', as in (276). This modifier blocks the pair-list reading (due to the fact that it leaves unspecified which entities must be excluded from the answer list), and as we can see in (276b) the *wat voor* split now leads to a severely degraded result. Provided that this is due to semantic anomaly, this clearly shows that only the pair-list reading is available for constructions like (275b) and (276b). It may be the case, however, that (275a) is truly ambiguous and also allows the pair-list reading, but there do not seem to be any syntactic arguments to justify such a view.

(276) a. Wat voor een boek heeft vrijwel iedereen gelezen?
          what for a book   has   nearly everyone read
          'What kind of book did nearly everyone read?'
      b. *?Wat heeft vrijwel iedereen voor een boek gelezen?

     The examples in (277) show that the presence of an indefinite argument with an existential interpretation may also severely hinder the realization of a *wat voor* phrase, either split or unsplit. When the indefinite noun phrase is generic, on the other hand, the result is fully acceptable, as shown in (278).

(277) a. Wat voor een jurk heeft die/*een vrouw gisteren   gedragen?
          what for a dress   has   that/a woman   yesterday worn
          'What kind of dress did that/a woman wear yesterday?'
      a′. Wat heeft die/*een vrouw gisteren voor een jurk gedragen?
      b. Wat voor een lolly heeft Jan dat/*een kind gegeven?
          what for a lollipop has   Jan that/a child   given
          'What kind of lollipop did Jan give to that/a child?'
      b′. Wat heeft Jan dat/*een kind voor een lolly gegeven?

(278) a. Wat voor een kleding draagt een hoogleraar bij zo'n gelegenheid?
          what for a   clothes wears a professor   at such an occasion
          'What kind of clothes does a professor wear at such an occasion?'
      b. Wat draagt een hoogleraar voor een kleding bij zo'n gelegenheid?

Note that the contrast between the examples in (277) and in (278) holds not only for *wat voor* phrases; when we replace the *wat voor* phrase in (277a) by, e.g., the *wh*-phrase *welke jurk* 'which dress' the result is still unacceptable. The unacceptability of the nonspecific indefinite subject DPs in *wh*-questions is due to the fact that it simply does not provide the hearer with sufficient information to answer the question adequately; in order to properly answer a question like (277a), the hearer

must at least be able to establish the identity of the woman involved in the relevant event of wearing a dress.

4.3. Bibliographical notes

Probably the most exhaustive discussion of Dutch binominal, partitive and pseudo-partitive constructions, discussed in Section 4.1, can be found in Vos (1999). More discussion of the quantificational binominal construction can be found in Paardekooper (1952), Putter (1976), Bennis (1978), Van Gestel (1986), and Barbiers (1990). For a discussion of similar constructions in other languages, see Löbel (1986/1989), Bhatt (1990), Delsing (1991), and Alexiadou et al. (2007: Part III, ch.2). More discussion on the partitive and pseudo-partitive constructions can be found in Hoeksema (1984b/1996), Coppen (1991), De Jong (1991) and De Hoop (2003). It is important to repeat here that the notion *pseudo-partitive construction* as used in this chapter differs from the one used in the literature, where it is often used to refer to what we have called quantificational binominal constructions, that is, constructions like *een kop koffie* 'a cup of coffee'.

The discussion of the *N van een N* construction in Section 4.2 is mainly based on Paardekooper (1956), Everaert (1992), and, especially, Den Dikken (1995b) and Bennis et al. (1998). The last two articles are also a major source for the discussion of the *wat voor* construction in Section 4.2.2. Other important studies on this construction are: Bennis (1983/1995), Den Besten (1985), Corver (1990/1991), De Hoop & Kosmeijer (1991), Broekhuis (1992), Aarts (1994), Beermann (1997), Honcoop (1998), and Alexiadou et al. (2007: Part III, ch.).