Syntax of *Dutch*

Nouns and Noun Phrases

VOLUME I

Hans Broekhuis
Evelien Keizer

Syntax of Dutch
Nouns and Noun Phrases
Volume 1

Comprehensive Grammar Resources

Editors:
Henk van Riemsdijk
István Kenesei

Syntax of Dutch
Nouns and Noun Phrases
Volume 1

Hans Broekhuis
Evelien Keizer

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

Amsterdam University Press

Cover design: Studio Jan de Boer, Amsterdam
Layout: Hans Broekhuis

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

Introduction

This chapter will largely be concerned with the most distinctive semantic, morphological and syntactic properties of nouns. Section 1.1 gives a brief characterization of the category of nouns and noun phrases by describing some of their more conspicuous properties. This will help users to identify nouns and noun phrases in Dutch on the basis of their form, function and position in the sentence. Section 1.2 presents a semantic classification of nouns and will describe the way in which the semantic differences are formally expressed.

Like verbs and adjectives, nouns form an open class and, as such, cannot be exhaustively listed. New nominal elements are introduced into the language through derivation, compounding, loaning etc. Sections 1.3 and 1.4 contain a concise discussion of derivation and compounding, which, due to the complexity of these morphological processes, will remain relatively incomplete. The process of nominalization, however, will be discussed more extensively in Sections 2.2.3 and 2.2.4. For a comprehensive overview of Dutch morphology, the reader is referred to Booij (2002), De Haas & Trommelen (1993) and Haeseryn et al. (1997).

1.1. Characterization

This section will give a brief and general characterization of Dutch nouns and noun phrases by means of some of their more conspicuous properties. This list of properties is not exhaustive and the discussion is necessarily sketchy and incomplete. Nevertheless, the information provided will help the reader to identify Dutch noun phrases and to gain some basic insight into their structure and their syntactic behavior. Section 1.1.1 will start by discussing some of the nominal features (number, person and gender), and illustrate their relevance on the basis of the personal and possessive pronouns. This is followed in Section 1.1.2 by a discussion of the internal organization of the noun phrase, and the semantic contribution of its various subparts. Section 1.1.3 concludes by giving a brief overview of the syntactic uses and the semantic functions of the noun phrase in the clause.

1.1.1. Nominal features (number, gender and person)

This section briefly discusses the nominal features number, person and gender. These features play an important role in the description of agreement relations: number and person are relevant for subject-verb agreement; number and gender are relevant for agreement between the noun and its determiner and/or attributive adjectival °modifier(s). Moreover, we will show that all three types of nominal features are relevant for the characterization of the personal and possessive pronouns in Dutch.

I. Number

Noun phrases are normally specified for number. Although some noun phrases are always singular (e.g., noun phrases headed by a substance noun like *water*) or plural (the so-called PLURALIA TANTUM like *de tropen* 'the tropics'), the vast majority of nouns can have either a singular or a plural form. Morphologically speaking,

pluralization is generally signaled by adding one of two endings: the ending *-(e)n* or the ending *–s*. A small number of nouns, like *methode* 'method', can take either ending. A very small group of nouns form their plural by means of the suffix *-eren*. Plural formation is illustrated in example (1).

(1) Plural formation

SUFFIX	SINGULAR	PLURAL
-en	*hond* 'dog'	*honden* 'dogs'
-s	*sleutel* 'key'	*sleutels* 'keys'
-en or *-s*	*methode* 'method'	*methodes/n* 'methods'
-eren	*kind* 'child'	*kinderen* 'children'

The ending is mostly determined by phonological and/or morphological properties of the nominal stem. The ending *-en* (pronounced as schwa in most varieties of Dutch) is by far the most common one, and is generally found after nouns ending in a stressed syllable; the affix *-s*, on the other hand, is generally used after stressed syllables. As a result of this, plural nouns generally end in a trochee, that is a sequence of a stressed and an unstressed syllable; cf. Booij (2002). This means that the majority of monosyllabic nouns like *hond* 'dog' in (2a) as well as the majority of polysyllabic nouns with stress on the final syllable, like *kanón* 'gun' in (2b), take the ending *-en*; nouns like *kánon* 'canon' with penultimate stress, on the other hand, normally take the *-s* ending.

(2)   a.   hONDen 'dogs'
      b.   kanONnen 'guns'
      c.   KAnons 'canons'

There are many exceptional cases, however, which sometimes can be explained by considering the history of the word, but since we do not aim at giving a full description of all the intricacies involved in plural formation, we refer the reader to De Haas & Trommelen (1993: 157ff.) Haeseryn et al. (1997), and Booij (2002: Section 2.2.1) for a complete overview of the rules for pluralization and exceptions to these rules. For a (perhaps somewhat surprising) description of the meaning of the plural morpheme, see Section 5.1.1.1.

II. Gender

Dutch nouns can be feminine, masculine or neuter. As we will see shortly, the distinction between neuter and non-neuter nouns can be readily observed from the syntactic behavior of the nouns. The difference between masculine and feminine nouns, on the other hand, has no syntactic or morphological reflex in Standard Dutch, and can only be observed when the pronoun *hij*/*zij* 'he/she' is used to refer to a previously mentioned noun phrase. It therefore does not come as a surprise that for many speakers, this distinction is more or less neutralized, so that they have to take recourse to a dictionary when they want to make the distinctions (especially in writing, where distinguishing between masculine and feminine nouns is still the norm). Leaving personal pronouns aside, many (if not most) speakers of most

varieties of Dutch actively operate with a binary opposition between [+NEUTER] and [-NEUTER] nouns; see Section 5.2.1.1.5 for more discussion.

The most conspicuous difference between [+NEUTER] and [-NEUTER] nouns is the choice of definite article: singular [+NEUTER] nouns take the definite article *het*, while singular [-NEUTER] (and plural) nouns are preceded by the definite article *de*. For this reason the two types of nouns are often referred to as HET- and DE-nouns, respectively. Gender also affects the form of demonstrative/possessive pronouns, some quantifiers, attributively used adjectives and relative pronouns. Examples are given in Table 1, which also provides references to the sections where more information about these agreement patterns can be found.

Table 1: Gender

	[+NEUTER]	[-NEUTER]	SECTION
DEFINITE ARTICLES	*het boek* the book	*de pen* the pen	5.1
DEMONSTRATIVES	*dit/dat boek* this/that book	*deze/die pen* this/that pen	5.2.3
POSSESSIVE PRONOUNS	*ons boek* our book	*onze pen* our pen	5.2.2
QUANTIFIERS	*elk boek* each book	*elke pen* each pen	6.2
ATTRIBUTIVE ADJECTIVES	*een rood boek* a red book	*een rode pen* a red pen	3.5
RELATIVE PRONOUNS	*het boek dat ik las* the book that I read	*de pen die ik heb gekocht* the pen that I have bought	3.3.2.1

The Dutch determiner system differs from the pronominal system, which still has a three-way distinction between masculine, feminine and neuter gender. This mismatch seems to result in the system of pronominal reference, where syntactic agreement in gender features is gradually replaced by a system in which the choice of the pronoun is determined by semantic factors; cf. Section 5.2.1.1.3. It is further interesting to note that the determiner systems of many Dutch dialects differ from the Standard Dutch one in exhibiting a three-way distinction between; see Cornips & De Vogelaer (2009) and references given there.

III. Person

The person features are relevant for pronouns only, since lexical noun phrases like *het boek* 'the book' and *de man* 'the man' are always third person. Person features can best be described by appealing to notions of discourse, as in (3). FIRST PERSON refers to a set of entities including the speaker (the speaker may of course also exhaust the set). SECOND PERSON refers to a set of entities including the addressee but excluding the speaker: when the speaker is included the first person is used. THIRD PERSON refers to a set of entities excluding both the speaker and the addressee.

(3) a. First person: [+SPEAKER] [±ADDRESSEE]
     b. Second person: [-SPEAKER] [+ADDRESSEE]
     c. Third person: [-SPEAKER] [-ADDRESSEE]

IV. Illustration: personal and possessive pronouns

All nominal features discussed above are relevant for the classification of the personal and possessive pronouns in Dutch. These pronouns have either a singular or a plural form. We also have to distinguish between the three persons. The third person pronouns are further divided into three groups on the basis of gender. This leads to the classification given in Table 2. Note that a complete classification of the personal and possessive pronouns requires more distinctions, but we postpone the discussion of these to Section 5.2, where the pronouns are discussed more extensively.

Table 2: Personal and possessive pronouns

		SINGULAR			PLURAL		
		PERSONAL		POSSES-SIVE	PERSONAL		POSSES-SIVE
		SUBJECT	OBJECT		SUBJECT	OBJECT	
1ST PERSON		*ik*	*mij*	*mijn*	*wij*	*ons*	*ons*
2ND PERSON		*jij*	*jou*	*jouw*	*jullie*	*jullie*	*jullie*
3RD PERSON	MASCULINE	*hij*	*hem*	*zijn*	*zij*	*hen/hun*	*hun*
	FEMININE	*zij*	*haar*	*haar*			
	NEUTER	*het*	*het*	*zijn*			

1.1.2. The internal structure of the noun phrase

This section will discuss the overall internal structure of the noun phrase. We will distinguish two syntactic domains. The first domain, which we will call the NP-domain, is headed by the noun. The second domain is the DP, which is often assumed to be headed by a determiner, quantifier or a numeral. We will discuss these two domains in 1.1.2.1 and 1.1.2.2, respectively. Section 1.1.2.3 is devoted to a brief discussion of non-restrictive modifiers of the noun phrase. This section will be concluded with some remarks on word order restrictions within the noun phrase.

1.1.2.1. The NP-domain

The NP-domain consists of the head noun, its °complement(s) and its restrictive °modifier(s). Leaving irrelevant details aside, the structure of the NP is normally assumed to be as indicated in (4a). A complement occurs right-adjacent to the noun in the form of a PP (unless the noun is a nominal infinitive, in which case the complement may occur in pronominal position as a noun phrase); an example is given in (4b). Restrictive modifiers can be either pre- or postnominal. The prenominal position is normally occupied by an attributive adjective, as illustrated in (4c), whereas the postnominal modifier normally has the form of a PP or a restrictive relative clause. The postnominal modifier normally follows the complement of the noun; we illustrate this with a PP-modifier in (4d).

(4)   a.   [$_{NP}$ AP N complement-PP]

      b.   de [$_{NP}$ vernietiging [$_{COMPL}$ van Rome]]
          the   destruction   of Rome

      c.   een [$_{NP}$[$_{AP}$ erg dik]   boek]
          a   very thick book

      d.   de [$_{NP}$ vernietiging van Rome [$_{PP}$ in 410 A.D.]]
          the   destruction   of Rome   in 410 A.D.

For our present purposes, this brief introduction of the internal structure of the NP suffices. An exhaustive discussion of complementation of the noun can be found in Chapter 2. Modification of the NP is the topic of Chapter 3, and will also be extensively discussed in Chapters A5 and A9.

Semantically speaking, the NP determines the denotation of the complete noun phrase. A noun like *boek* 'book' can be said to denote a set of entities with certain properties. Modification of the noun involves modification of the set denoted by the noun phrase; the NP *erg dik boek* 'very thick book', for example, denotes a subset of the set denoted by *boek*. The NP-domain itself does not encode the fact that noun phrases are normally used as referring expressions; Section 1.1.2.2 will show that this is the semantic function of the elements constituting the DP-domain.

1.1.2.2. The DP-domain

This section will briefly discuss the lexical elements that are found in the DP-domain (the determiners, quantifiers and numerals), characterize the semantic contribution that these elements make, and also introduce the so-called pre-determiners *al* and *heel* that can be used to modify certain determiners.

1.1.2.2.1. Determiners and quantifiers/numerals

In current linguistic theory, determiners, quantifiers and numerals are generally assumed to be external to the NP-domain, and are taken to function as the head of a °projection containing the NP-domain, as in (5).

(5)   [$_{DP}$ ... D ... [$_{NP}$ ... N ...]]

This implies that elements such as a determiner or quantifier are assumed to be the head of the full noun phrase, and it is these elements that determine the referential and/or the quantificational properties of the noun phrase. The determiner slot D can be left empty or be filled by one of the elements in Table 3.

Table 3: Determiners and quantifiers/numerals

ARTICLES	*het boek* the book	*een boek* a book	*∅ boeken* ∅ books
DEMONSTRATIVE PRONOUNS	*dit/dat boek* this/that book	*deze/die pen* this/that pen	*deze/die boeken* these/those books
POSSESSIVE NPs AND PRONOUNS	*Jans/zijn boek* Jan's/his book	*mijn moeders/haar pen* my mother's/her pen	*onze boeken* our books
QUANTIFIERS AND NUMERALS	*veel boeken* many books	*elk boek* every book	*twee boeken* two books

The assumption that articles, demonstratives and possessive pronouns occupy the position D accounts for the fact that these elements are in complementary distribution, since it is generally accepted that a head position of a phrase can be occupied by one head only. This claim has furthermore given rise to the hypothesis that the noun phrase may contain more projections than those identified in (5): DP and NP. This is related to the fact that numerals and some quantifiers can be combined with articles, demonstratives and possessive pronouns. Quantifiers and numerals have therefore been claimed to head the projections QP and/or NumP. Under this hypothesis, an example like *mijn vijf broers* would have the articulated structure in (6).

(6)   [$_{DP}$ mijn [$_{NumP}$ vijf [$_{NP}$ broers]]]

Though questions concerning the number of projections involved are obviously of interest (see Alexiadou et al., 2007: part II, for discussion), the main point to remember here is that determiners and quantifiers/numerals are assumed to be external to the NP, which implies that they have no effect on the denotation of the (modified) noun. Their semantic contribution is restricted to the referential and/or quantificational properties of the noun phrase as a whole. Below, we will briefly illustrate this by means of examples in which the noun phrase acts as the subject of the clause. But before we can do this, we will provide some background by briefly outlining the set-theoretic treatment of the subject-predicate relation, which will be central to our discussion of the denotational properties of the NP.

   Certain aspects of the meaning of a clause can be expressed by means of set theory: an example like *Jan loopt op straat* 'Jan is walking in the street' expresses that the singleton set denoted by the proper noun *Jan* is included in the set denoted by the verb phrase *loopt op straat* 'walks in the street'. More generally, the subject-predicate relation in a clause can be expressed by means of Figure 1, where A represents the set denoted by the NP and B indicates the set denoted by the verb phrase. The intersection $A \cap B$ denotes the set of entities for which the proposition expressed by the clause is claimed to be true.
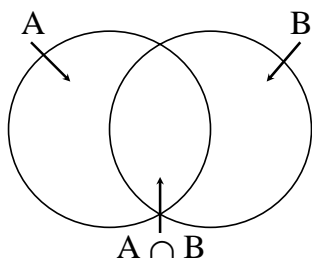
Figure 1: Set-theoretic representation of the subject-predicate relation

In an example like *Jan en Marie wandelen op straat* 'Jan and Marie are walking in the street', it is claimed that the complete set denoted by A, viz. {Jan, Marie}, is included in set B, which is constituted by the people walking in the street. In other words, it expresses that the intersection $(A \cap B)$ exhausts set A so that the remainder of set A is empty: $A - (A \cap B) = \varnothing$. The semantic function of determiners and quantifiers/numerals is to specify the intersection $A \cap B$ and the

remainder of A - (A ∩ B). Here we will informally describe this for some determiners and quantifiers/numerals. A more exhaustive and formal description can be found in Chapter 6.

The definite article *de/het* in (7) expresses that in the domain of discourse all entities that satisfy the description of the NP are included in the intersection A ∩ B, that is, that A - (A ∩ B) = ∅. The singular noun phrase *de jongen* 'the boy' in (7a) has therefore approximately the same interpretation as the proper noun *Jan* in the discussion above; it expresses that the cardinality of A ∩ B is 1 (for this we will use the notation: |A ∩ B| = 1). The plural example in (7) differs from the singular example only in that it expresses that |A ∩ B| > 1.

(7) a. De jongen loopt   op straat.
         the boy   walks in the.street
     b. De jongens lopen op straat.
         the boys   walk in the.street

The meaning of a definite demonstrative pronoun like *deze* 'this/these' and *die* 'that/these' or a possessive pronoun like *mijn* is similar to that of the definite article, the only difference being that these determiners effect a partitioning of the set denoted by A, and claim that one of the resulting subsets is properly included in B.

The semantic contribution of the indefinite articles in (8a&b) is to indicate that A ∩ B is not empty, but they do not imply anything about the set A - (A ∩ B); the latter may or may not be empty (the other boys included in set A may all be in school). The difference between the singular indefinite article *een* and the (phonetically empty) plural indefinite article ∅ is that the former expresses that |A ∩ B| = 1, whereas the latter expresses that the cardinality can be larger than 1. At least semantically speaking, the cardinal numerals belong to the same class as the plural indefinite article; an example such as (8c) is similar in all respects to (8b) apart from the fact that it expresses that |A ∩ B| = 2.

(8) a. Er   loopt   een jongen op straat.
         there walks a boy   in the.street
         'A boy   is walking in the street.'
     b. Er   lopen ∅ jongens op straat.
         there walk   boys   in the.street
         'Boys are walking in the street.'
     c. Er   lopen twee jongens op straat.
         there walk two boys   in the.street
         'Two boys are walking in the street.'

The semantic contribution of quantifiers like *enkele* 'some', *veel* 'many' and *weinig* 'few' can be described in similar terms. The main difference is that the cardinality of the set A ∩ B is somewhat vaguer: an example like (9a) expresses more or less the same as (8b), but in addition the use of *enkele* suggests that the cardinality of A ∩ B is lower than some implicitly assumed norm "c": 1 < |A ∩ B| < c. The interpretation of the quantifiers *veel* and *weinig* also seems to depend on some implicitly assumed norm: *veel* expresses that |A ∩ B| > c′ and

weinig that $|A \cap B| < c''$. In the case of *enkele* in (9a), the implicit norm c seems more or less fixed; the cardinality of the set of boys walking in the street will never be higher than, say, eight or nine. In the case of *veel* and *weinig*, on the other hand, the implicitly assumed norm is contextually determined: a hundred visitors may count as many at a vernissage but as few at a concert of the Rolling Stones. Note further that, as in the case of the indefinite articles and numerals, the examples in (9) do not imply anything about the set A - (A $\cap$ B).

(9)   a.   Er   lopen enkele jongens op straat.
             there walk some boys   in the.street
             'Some boys are walking in the street.'
      b.   Er   lopen veel/weinig jongens op straat.
             there walk many/few boys   in the.street
             'Many/few boys are walking in the street.'

When we combine a definite determiner and a numeral/quantifier the meanings of the two are combined. An example such as (10a) expresses that $|A \cap B| = 2$, which can be seen as the semantic contribution of the numeral *twee* 'two', and that A - (A $\cap$ B) = $\varnothing$, which can be seen as the semantic contribution of the definite article *de*. Similarly, (10b) expresses that $|A \cap B| > c$, which is the contribution of the quantifier, and that A - (A $\cap$ B) = $\varnothing$, which is the contribution of the definite article *de*.

(10) a.   De twee jongens wandelen op straat.
           the two boys   walk   in the.street
      b.   De vele jongens wandelen op straat.
           the two boys   walk   in the.street

1.1.2.2.2. Pre-determiners

Special attention must be paid to a set of expressions that are often referred to as PRE-DETERMINERS. These expressions are quantifiers that may appear in a position left-adjacent to the determiners. Some examples are given in (11), where the determiners *mijn* 'my' and *de* 'the' in the determiner position are preceded by the pre-determiners *al* 'all' and *heel* 'whole/all of the'. The semantics of these pre-determiners is extremely complex. Therefore, we will not discuss these elements here, but refer the reader to the extensive discussion in Chapter 7.

(11) a.   al mijn boeken
           all my   books
      b.   heel   de taart
           whole the cake
           'all of the cake'

1.1.2.3. Non-restrictive modifiers

Some examples of non-restrictive modification are given in (12): non-restrictive modifiers typically take the form of non-restrictive relative clauses, as in (12a), but they can occasionally also be adjectival or nominal in nature, as in (12b&c).

Semantically speaking, non-restrictive modifiers are outside both NP and DP, and contain material that falls outside the °scope of the noun and determiner: non-restrictive modifiers neither affect the denotation of the NP nor the referential or quantificational properties of the noun phrase as a whole, but just provide additional information about the referent of the noun phrase. Syntactically speaking, however, the non-restrictive modifiers in (12) clearly belong to the noun phrase, since they occupy the clause-initial position together with the DP (the °constituency test).

(12) a. Het boek, dat ik graag wilde   hebben, was net uitverkocht.
         the book   that I   gladly wanted have   was just sold.out
         'The book, which I very much wanted to have, was just sold out.'
    b. De man, boos over zijn behandeling, diende   een klacht in.
         the man angry about his treatment   deposited a complaint prt.
         'The man, who was angry about his treatment, deposited a complaint.'
    c. Het boek, een eerste druk van *Karakter*, werd verkocht voor €10,000.
         the book   a first edition of *Karakter*   was   sold   for €10,000

1.1.2.4. Order of elements within the noun phrase

The previous sections have shown that the structure of the noun phrase is more or less as indicated in (13a). Putting certain co-occurrence restrictions and special intonation patterns aside for the moment, this structure allows us to provide a descriptively adequate account for the main word order patterns found within the noun phrase. For example, (13a) predicts that the determiners always precede the noun and its adjectival premodifiers and that the determiner can only be preceded by the pre-determiners *al* and *heel*, that is, that a numeral or quantifier must follow the determiner (if present). In other words, the structure in (13a) correctly predicts that there are no alternative realizations of the prenominal string *al de vier aardige N* in example (13b). Similarly, it predicts that an example like (13b) has no alternative word order pattern for the post-nominal PPs: the PP *van de Verenigde Staten* is the complement of the deverbal noun *vertegenwoordiger*, and is hence expected to precede the PP-modifier *uit New York*.

(13) a. [$_{DP}$ al/heel D [$_{NumP/QP}$ Num/Q [$_{NP}$ A N complement]]] non-restr. modifiers
    b. al de vier aardige vertegenwoordigers van de VS uit New York
         all the four nice   representatives   of the US from New York

There are, however, various complicating factors. Consider, for instance, the examples in (14) involving the deverbal noun *behandeling* 'treatment'. The noun phrase *Jan* in (14a) can be considered a complement of the head noun, just as it would be a complement of the verb *behandelen* 'to treat' in the clause *De dokter behandelt Jan in het ziekenhuis* 'The doctor is treating Jan in hospital'. Example (14b) shows, however, that the noun phrase *Jan* can also be realized as a genitive noun phrase, in which case it precedes the noun *behandeling* and the attributive adjective *langdurig* 'protracted'. In order to account for this, it is generally assumed that the complement of a noun can also be realized as a genitive noun phrase, which is placed in the determiner position (just like possessive pronouns). For completeness' sake, note that Section 5.2.2.5.1 will show that (in contrast to

English) Dutch exhibits severe restrictions on the noun phrase types that may occur as genitive noun phrases.

(14) a. de langdurige behandeling   van Jan in het ziekenhuis
          the protracted treatment   of Jan   in the hospital
      b. Jans langdurige behandeling in het ziekenhuis
          Jan's protracted treatment   in the hospital

Another complication is that the complements of nominal infinitives may also occur in the form of a noun phrase in prenominal position. Still, example (15a) shows that the unmarked position of the complement is after the attributive adjectives, so that we can simply assume that, like the postnominal PP-complements, the pre-nominal nominal complements must be closer to the head noun than the modifiers.

(15) a. Het gebruikelijke tomaten gooien   bleef   niet uit.
          the customary   tomatoes throwing remained not prt.
          'The customary throwing of tomatoes followed.'
      b. *Het tomaten gebruikelijke gooien bleef niet uit.

For a more detailed discussion of complementation and modification, and of the problems concerning word order within noun phrases, see Chapter 2 and Chapter 3.

1.1.3. Syntactic uses and semantic functions of the noun phrase

This section briefly illustrates the semantic and syntactic functions of the noun phrase. Although noun phrases are prototypically used as arguments, they can also be used predicatively or adverbially. The discussion here will remain sketchy and incomplete, and the reader is referred to Chapter 8 for more details and discussion.

I. Argument

Prototypically, a noun phrase is used as an argument. Although noun phrases may also act as the argument of an adjective or an adposition, the discussion here will be confined to their function as argument of the verb. The fact that noun phrases can be used as arguments is related to the fact that they are typically used to refer to (possibly singleton) sets of entities. As pointed out in 1.1.2, the NP part of the noun phrase provides the descriptive information needed for identifying the set of entities in question, and the DP part determines the referential or quantificational properties of the noun phrase as a whole. These sets of entities function as participants in the state of affairs denoted by the verb; they are assigned the °thematic roles of agents, themes, recipients, benefactives etc. by the verb.

Some examples are given in (16). In the intransitive construction in (16a), the only participant, Jan, performs the action of working and is thus assigned the semantic function of agent. In the transitive construction in (16b), *Jan* is assigned the same semantic role, but now a second entity is involved, a book, which undergoes the action of buying and is called the theme. In (16c&d), there is a third participant in the state of affairs: in (16c) this third participant, the one receiving the theme entity, functions as the recipient; in (16d), the state of affairs is performed on behalf of a particular entity, which is assigned the role of benefactive. In example

(16e) we find a construction with an °unaccusative verb; in such constructions the only participant, Jan, receives the semantic function of theme.

(16) a. Jan$_{Agent}$ werkt hard. [intransitive verb]
   Jan works hard

b. Jan$_{Agent}$ koopt een boek$_{Theme}$. [transitive verb]
   Jan buys a book

c. Jan$_{Agent}$ geeft het boek$_{Theme}$ aan Marie$_{Recipient}$. [ditransitive verb]
   Jan gives the book to Marie

d. Jan$_{Agent}$ koopt een boek$_{Theme}$ voor Marie$_{Benificiary}$. [ditransitive verb]
   Jan buys a book for Marie

e. Jan$_{Theme}$ komt altijd te laat. [unaccusative verb]
   Jan comes always too late
   'Jan is always late.'

The semantic roles are often associated with a particular syntactic function in the clause. The agent is generally the subject of an active clause (16a-d), the theme is typically realized as the direct object (16b-d), and the recipient and benefactive are generally realized as indirect objects (16c&d). It is however certainly not the case that there is a one-to-one mapping between semantic role and syntactic function; for instance, in the case of an unaccusative verb, the theme is realized as the subject (16e), and not as the expected direct object. Since it is neither our aim to give an exhaustive overview in this section of the semantic roles that can be assigned to noun phrases, nor to discuss how these roles can be realized syntactically, we refer the reader to Chapter V2 for more detailed discussion of verb types and the semantic roles they may assign.

II. Predicative use of the noun phrase

Although typically used as arguments, noun phrases also function as predicates, in which case the noun phrase is not used to refer to an entity or a set of entities but to predicate a property of some other noun phrase. Typical cases are found in copular and *vinden*-constructions, illustrated in (17a&b). In these examples, the noun phrase *Jan* is the °logical SUBJECT of the predicatively used noun phrase *een aardige jongen*: *Jan* is referential, *een aardige jongen* is not. The predicative relationship between the two noun phrases is syntactically reflected by the fact that they must agree in number, as is shown by the primed examples; see Section 8.2.2 for one exception to this agreement requirement.

(17) a. Jan is een aardige jongen.
   Jan is a nice boy

a′. [Jan en Peter]$_{pl}$ zijn [aardige jongens]$_{pl}$
   Jan and Peter are nice boys

b. Ik vind Jan een aardige jongen.
   I consider Jan a nice boy

b′. Ik vind [Jan en Peter]$_{pl}$ [aardige jongens]$_{pl}$.
   I consider Jan en Peter nice boys

III. Adverbial use of noun phrases

A small number of noun phrases can be used as adverbial phrases modifying the clause. These noun phrases include head nouns that have a temporal denotation, as in examples (18a&b), or that can be used to indicate a period of time, as in example (18c). More or less the same meaning can be conveyed by a PP introduced by *gedurende* 'during'.

(18) a. Marie heeft (gedurende) deze week hard gewerkt.
        Marie has   during   this week hard worked
        'Marie (has) worked hard this week.'
    b. Peter woont (gedurende) het hele jaar   in Zuid-Frankrijk.
        Peter lives   during   the whole year in South-France
        'Peter lives in the South of France throughout the year.'
    c. Jan heeft (gedurende) de hele reis   zitten slapen.
        Jan has   during   the whole journey sit   sleeping
        'Jan slept throughout the journey.'

However, there are a number of subtle meaning differences between constructions with an °adjunct DP and a PP introduced by *gedurende*. Apart from the fact that the latter is more formal, use of the adjunct DP *deze week* seems to suggest that Marie has been working hard all week; use of the PP *gedurende deze week* does not trigger this interpretation (even making it implausible). Furthermore, the period of time referred to may vary. In (18a), the DP *deze week* refers to the span of time stretching from Monday to Sunday directly preceding or including the speech time, whereas in the case of the PP *gedurende deze week* reference can also be made to a particular week in the past. Observe that the choice of the demonstrative plays a role here as well: when the proximate demonstrative *deze* 'this' is replaced by the distal demonstrative *die* 'that', the second meaning difference is lost, with both phrases referring then to a particular week in the past (or the future).

1.2. Classification

This section provides a semantic classification of nouns on the basis of the kind of entity they denote. Typically, the semantic differences between the noun classes that we will distinguish are also reflected in their syntactic and morphological properties. Although there seem to be as many different typologies of Dutch nouns as there are grammatical descriptions, there nevertheless are a number of distinctions that are more or less generally accepted. In traditional grammar, the distinctions in (19a-c) have generally been used for classifying nouns; cf. Haeseryn et al. (1997: 140ff). More recently, theory-specific approaches like Dik's (1997) Functional Grammar and Lexical Functional Grammar have added the distinctions in (19d-e). Unfortunately, the relation(s) between these various distinctions is not always clear: some are complementary, some overlap, whereas others operate independently. In what follows, we will describe the distinctions in (19) in some detail in an attempt to clarify the relations between them. In addition, examples will be given of non-prototypical uses of the various noun types, that is, of the ways in which nouns belonging to one category can be used, semantically as well as syntactically, as though they belonged to another category.

(19) a. Proper and common (or descriptive) nouns
     b. Concrete and abstract nouns
     c. Mass, count and collective nouns
     d. Nouns denoting states of affairs, propositions, speech acts and properties
     e. Relational and non-relational nouns

This section presents a classification that includes all five distinctions in (19) but reduces them to three partly overlapping, but nevertheless independent, main categories. The discussion is structured as follows. Section 1.2.1 starts with a discussion of the differences between proper nouns, such as *Jan* and *De Alpen* 'The Alps', and common nouns, such as *jongen* 'boy' and *berg* 'mountain'. In Section 1.2.2, common nouns will be divided into concrete and abstract nouns, which will each in their turn be divided into several other subclasses, as shown in Table 4. The table also shows that some of the resulting subclasses will be further divided into subcategories.

Table 4: Classification of common nouns

CONCRETE NOUNS	substance nouns		*water* 'water'
	individual nouns		*auto* 'car'
	mass nouns		*vee* 'cattle'
	collective nouns		*kudde* 'flock'
ABSTRACT NOUNS	state-of-affairs nouns	actions	*verwoesting* 'destruction'
		processes	*val* 'fall'
		positions	(*het*) *wonen* 'living'
		states	*verblijf* 'stay'
	proposition nouns		*geloof* 'belief'
	speech-act nouns		*vraag* 'question'
	property nouns	physical	*hoogte* 'height'
		mental	*geduld* 'patience'
	emotion nouns		*haat* 'hatred'

Section 1.2.3, finally, discusses the differences between relational nouns like *vader* 'father' versus non-relational nouns like *jongen* 'boy'. Chapter 2 will discuss in more detail the differences between the classes distinguished above with regard to complementation within the NP.

1.2.1. *Proper nouns*

We start the discussion of the typology of nouns with what appears to be the most basic distinction: that between proper nouns and common nouns. Common nouns are nouns with descriptive content or meaning in the sense that they denote entities by providing an appropriate description of the entities. Syntactically, common nouns constitute the head of a noun phrase: they are preceded by a determiner (an article, demonstrative or possessive pronoun, etc.), they may be modified by adjectives or postnominal adjuncts and they may take one or more complements. Proper nouns like *Jan*, on the other hand, have little or no descriptive content. Typically, they form noun phrases all by themselves and lack modifiers and complements.

(20) Difference between proper nouns and common nouns

	PROPER NOUNS	COMMON NOUNS
HAVE DESCRIPTIVE CONTENT	—	+
CAN BE PRECEDED BY A DETERMINER	—	+
CAN BE MODIFIED	—	+
MAY TAKE COMPLEMENTS	—	+

This section will be mainly devoted to a discussion of the class of proper nouns: Sections 1.2.1.1 and 1.2.1.2 will discuss, respectively, their semantic syntactic properties.

1.2.1.1. Semantic properties

Proper nouns can refer to both concrete and abstract entities. Some obvious examples are given in (21), which simply provides some examples and is certainly not intended as an exhaustive classification.

(21) Types of proper nouns (not exhaustive)

TYPE	NAME OF	EXAMPLE
Concrete	persons, animals and brands	*Jan*, *Flipper*, *Heineken*
	cities and countries, etc.	*Amsterdam*, *België* 'Belgium' *De Verenigde Staten* 'the United States'
	buildings, restaurants, etc.	*de Westertoren*, *Villa des Roses*
	books, paintings, etc.	*Karakter* (novel by Bordewijk) *De aardappeleters* (by Van Gogh)
Abstract	historic events	*de Franse Revolutie* 'the French Revolution'
	historical and geological periods	*de Renaissance* 'the Renaissance' *het Quartair* 'the Quaternary'
	theories and ideologies	*Relativiteitstheorie* 'Theory of Relativity' *Communisme* 'Communism'
	days, months, etc.	*maandag* 'Monday', *januari* 'January', *Pasen* 'Easter'

Semantically, these proper nouns are characterized by the fact that they normally contain little or no descriptive content; they can be said to have no denotation, only reference. In other words, whereas common nouns enable the addressee to pick out the intended referent (set) by means of the descriptive content of the noun, proper nouns normally do not have such descriptive content (they do not denote a set with the property mentioned). As a result, proper nouns will normally not be translatable; the English rendering of Dutch *Jan* is just *Jan* (and not *John* or something of the sort), although there are many exceptions to this general rule. For example, *de Franse Revolutie* 'the French Revolution' does have descriptive content and can, indeed, be translated. The same thing holds for geographical names that have descriptive content: *het Zwarte Woud* 'the Black Forest', *de Dode Zee* 'the Dead Sea' and *de Verenigde Staten* 'the United States'. Note that many other geographical names have their own form in different languages (e.g., *Duitsland*

'Germany', *Noorwegen* 'Norway'), but these, obviously, are not true instances of translation.

Let us compare common nouns and proper nouns to clarify matters. The noun phrase *de aansteker* 'the lighter' in (22a) has denotation as well as reference: its head noun, *aansteker* 'lighter', denotes the set of things with the particular property of being a lighter; the noun phrase *de aansteker* as a whole refers to a unique entity (in the given context) which is identifiable on account of this description. The noun *Jan* in (22b), on the other hand, lacks a denotation: it has no meaning and does not denote a set of entities by providing an appropriate description of these entities. It does, however, have (unique) reference: the proper noun by itself is sufficiently informative (in the given context) for any addressee to identify the person referred to.

(22) a. Mag ik de aansteker, alsjeblieft?
          may I the lighter   please
          'Can I have the lighter, please?'
      b. Heb jij Jan nog gezien?
          have you Jan yet seen
          'Have you seen Jan (lately)?'

In essence, what distinguishes proper nouns from common nouns is that the former by definition "uniquely identify" their referent: when using a proper noun, the speaker assumes that the addressee will be able to pick out the intended referent without any need for further description.

1.2.1.2. Syntactic properties

Section 1.2.1.2.1 will show that, with regard to syntactic behavior, proper nouns behave differently from common nouns in a number of ways. As will be discussed in Section 1.2.1.2.2, however, there are cases in which proper nouns can be used as regular common nouns. Conversely, there are also cases in which common nouns are used as proper nouns, and these cases are discussed in Section 1.2.1.2.3.

1.2.1.2.1. Proper nouns: prototypical and non-prototypical use

Proper nouns behave differently from common nouns in a number of ways. These differences are largely due to the fact that proper nouns, in their prototypical use, have unique reference. In what follows we will first describe this prototypical use and the consequences with regard to modification and determination. This is followed by a discussion of more exceptional cases.

I. Prototypical use

In their prototypical use, proper nouns exhibit a number of typical restrictions with respect to pluralization, restrictive modification, and the selection of determiners. These restrictions can all be related to the fact that, in its prototypical use, a proper noun has unique reference: this makes the addition of restrictive modifiers superfluous and the addition of a determiner and pluralization impossible.

A. Pluralization

The primeless examples in (23) show that proper nouns cannot be pluralized, except when the proper noun phrase itself is formally plural. Example (23b′) shows that in the latter case the singular will not be available (at least not as a proper noun).

(23) a. *de Jannen/de Maries
      b. de Alpen/de Verenigde Staten
          the Alps/the United States
      b′. een #Alp/Verenigde Staat

B. Restrictive modification

The (a)-examples in (24) show that proper nouns do not allow any form of modification aimed at restricting the number of potential referents: (24a) is acceptable but only when the attributive adjective is used non-restrictively, that is, provides additional information about the referent of the noun phrase; (24a′) becomes acceptable when the relative clause is preceded by an intonation break, which is the landmark of the non-restrictive use of such clauses. Example (24b) shows that if the proper noun itself contains a (restrictive) modifier, this cannot be omitted without the noun phrase losing its status of proper noun.

(24) a. #de hoge Westertoren
          the high Westertoren
      a′. *De Westertoren die hoog is.
          the Westertoren that high is
      b. de #(Franse) Revolutie
          the French Revolution

C. Determiners

Unlike common nouns, proper nouns typically are not acceptable with an article, except in those cases where the article can be regarded as part of the name (sometimes spelt with a capital: *De Volkskrant*). Proper nouns similarly fail to co-occur with demonstrative pronouns or with other determiners. These restrictions are illustrated in (25).

(25) a. (*de/*die) Jan/Marie
      b. het Zwarte Woud
          the Black   Forest
      b′. *dit/dat   Zwarte Woud
          this/that Black   Forest

It must be noted, however, that in certain southern dialects of Dutch, use of the definite article or a possessive pronoun *is* acceptable with proper nouns referring to persons: *de/onze Jan*.

II. Non-prototypical use

There are numerous occasions where proper nouns exhibit deviant behavior, that is, in which they can be pluralized, or in which they are compatible with determiners and with modifiers. This is generally the result of failure of the proper noun to refer

uniquely within the given context. A more detailed discussion of these non-prototypical uses of the proper nouns can be found in Section 5.1.2.1 and (to a lesser extent) in Section 5.2.3.2.

A. Pluralization

The differences in syntactic behavior between common nouns and proper nouns can be accounted for by the fact that proper nouns are supposed to refer "uniquely" within a given context, providing the addressee with sufficient information to identify the intended referent. When the proper noun fails in this respect, as in the examples in (26), pluralization becomes possible.

(26) a. Er   zitten drie Barten bij mij in de klas.
        there sit   three Barts with me in the class
        'There are three Barts in my class.'
    b. De twee Duitslanden zijn voorgoed   verenigd.
        the two Germanies   are permanently united
        'The two Germanies have been united permanently.'

B. Restrictive modification

Whenever a modifier is present, it forces a reading in which there is more than one accessible referent which can be referred to by the same proper noun. This shows that adding modifiers becomes acceptable when unique identification is not possible on the basis of the proper noun alone. This is shown in the examples in (27).

(27) a. Wie bedoel je?   Kleine Bob of grote Bob?
        who mean you   Little Bob or big Bob
        'Who do you mean? Little Bob or big Bob?'
    b. de Zwitserse Alpen
        the Swiss   Alps
    c. Hij komt de woensdag   na Pasen.
        he   comes the Wednesday after Easter
        'He's coming the Wednesday after Easter.'

C. Determiners

The examples in (28) contain the proper nouns *Jansen* and *Italië*, which normally do not occur with an article, and show that restrictive modification triggers the addition of a determiner: singular proper nouns denoting an animate object co-occur with a non-neuter determiner like the article *de* in (28a), whereas singular proper nouns denoting a geographical name take a neuter determiner like the article *het* in (28b).

(28) a. De Jansen die ik ken   woont in Den Haag.
        the Jansen that I know lives   in Den Haag
    b. het Italië uit de middeleeuwen
        the Italy   from the Middle Ages
        'Italy in the Middle Ages'

When an article is used in combination with proper nouns that themselves already include a definite article, like *De Volkskrant* in the (a)-examples in (29), the latter is typically left out. This does not hold, however, when the article is an old case form like *den* in example (29b), which suggests that present-day speakers no longer recognize these elements as articles.

(29) a. Heb jij   de (*De) Volkskrant van gisteren gelezen?
         have you the De   Volkskrant of yesterday read
         'Did you read yesterday's Volkskrant?'
     a′. Heb jij   vandaag al   een (*De) Volkskrant gekocht?
         have you today   already a   De   Volkskrant bought
         'Did you buy a Volkskrant today?'
     b. Het Den Haag uit mijn jeugd   was een prachtige stad.
        the The Hague from my childhood was a wonderful town
        'The The Hague of my childhood was a wonderful town.'

As illustrated in example (27c), the names of the days of the week can also be used in combination with the definite article and an identifying modifier. When we are referring to a particular day close to the moment of speech, the determiner is normally left out, even when the noun is modified. However, when the intended day is more remote, the definite article is normally used. This is shown in (30).

(30) a. Hij is (afgelopen) woensdag hier geweest.
        he is last Wednesday   here been
        'He has been here on Wednesday.'
     b. Hij komt komende woensdag hier.
        he comes next Wednesday   here
        'He will come here next Wednesday.'
     c. Hij komt de (tweede) woensdag voor/na Pasen   hier.
        he comes the second Wednesday before/after Easter here
        'He will come here the (second) Wednesday before/after Easter.'

The indefinite article is also possible, indicating a specific but not further identified, or a nonspecific, Wednesday, as in (31a) and (31b), respectively.

(31) a. Hij is   op een woensdag gekomen.
        he has on a Wednesday   come
        'He came on a Wednesday.'
     b. Hij wil   op een woensdag komen (maakt niet uit welke).
        he wants on a Wednesday   come   matters not prt. which
        'He wants to come on a Wednesday (doesn't matter which one).'

Proper nouns referring to seasons and names of the months are more restricted with respect to the determiner. The examples in (32) show that the names of the seasons must be preceded by a definite determiner, regardless of whether a restrictive modifier is present or not.

(32) a.   Zij is in de herfst   (van 1963) geboren.
          she is in the autumn   of 1963   born
     b.   *Zij is in herfst   (van 1963) geboren.
          she is in autumn   of 1963   born

The examples in (33), on the other hand, show that the names of the months cannot be preceded by a definite determiner, again regardless of whether a restrictive modifier is present or not. Note that, for one reason or another, it is not possible to modify the names of months by means of a PP like *van 1963*; either the proper noun is immediately followed by the year or (more formally) by the PP *van het jaar 1963*.

(33) a.   Zij is in januari (1963/*van 1963/van het jaar 1963) geboren.
          she is in January 1963/of 1963/of the year 1963)   born
     b.   *Zij is in de januari   (1963/van 1963/van het jaar 1963) geboren.
          she is in the January   1963/of 1963/of the year 1963   born

The examples in (34) show that neither the names of seasons nor the names of months can be preceded by an indefinite article, again regardless of whether a restrictive modifier is present or not.

(34) a.   *Zij is in een herfst   (tussen 1963 en 1965)   geboren.
          she is in the autumn   between 1963 and 1965   born
     b.   *?Zij is in een januari (tussen 1963 en 1965)   geboren.
          she is in a January   between 1963 and 1965   born

Finally, proper nouns can co-occur with the demonstrative determiner *die* in the informal expressions given in example (35), which are used to express surprise, usually combined with a touch of admiration ("who would have thought it!") or commiseration ("poor fellow/girl"). Note that *die* is the only form available, even when it precedes a [+NEUTER] noun like the diminutive in (35b); see Section 5.2.3.2.2, sub V, for more discussion.

(35) a.   Die Jan toch!
          that Jan PART
     b.   Die Marietje toch!
          that Marie$_{dim}$ PART

1.2.1.2.2. Proper nouns used as common nouns

Proper nouns often shift in the direction of a regular common noun. This is a very frequent phenomenon with the names of artists (painter, sculptor, author, designer), in which case the noun can be used to refer to work by the particular artist; this may involve a specific creation of the artist, as in (36a), in which case the noun behaves as a count noun, or to the work of the artist in general, as in (36b), in which case we are dealing with a mass noun. As shown in example (36c), the name of an artistic school can refer to the creations/artistic objects produced by this school; in this case the noun exhibits the behavior of a mass noun.

(36) a. Ik heb een Van Gogh/twee van Goghs gezien.
          I have a Van Gogh/two Van Goghs   seen
          'I have seen a Van Gogh/two Van Goghs.'
     b. Hij leest veel Vondel.
          he reads much Vondel
          'He reads a lot of Vondel.'
     c. Hij heeft heel wat Art Deco   in huis.
          he has   quite some Art Deco in house
          'He has quite a lot of Art Deco in his house.'

The names of well-known brands are often used to refer to specific products. The noun phrase *een Heineken* in example (37), for example, can be used to refer to a glass of beer of that particular brand. Other well-known examples include *een Miele* (a washing machine), *een Batavus* (a bicycle), *een Renault* (a car), and *een Kleenex* (a paper tissue).

(37)   Geeft u   mij maar een Heineken.
          give you me   PRT   a Heineken
          'Can I have a Heineken?'

In some cases, the use of the brand name becomes more common than the use of the common noun denoting the product. This may result in substituting the brand name for the common noun denoting the product: for example, the brand names *Aspirine* and *Spa* are often used to refer to, respectively, pain-killers and mineral water in general, so that the examples in (38) have actually become ambiguous.

(38) a. Mag ik een aspirientje?
          can I   an aspirin
          'Can I have an Aspirine/a painkiller?'
     b. Een Spa, graag!
          one Spa   please
          'One Spa/mineral water, please!'

1.2.1.2.3. Common nouns used as proper nouns

The examples in (39) illustrate the use of common nouns as proper nouns, which is restricted to nouns referring to members of the family (*vader* 'father', *moeder* 'mother', *oom* 'uncle', *zus* 'sister/sis') or to uniquely identifiable and well-respected members of the community (*dominee* 'vicar', *dokter* 'doctor', *meester* 'teacher'). This use of common nouns tends to be regarded as rather old-fashioned.

(39) a. Heb je het al   aan vader gevraagd?
          have you it already to father asked
          'Have you asked father?'
     b. Dokter heeft gezegd dat ...
          doctor has   said   that

1.2.2. *Common nouns*

This section provides a classification of the common nouns. The basic semantic distinction to be made is that between CONCRETE and ABSTRACT NOUNS (which can also be made in the case of the proper nouns; cf. (21)). Concrete nouns are usually defined as nouns denoting objects that are "tangible" (that one can see or take hold of), whereas abstract nouns denote "non-tangible" entities such as processes, phenomena, emotions, properties, etc. As a result, some classifications include nouns like *geur* 'smell' and *geluid* 'sound' in the set of abstract nouns, but we will not follow this; in the classification presented here, concrete nouns will be defined in terms of physical existence, and therefore include nouns denoting entities that can be heard, tasted or smelled, or, in some cases, only observed indirectly (e.g., microbes, gases, black holes, or force fields). Within the category of concrete nouns, various subcategories can be distinguished, which are discussed in 1.2.2.1. Like concrete nouns, the category of abstract nouns can be shown to consist of a number of subcategories, which are discussed in 1.2.2.2. It is possible for a noun belonging to one subclass to be used as a noun belonging to another subclass; such non-prototypical uses (traditionally referred to as "conversion" between the two subcategories) are dealt with as well.

1.2.2.1. *Concrete nouns*

Concrete nouns are used to denote objects that have physical properties: typically they can be perceived by means of the human senses (sight, hearing, taste, smell, and touch), although the observation might also be more indirect. The physical properties of the entities denoted by concrete nouns include color, size, weight, intensity, strength, etc. Obvious examples of concrete nouns are *auto* 'car', *tafel* 'table', *gebouw* 'building', *water* 'water' and *hout* 'wood'.

(40) a. De grote, rode auto reed   langzaam voorbij.
          the large red car   drove slowly   passed
          'The large, red car slowly drove by.'
     b. Jan tilde de zware tafel   op.
          Jan lifted the heavy table prt.
          'Jan lifted the heavy table.'
     c. Het zwarte hout   maakte   de kamer erg somber.
          the black wood   made   the room very gloomy

This section is organized as follows. Section 1.2.2.1.1 will start by distinguishing four types of concrete nouns on the bases of two semantic features ([±SHAPE] and [±SET]). Section 1.2.2.1.2 discusses the semantic and distributional differences between the four types of concrete nouns on their prototypical use, which is followed in Section 1.2.2.1.3 by a discussion of the non-prototypical uses of these subclasses. Section 1.2.2.1.4 concludes with a discussion of a number of special uses of these concrete nouns.

1.2.2.1.1. Subclassification

The class of concrete nouns can be subdivided on the basis of the features [±SHAPE] and [±SET] in (41); cf. Rijkhoff (2002).

(41)   • Features of concrete nouns
      a.   [+SHAPE]: entities denoted are conceptualized as having a definite outline.
      b.   [-SHAPE]: entities denoted are not conceptualized as having a definite outline.
      c.   [+SET]: entities denoted are conceived of as a group or a non-singleton set.
      d.   [-SET]: entities denoted are conceived of as individuals.

The combination of these features results in the four subclasses in Table 5, where the names given in bold are the names that we will use for these noun classes in what follows.

Table 5: Four subclasses of concrete nouns

	[-SET]	[+SET]
[-SHAPE]	**substance nouns**: *hout* 'wood', *water* 'water', *gas* 'gas', *brood* 'bread'	**mass nouns**: *vee* 'cattle', *meubilair* 'furniture', *politie* 'police', *gebeente* 'bones'
[+SHAPE]	**individual nouns**: *man* 'man', *hond* 'dog', *huis* 'house', *auto* 'car'	**collective nouns**: *groep* 'group', *kudde* 'flock', *set* 'set', *horde* 'horde'

The semantic difference between [-SHAPE] and [+SHAPE] nouns corresponds to a number of formal differences with regard to countability and pluralization. The distinction between [+SET] and [-SET], on the other hand, seems purely semantic in nature and does not seem to correspond to any obvious formal difference.

I. [-SHAPE]: non-count nouns

Substance and mass nouns (i) cannot co-occur with the indefinite article *een*, but require the use of the zero-article instead, (ii) cannot be pluralized, and (iii) can be modified by [-COUNT] quantifying expressions as *veel* 'much', *weinig/een beetje* 'a little', *wat* 'some', *niet genoeg* 'not enough' and *een hoeveelheid* 'an amount'. It is on account of these features that these nouns have traditionally been called mass or non-count nouns. We will use these notions in a slightly different way: the notion of non-count noun will be used to refer to the superset comprising the mass and substance nouns, whereas mass noun will be used for the more restricted concept defined by Table 5.

II. [+SHAPE]: count nouns

The most conspicuous difference between the [+SHAPE] and [-SHAPE] nouns is that the former can be pluralized whereas the latter cannot. It is on account of this fact that the two sets have traditionally been called count and non-count nouns. Singular [+SHAPE] nouns further differ from the [-SHAPE] nouns in that they can be preceded by the indefinite article but not by quantifying expressions like *wat/een beetje* 'a little'. Plural [+SHAPE] nouns further differ from the [-SHAPE] nouns in that they can

be modified by quantifying expressions like *enkele* 'some/a few' and *een aantal* 'a number'.

(42) Comparison of [+SHAPE] and [-SHAPE] nouns

	INDIVIDUAL/COLLECTIVE [+SHAPE]	SUBSTANCE/MASS [-SHAPE]
PLURALIZATION	possible	not possible
ARTICLES	definite: *de/het* indefinite: *een*	definite: *de/het* indefinite: ∅
QUANTIFIERS	**wat/een beetje* + N$_{sg}$ *een aantal/enkele* + N$_{pl}$	*wat/een beetje* + N$_{sg}$ **een aantal/enkele* + N$_{sg}$

Note in this connection that Dutch differs from English in that it does not distinguish between [-COUNT] quantifiers like *little/much* and [+COUNT] quantifiers like *few/many*; Dutch uses *weinig* 'little/few' and *veel* 'much/many' both for non-count nouns and for plural count nouns. Nevertheless, the quantifier *een beetje* (but not *wat*) can be considered a [-COUNT] quantifier given that it cannot be used on the intended quantificational meaning with (singular or plural) count nouns: **een beetje boek(en)* 'a little books'. Similarly, quantifiers like *een aantal/enkele* can be considered [+COUNT] quantifiers given that they can only co-occur with plural count nouns. For a detailed discussion of the distribution and function of the various determiners and quantifiers, see Chapter 5 and Chapter 6.

III. [+SET] and [-SET]

Mass and collective nouns are [+SET] nouns and denote entities that themselves consist of two or more members. Substance and individual nouns are [-SET] nouns and denote unitary entities that do not consist of more members. It must be noted, however, that plural individual noun phrases like *(de) mannen* '(the) men' also refer to a set; the feature [±SET] must therefore be considered a feature of the bare noun, which can be overridden by the feature of the plural morpheme.

1.2.2.1.2. Differences between the subclasses

The following subsections will discuss in more detail some differences between the four subclasses of concrete nouns on their prototypical uses; the non-prototypical uses of these subclasses will be discussed in 1.2.2.1.3.

I. Substance nouns [-SHAPE] [-SET]

Substance nouns like *water* 'water' or *hout* 'wood' have the feature [-SHAPE]: the entities described by such nouns have measure (weight, volume) but no outline, and for this reason they can be included in the supercategory of non-count nouns. The entities denoted by the substance nouns do not qualify as sets either, given that the entities denoted by substances do not consist of individual members.

Since substance nouns lack a definite outline, they cannot co-occur with the indefinite article, but require the use of the zero-article instead, as is shown by example (43a). Example (43b) shows that substance nouns cannot be pluralized either; consequently, when noun phrases headed by these nouns function as subjects, there is always singular agreement on the verb.

(43) a.   In het glas   zat   ∅/*een water.
         in the glass sat$_{sg}$ ∅/a   water
         'There was water in the glass.'
      b. *In het glas   zaten drie waters.
         in the glass sat$_{pl}$ three waters

Substance nouns can be modified by a [-COUNT] quantifying expression like *een beetje* 'a little' in example (44a), but not by [+COUNT] quantifying expressions like *enkele* 'some/a few' in example (44b).

(44) a.   In het glas   zat   wat/een beetje water.
         in the glass sat$_{sg}$ a little   water
         'There was a little water in the glass.'
      b. *In het glas   zat   enkele/een aantal water.
         in the glass sat$_{sg}$ some/a number   water

II. Individual nouns [+SHAPE] [-SET]

Individual nouns have the feature [+SHAPE]: they denote entities with a definite outline, such as *auto* 'car' or *tafel* 'table', and for this reason they can be included in the supercategory of count nouns. They can be used to refer to persons, animals and things (e.g., *man* 'man', *hond* 'dog', *auto* 'car'). Since the entities denoted by individual nouns are conceived of as individuals, they also have the feature [-SET].

  Example (45a) shows that, in singular indefinite noun phrases, individual nouns cannot be preceded by the indefinite zero-article ∅, but must be preceded by the indefinite article *een* 'a'. If more than one entity is referred to, the plural form of the noun is preceded by the zero-article, as in (45b). When they function as subjects, noun phrases headed by individual nouns trigger number agreement on the verb: the verb is singular in (45a) and plural in (45b).

(45) a.   Op de tafel lag   een/*∅ boek.
         on the table lay$_{sg}$ a/∅   book
         'There was a book on the table.'
      b.   Op de tafel lagen ∅ boeken.
         on the table lay$_{pl}$ ∅ books
         'There were books on the table.'

Note in passing that Section 8.2.2 will show that there is an exception to the general rule that singular individual nouns must be preceded by the indefinite article *een* 'a': predicatively used individual nouns denoting a profession, function or position can be used without the indefinite article: *Jan is leraar* 'Jan is a teacher'.

  Plural individual nouns refer to non-singleton sets and can therefore be modified by [+COUNT] quantifying expressions like *enkele* 'some/a few'. Singular individual nouns, however, cannot co-occur with [-COUNT] quantifiers like *een beetje* 'a bit'. This is illustrated by (46a) and (46b), respectively.

(46) a.   Op de tafel lagen enkele/een aantal   boeken.
         on the table lay$_{pl}$ some/a number [of]   books
         'There were some/a number of books on the table.'

b. *Op de tafel lag/lagen wat/een beetje boek.
    on the table lay$_{sg/pl}$ a bit   book

III. Mass nouns [-SHAPE] [+SET]

Mass nouns have the features [+SET] and [-SHAPE]: they denote entities that are conceived of as a non-singleton set, but the set as a whole lacks a definite outline. Examples of these nouns are *vee* 'cattle', *politie* 'police', *geboomte* 'trees' and *meubilair* 'furniture'. Example (47a) shows that, like substance nouns, mass nouns cannot co-occur with the indefinite article, but use the zero-article instead, and (47b) shows that they cannot be pluralized. Accordingly, they only combine with singular verb forms when heading a subject noun phrase.

(47) a.   In de kamer stond ∅/*een meubilair.
              in the room   stood$_{sg}$ ∅/a   furniture
        b. *In de kamer stonden drie meubilairs.
              in the room   stood$_{pl}$ three furnitures

Being non-count nouns, mass nouns can be modified by [-COUNT] quantifying expressions like *een beetje* 'a little', but not by [+COUNT] quantifiers like *enkele* 'some/a few'. This is shown by (48a) and (48b), respectively.

(48) a.   In de kamer stond   wat/een beetje meubilair.
              in the room stood$_{sg}$ a little   furniture
              'There was a bit of furniture in the room.'
        b. *In de kamer   stond/stonden enkele/een aantal meubilair.
              in the room   stood$_{sg}$/stood$_{pl}$ some/a.number.of furniture

A further distinction can be made according to whether the set denoted by the mass nouns is homogeneous (consisting of identical or similar members) or heterogeneous (consisting of members differing in shape, color, function etc.). Nouns belonging to the former category, such as *politie* 'police', do not allow modification by means of *allerlei* 'all sorts of' or *velerlei* 'many sorts of', whereas nouns belonging to the latter class, like *vee* or *meubilair*, *speelgoed* 'toys', *snoepgoed* 'sweets' do (Vossen 1995).

(49) a. $^{??}$Er   was allerlei   politie op straat.
              there was all sorts of police in the.street
              'There were all sorts of police in the street.'
        b. De kinderen kregen allerlei   speelgoed/snoepgoed.
              the children   got   all sorts of toys/sweets
              'The children were given all sorts of toys/sweets.'

IV. Collective nouns [+SHAPE] [+SET]

Collective nouns differ from mass nouns in that they have the feature [+SHAPE]: they denote entities that are conceived of as a non-singleton set that has a definite outline in the sense that it consists of a restricted (though possibly unknown) number of members and is, as such, bounded. Examples of collective nouns are *groep* 'group', *kudde* 'flock', *verzameling* 'set', *club* 'club', *vereniging* 'club/society', *regering* 'government' and *collectie* 'collection'. Collective nouns

behave largely like individual nouns; example (50a) shows that they can be preceded by the indefinite article *een*, but not by the zero-article, and (50b) shows that the plural is used when more than one set is referred to. Consequently, when noun phrases headed by these nouns function as subjects, they will trigger number agreement on the verb.

(50) a. Op de foto   stond   een/*∅ regering   afgebeeld.
         on the photo stood$_{sg}$ a/∅   government   depicted
         'The photo showed a government.'
     b. Op de foto   stonden twee regeringen   afgebeeld.
         on the photo stood$_{pl}$ two governments   depicted
         'The photo showed two governments.'

Plural collective nouns can be modified by [+COUNT] quantifying expressions like *enkele* 'some/a few'; singular collective nouns, however, cannot be preceded by [-COUNT] quantifiers like *een beetje* 'a little'. This is shown by (51a) and (51b), respectively.

(51) a. Op de foto   stonden enkele/een aantal regeringen.
         on the photo stood   some/a number   governments
         'The photo showed some/a number of governments.'
     b. *Op de foto   stond wat/een beetje regering.
         on the photo stood a little   government

    A substantial subclass of collective nouns exhibit special behavior in the sense that they cannot readily occur on their own, but are preferably followed by a plural individual noun, specifying their members. Collective nouns like *kudde* therefore normally occur as the first noun in a binominal noun phrase. An example involving the collective noun *kudde* 'flock' is given in (52).

(52) a. In de wei   stond een kudde $^?$(schapen).
         in the meadow   stood a flock [of] sheep
         'There was a flock of sheep in the meadow.'
     b. In de wei   stonden twee/enkele/een aantal kuddes $^?$(schapen).
         in the meadow   stood   two/some/a.number.of flocks [of] sheep
         'There were two/some/a few/a number of flocks of sheep in the meadow.'

Although binominal noun phrases often contain collective nouns (because these denote a designated number of members), it is not a prerequisite that the first noun be a collective noun; Chapter 4 will show that the collective nouns form only one subtype of a wider range of nouns that can be used in binominal noun phrases.

1.2.2.1.3. Non-prototypical uses

This section will show that the classification presented in the preceding sections is characterized by a certain degree of flexibility in the sense that it is sometimes possible to use nouns belonging to one category in a way that is more appropriate for another category. In the following three subsections we discuss three cases of such non-prototypical uses, which all involve a shift in the value of the feature [±SHAPE]. The most common shift from the feature [-SHAPE] to [+SHAPE] involves

the use of a substance noun as an individual noun, but there are also some more marked cases in which a substance noun is used as an individual noun. There is just a single case that involves a shift from the feature [+SHAPE] to [-SHAPE], namely, the use of an individual noun as a substance noun.

I. Substance nouns used as individual nouns ([-SHAPE] → [+SHAPE])

Substance nouns can occasionally be used as individual nouns. This may take place through conversion (∅-derivation), by adding the diminutive suffix *-je* or one of its allomorphs, or by combining the noun with the indefinite article *een* 'a'. We will discuss the three cases in the order indicated.

A. Conversion

Individualization through conversion may result in a noun denoting objects made of the substance in question. Example (53) shows that the converted noun can be combined with either an indefinite or a definite article and be pluralized. Note that in these cases both uses are common, with the result that it is difficult to establish whether one use is dominant over the other or in what direction the conversion goes.

(53) Conversion to count noun

SUBSTANCE NOUN	INDIVIDUAL NOUN	
	SINGULAR	PLURAL
glas 'glass'	*een/het glas* 'a/the glass'	*glazen* 'glasses'
steen 'stone'	*een/de steen* 'a/the stone'	*stenen* 'stones'
brood 'bread'	*een/het brood* 'a/the loaf of bread'	*broden* 'loaves of bread'

Conversion can also result in a noun denoting a specific type of the substance denoted by the substance noun; the individual noun *gas* in (54) denotes a particular gas, and the individual nouns *bier* and *wijn* denote certain kinds or brands of beer and wine. In both cases, the converted noun can be combined with an indefinite article and be pluralized. Not that, when we want to maintain that we are dealing with a shift in the feature [±SHAPE], we again have to give the feature [+SHAPE] a wide interpretation by assuming that, cognitively speaking, types of gases and liquids do have a certain definite outline in the sense that, e.g., different types of gases do, chemically speaking, have different, characteristic structures.

(54) Conversion to count nouns denoting a specific type of substance

SUBSTANCE NOUN	INDIVIDUAL NOUN	
	SINGULAR	PLURAL
gas 'gas'	*een/#het gas* 'a/the gas'	*gassen* 'gases'
wijn 'wine'	*een/#de wijn* 'a/the wine'	*wijnen* 'wines'
bier 'beer'	*een/#het bier* 'a/the beer'	*bieren* 'beers'

Example (54) also shows that definite determiners are not possible under the intended reading; a definite noun phrases like *het gas* 'the gas' instead seems to refer to a contextually determined quantity of gas. Still, definite determiners are

possible on the type reading in examples like (55), where the restrictive modifiers create a contrastive context.

(55) a.   De witte wijn   is erg goed   (maar   de rode niet).
           the white wine is very good   but   the red   not
           'The white wine is very good (but the red wine is not).'
     b.   De Franse wijn   was erg duur   (maar   de Italiaanse niet).
           the French wine was very expensive   but   the Italian   not
           'The French wine was very expensive (but not the Italian wine).'

It is not only in cases like (55) that restrictive modifiers facilitate the type reading. Conversion often leads to very marked results: using an example like *een melk* to refer to a particular type of that substance is only possible in very specific contexts, but the addition of a restrictive modifier often makes such indefinite noun phrases fully acceptable.

(56) a.   een melk $^{??}$(met extra veel calcium)
           a milk   with extra much calcium
     b.   een zand $^{??}$(dat zeer geschikt is voor het bouwen van zandkastelen)
           a sand   that very suitable is for the building of sand castles
           'a kind of sand that is very suitable for building sand-castles'
     c.   een $^{??}$(voor quiches en soepen erg geschikte) spinazie
           a   for pies and soups   very suitable   spinach
           'a type of spinach that is very suitable for pies and soups'

B. Diminutive

The diminutive form of substance nouns denotes a small object made (up) of the substance in question, usually of a very specific type or character. For example, while *krijt* denotes chalk in general, *krijtje* denotes a piece of chalk used for writing on a blackboard. The derived nouns in (57) can be combined with either an indefinite or definite article and can be pluralized.

(57) Derivation of count nouns by means of the diminutive suffix

SUBSTANCE NOUN	INDIVIDUAL NOUN	
	SINGULAR	PLURAL
krijt 'chalk'	*een/het krijtje* 'a/the piece of chalk'	*krijtjes* 'pieces of chalk'
stof 'dust'	*een/het stofje* 'a/the particle of dust'	*stofjes* 'particles of dust'
ijs 'ice-cream'	*een/het ijsje* 'an/the ice-cream'	*ijsjes* 'ice-creams'

Derivation by means of the diminutive suffix is restricted in its application. The diminutive forms in (57), for example, are so commonly used that they may be said to have gained full lexical status, each having a specific meaning transcending the sum of head noun and diminutive suffix. Other combinations of substance noun and diminutive suffix, however, lead to varying degrees of markedness, as can be seen in (58).

(58) a. $^{??}$een melkje   b. $^{?}$een theetje   c. $^{*?}$een zilvertje
        a   milk$_{dim}$ a   tea$_{dim}$ a   silver$_{dim}$

Judgments on the acceptability of the diminutive forms in the examples in (58) will doubtlessly vary from speaker to speaker, and they largely depend on socio-cultural phenomena. For example, a diminutive form like *melkje* 'little milk' will definitely be marked (although acceptable in baby-talk), whereas a form like *yoghurtje* 'little yogurt' is acceptable, due to the fact that yogurt is often sold in small cups. Similarly, the diminutive form often refers to drinks served in certain quantities without explicit mention of that quantity.

(59) a. een cognacje   b. een biertje
     a   cognac_dim   a   beer_dim
     'a glass of cognac'   'a glass of beer'

C. Combining the indefinite article een and a substance noun

The combination of indefinite article and substance noun can also be used to refer to (culturally defined) fixed quantities or individual entities in constructions such as those given in (60). This particular use is more or less restricted to situations in which listed or displayed items (especially food) are ordered. In these and some of the earlier cases, there is reason to assume that we are dealing with ellipsis. Thus, the phrase *een koffie* 'a coffee' in (60a) might be taken as the elliptical form of the binominal noun phrase *een kop(je) koffie* 'a cup of coffee'. Similarly, the noun phrase *een melk* 'a milk' in example (56a) above may be taken as the simplified form of the noun phrase *een soort melk* 'a kind of milk'. Evidence in favor of such an analysis can be found in the fact, illustrated in example (60b), that it is possible to use a cardinal numeral to indicate that we are referring to a non-singleton set in combination with a *singular* substance noun. This can be accounted for by assuming that agreement holds between the numeral and the empty or elided noun; cf. the primed examples.

(60) a. Een koffie, alstublieft.   a′. een (kop) koffie
       a coffee   please   a   cup of coffee
    b. Mag ik twee bier van u?   b′. twee (glazen) bier
       may I   two beer from you   two   glasses of beer
    c. Een spaghetti, graag.   c′. een (bord) spaghetti
       a spaghetti   please   a   plate of spaghetti

Note that the northern variety of Dutch may differ in this respect from other varieties of Dutch; in Flemish Dutch, for example, *twee koffie/bier* is not acceptable. Instead a plural (diminutive) form is used: *Twee koffies/biertjes* 'two coffees/beers'.

    Not all of the non-prototypical uses of substance nouns discussed earlier can be analyzed as involving ellipsis. For example, the fully lexicalized nouns in examples (53) and (54) do not seem to have an appropriate semantic correlate that can be taken as its basic form. This will be clear from the examples in (61), which show that when the noun *bier* refers to a certain kind of beer, it must be pluralized when preceded by a cardinal numeral, whereas this is not possible in the corresponding binominal construction; an ellipsis account is therefore not plausible.

(61) a. Ze hebben hier honderden bieren/*bier.
          they have here hundreds beers/beer
          'They have hundreds of kinds of beer over here.'
      b. Ze hebben hier honderden soorten bier/*bieren.
          they have here hundreds kinds [of] beer/beers
          'They have hundreds of kinds of beer over here.'

Something similar holds for the noun phrase *een biertje* in (59b). The fact that the diminutive ending attaches to the substance noun *bier* suggests that this noun must be the underlying head and that there is no reason to assume the presence of another (empty or elided) noun: see the contrast in (62), which shows that in the binominal construction the diminutive suffix cannot be attached to the substance noun.

(62) a. Ze vroeg een glas bier/*biertje.
          she asked.for a glass [of] beer/beer$_{dim.}$
      b. Ze vroeg een glaasje bier.
          she asked.for a glass$_{dim.}$ [of] beer

II. Mass nouns used as individual nouns ([-SHAPE] → [+SHAPE])

Instances where mass nouns are used as individual nouns are rare and idiosyncratic, which might be expected given that they involve an additional shift in the feature [±SET], but not impossible. Such instances always involve the use of a pluralized mass noun referring to different kinds of the entity denoted, rather than to the mass itself. Thus example (63a), although definitely marked, is acceptable in an informal context, where different kinds of police (e.g., state police, county police, municipal police) are being distinguished. Clearly, cases like these cannot be regarded as involving ellipsis given that the corresponding binominal construction requires the noun to be singular: *drie (soorten) politie* 'three kinds of police'.

(63) a. $^{??}$Al heb je drie polities, dan ben je nog niet veilig.
          even have you three police then are you still not safe
          'Even if you have three police forces, you still won't be safe.'
      b. Al heb je drie soorten politie, dan ben je nog niet veilig.
          even have you three kinds of polices then are you still not safe
          'Even if you have three kinds of police forces, you still won't be safe.'

Still, it must be noted that the conversion in (63a) is quite rare: the examples in (64) show that it is impossible with most mass nouns and that a binominal construction or compound noun must be used in order to convey the intended message.

(64) a. *Je vindt verscheidene veeën in dit gebied.
          one finds several cattles in this area
      b. Je vindt verscheidene soorten vee/veesoorten in dit gebied.
          one finds several sorts of cattle/cattle.kinds in this area

III. Individual nouns used as substance nouns ([+SHAPE] → [-SHAPE])

The use of [+SHAPE] as [-SHAPE] nouns only involves the use of individual nouns as substance nouns. In all cases we are dealing with conversion. Contexts in which

reference is made to food are typical for this kind of use: the nouns *kip/appel* 'chicken/apple', which normally refer to entities, are used in (65a&b) to refer to an unbounded quantity of edible parts of these entities.

(65) a.   We aten gisteravond   kip.
            we ate   yesterday.evening chicken
            'We had chicken last night.'
     b.   Mijn neefje   is dol op meloen.
            my little cousin is fond of melon
            'My little cousin is fond of melon.'

Not all individual nouns referring to edible entities accept this kind of conversion quite so readily. In particular, nouns denoting small objects like *bes* 'berry' or *rozijn* 'raisin' in (66a) defy a substance interpretation. This, however, seems to hold only for objects that are normally conceptualized as separate objects, possibly because they are consumed that way. This would account for the fact that the examples in (66b), which also involve small objects with a definite shape, are acceptable.

(66) a.   ??Mijn neefje   is dol op bes/rozijn.
            my little cousin is fond of berry/raisin
            'My little cousin is fond of berries/raisins.'
     b.   Zij houdt niet van groene peper/kruidnagel.
            she likes   not of green pepper/clove
            'She doesn't like green pepper/cloves.'

However, it must be noted that nouns like *bes* 'berry' or *aardbei* 'strawberry' also resist conversion in examples like (67), which intend to refer to substances which are flavored by means of, e.g., an extract of berries/strawberries, whereas this is readily possible with nouns like *meloen* 'melon'. It seems, therefore, that it is the prototypical and not the actual use of the noun that counts.

(67) a.   *Er   zit bes/rozijn   in de thee.
            there is   berry/raisin in the tea
     b.   ??Er   zit aardbei   in dit ijs.
            there is strawberry in this ice cream
     c.   Er   zit meloen   in dit drankje.
            there is melon   in this drink

Conversion is also less common in non-culinary contexts and often yields less acceptable results. Nevertheless examples like (68) are conceivable, especially on a generic reading.

(68) a.   Ik houd erg   van %(de) zee.
            I   like   very.much of the sea
            'I like (the) sea very much.'
     b.   ?Veel bos   is goed voor het milieu.
            much forest is good for the environment
            'A lot of forest is good for the environment.'

Another case that may involve the use of [+SHAPE] nouns as [-SHAPE] nouns is discussed in Section 1.2.2.1.4, sub II.

1.2.2.1.4. Special uses: exclamative and evaluative constructions

In (42), we have seen that the feature [±SHAPE] has an effect on the determiners the nouns may co-occur with: count nouns take the indefinite article *een*, whereas the non-count nouns take the zero-article. In some constructions, however, these co-occurrence restrictions do not seem to apply. We will discuss two of these cases.

I. Exclamative use of [-SHAPE] nouns

Combinations of an indefinite article and a non-count noun are normally not acceptable, and the same thing holds for plural individual nouns. This is illustrated here again in the primeless examples in (69). These combinations become fully acceptable when preceded by the exclamative element *wat*, as in the primed examples. In these cases, the noun phrases form an exclamation, conveying the idea of an unexpectedly large quantity, or an unexpected quality; the water may be very dirty, the furniture extremely beautiful, and the books of extraordinary quality.

(69) a. *een water   a′. Wat een water!
          a   water   what a water
      b. *een meubilair   b′. Wat een meubilair!
          a   furniture   what a furniture
      c. *een boeken   c′. Wat een boeken!
          a   books   what a books

The use of the indefinite article also become possible in other exclamative surroundings, as shown by (70); the exclamative use is triggered by the use of the ethical dative *me* and/or the empathic particle *toch*, and the use of the noun phrases in the primeless examples in (69) is licensed.

(70) a. Na die stortbui   lag me er   een water op de weg!
          after that downpour   lay me there a water   on the road
          'After that downpour, the quantity of water on the road was incredible.'
      b. In die kamer stond me toch een meubilair!
          in that room   stood me PRT a furniture
          'That room was absolutely packed with furniture.'
      c. Er   lagen me toch een boeken over de grond verspreid!
          there lay   me PRT a books   on the ground scattered
          'An incredible quantity of book was scattered over the floor!'

II. Evaluative use of [+SHAPE] nouns

A quantifier like *een beetje* 'a little bit' normally only occurs with non-count nouns like the substance noun *water* 'water' in (71a) and the mass noun *meubilair* 'furniture' in (71b). With individual nouns like *boek* 'book' in (71c), the modifier *een beetje* is normally not possible.

(71) a. een beetje   water   c. #een beetje   boek
         a   bit [of] water   a   bit [of] book
      b. een beetje   meubilair
         a   bit [of] furniture

Nevertheless, example (71c) is marked with "#", since it may be acceptable on a very specific reading, and in a context characterized by a high degree of informality. Illustrations are given in (72). These examples express a (positive or negative) evaluation on the part of the speaker: the speaker is talking about books/men with certain characteristics that make them worthy of that name, that is, the speaker is talking about qualities, not entities, and in this sense it can be said that the individual nouns *boek* and *man* are used as substance nouns.

(72) a. Een beetje boek kost al   gauw €25.
         a bit [of] book   costs already soon €25
         'A book that is worthy of the name costs at least €25.'
      b. Een beetje   man pikt   zoiets   niet.
         a   bit [of] man takes something like that not
         'A real man wouldn't stand for that.'

Given the right context, every individual noun can be converted into a substance noun in this way, although the result is always at least stylistically marked. The examples in (73) show that quantifying expressions like *te veel* 'too much', *niet genoeg* 'not enough' and *een hoeveelheid* 'a quantity', which are normally restricted to substance nouns or plural count nouns, may trigger a similar interpretative effect as *een beetje*, when they are used in combination with singular individual nouns.

(73) a. Hij is mij teveel manager/niet genoeg manager.
         he   is me too.much manager/not enough manager
         'He is too much of a manager/not enough manager to my taste.'
      b. Dat is een flinke hoeveelheid boek die je   daar mee zeult!
         that is a fair quantity book   that you there prt. tote
         'That's quite a number of books you're toting around!'

In a similar way, collective nouns can be used as mass nouns. Use and effect are comparable to conversion from individual to substance noun. Here, too, conversion is more likely to be acceptable in contexts involving an evaluation on the part of the speaker. In (74a), for instance, the impression given is that of a sports club with a fair number of members and a certain status, while in (74b), the stamp collection in question must be considerable in size.

(74) a. Een beetje sportclub   heeft tegenwoordig een sponsor.
         a little bit [of] sports club has   nowadays   a sponsor
         'Any self-respecting sports club has a sponsor nowadays.'
      b. Een beetje postzegelverzameling kost al   gauw duizenden euro's.
         a bit [of] stamp collection   costs already soon thousands euros
         'Any reasonably-sized stamp collection costs easily thousands of euros.'

1.2.2.2. Abstract nouns

Abstract nouns denote entities that have a mental existence only, and therefore do not have any physical properties. Obvious examples are nouns like *betekenis* 'meaning', *liefde* 'love' and *geloof* 'belief'. The set of abstract nouns also include nouns like *verwoesting* 'destruction'; these nouns denote events, which are not directly perceivable and have no objective existence in the physical world, but are rather mental constructs built on the basis of observations relating to the participants and the results of the events in question. Nouns like *aanname* 'assumption' or *verzoek* 'request' are also taken to be abstract nouns; they denote mental constructs that are used to refer to propositional contents. The same thing holds for nouns like *grootte* 'size' or *schoonheid* 'beauty' that, instead of denoting concrete objects, denote properties of these objects.

1.2.2.2.1. Subclassification

Most traditional (and also many theory-specific) discussions of abstract nouns treat these nouns as belonging to one heterogeneous group, their common feature being that they are not concrete. This is hardly surprising, since the category seems to defy systematic classification in terms of clear-cut features comparable to [±SHAPE] and [±SET], which were used in 1.2.2.1 for the classification of the concrete nouns. Nevertheless, attempts have been made to come to a subclassification depending on the type of abstract entity denoted. Table 6 gives an overview of the types of abstract nouns that will be distinguished here together with a number of examples.

Table 6: Five subclasses of abstract nouns

TYPE OF NOUN	DENOTATION	EXAMPLES
State-of-affairs nouns	action [+CONTR][+DYN]	*verwoesting* 'destruction' *behandeling* 'treatment'
	process [-CONTR][+DYN]	*val* 'fall' *vooruitgang* 'progress'
	position [+CONTR][-DYN]	*verblijf* 'stay' *volharding* 'perseverance'
	state [-CONTR][-DYN]	*bewusteloosheid* 'unconsciousness' *ligging* 'position'
Proposition nouns	Propositional content	*feit* 'fact' *aanname* 'assumption'
Speech-act nouns	statement	*verklaring* 'statement', *belofte* 'promise'
	question	*vraag* 'question', *verzoek* 'request'
	order	*bevel* 'order', *opdracht* 'order'
Property nouns	Physical property	*lengte* 'length', *schoonheid* 'beauty'
	Mental property	*geduld* 'patience', *verlegenheid* 'shyness'
Emotion nouns	Emotion	*liefde* 'love', *angst* 'fear'

In what follows, these types will be described in some detail. A brief discussion of differences in syntactic and morphological behavior between these subcategories will also be included.

I. State-of-affairs nouns

State-of-affairs nouns, which are sometimes also referred to as event or process nouns, can be used to refer to states of affairs, that is, to actions (like *verwoesting* 'destruction'), processes (like *val* 'fall'), positions (like *verblijf* 'stay'), states (like *bewusteloosheid* 'unconsciousness'), and the like. As these states of affairs take place or obtain at a particular time and place, state-of-affairs nouns can be modified by time or place adverbials. Similarly, as states of affairs have participants, these nouns have arguments like agents, themes and recipients, even if these arguments are often not overtly present.

    Let us consider some examples. The head noun *verwoesting* 'destruction' in (75a) is used to denote an action, the noun *val* 'fall' in (75b) denotes a process, the noun *wonen* 'living' in (75c) denotes a position and the noun *hebben* 'having' in (75d) denotes a state. In all these examples, the head noun is complemented by one or more noun phrases referring to the participant(s) in the state of affairs referred to by the noun phrase as a whole; see Section 2.2.3 for a more detailed discussion of these complements. Note that in all these examples the state-of-affairs nouns are typically derived from verbs; in view of their meaning, this will not come as a surprise.

(75) a.   de verwoesting van de stad   [action: [+dynamic][+controlled]]
           the destruction of the city
      b.   de val   van de regering   [process: [+dynamic][-controlled]]
           the fall   of the government
      c.   het wonen in een stad   [position: [-dynamic][+controlled]]
           the living   in a city
           'living in a city'
      d.   het hebben   van blauwe ogen   [state: [-dynamic][-controlled]]
           the having of blue eyes
           'having blue eyes'

II. Proposition nouns

Proposition nouns are sometimes also referred to as content nouns; they denote entities that are assumed to have contents, such as facts, ideas, assumptions, beliefs etc. These entities function as propositions in the sense that they can be given a truth-value: they can be said to be true or untrue, they can be believed or denied, agreed with or rejected etc. The nouns in question have a complement, which typically takes the form of a clause or a PP: in (76a-c) the noun is complemented by a *dat*-clause denoting the content of the proposition and in (76d) a prepositional *van*-phrase is used.

(76) a.   het feit dat de aarde rond   is
           the fact that the earth round is
           'the fact that the earth is round'
      b.   het idee dat   schapen gekloond kunnen   worden
           the idea that   sheep   cloned   can   be
           'the idea that sheep can be cloned'

    c.   de aanname   dat er   leven op de maan is
        the assumption that there life   on the moon is
        'the assumption that there is life on the moon'
    d.   het nieuws   van het aanstaande huwelijk van de kroonprins
        the news   of the forthcoming marriage of the crown.prince
        'the news of the crown prince's forthcoming marriage'

Like state-of-affairs nouns, proposition nouns are typically, though not necessarily, deverbal; cf. the use of the simple nouns *feit* 'fact' and *idee* 'idea' in (76a&b). With the deverbal cases, the input verb belongs to the class of so-called verbs of thinking (such as *geloven* 'to believe', *aannemen* 'to assume', *veronderstellen* 'to suppose', *denken* 'to think', *menen* 'to think/believe', *argumenteren* 'to argue/reason', *redeneren* 'to reason', etc.) or verbs denoting actions requiring some mental activity on the part of the speaker or hearer (like *impliceren* 'to imply', *bewijzen* 'to prove').

    The primed examples in (77) show that deverbal proposition nouns all seem to have infinitival counterparts that are clearly related in meaning.

(77) a.   de aanname   a′. het aannemen
       'the assumption'   'the assuming'
    b.   de argumentatie   b′. het argumenteren
       'the argumentation'   'the arguing'
    c.   de redenering   c′. het redeneren
       'the reasoning/argumentation'   'the reasoning'

Nevertheless, there are important semantic and syntactic differences between the two forms. As far as the semantics is concerned, deverbal proposition nouns like *aanname*, *argumentatie*, and *redenering* denote the *content* of the argumentation or (line of) reasoning, whereas the infinitival nouns function as state-of-affairs nouns, denoting the *action* of arguing or reasoning. In other words, while the former are preferred in contexts like (78a) where it is the content that is referred to, the latter are more acceptable in contexts like (78b) where some action is referred to.

(78) a.   Zijn redenering was niet bepaald logisch.
        his reasoning   was not   exactly logical
    a′. ^{??}Zijn redeneren was niet bepaald logisch.
        his   to.reason was not exactly logical
    b.   Logisch   redeneren is niet zijn sterkste punt.
        logically to.reason is not his strongest point
        'Reasoning logically is not his strongest point.'
    b′. ^{??}Logische redenering is niet zijn sterkste punt.
        logical   reasoning is not his strongest point

Section 2.2.3.2 includes a more detailed discussion of these forms and the syntactic differences between them (like the optional/obligatory realization of the complement).

III. Speech-act nouns

Speech-act nouns denote a type of abstract entity that can be described as a speech act. Nouns of this type, such as *vraag* 'question', *bevel* 'order', *belofte* 'promise', *verzoek* 'request', *mededeling* 'announcement' denote some form of verbal

interaction, and are typically derived from verbs denoting such activities, that is, the input verb is a verb of saying like *vragen* 'to ask', *bevelen* 'to order', *beloven* 'to promise', *verzoeken* 'to request', etc.

Like proposition nouns, speech-act nouns can take a clausal complement introduced by a complementizer denoting the contents of the speech act. This is illustrated in example (79) for the speech-act nouns *mededeling* 'announcement' and *verzekering* 'assurance', which take a clausal complement introduced by the complementizer *dat* 'that'.

(79) a. De mededeling   dat de trein vertraagd was, was niet te verstaan.
         the announcement that the train delayed was   was not   to hear
         'The announcement that the train was delayed couldn't be heard.'
    b. De verzekering dat het probleem niet ernstig was, stelde ons gerust.
         the assurance   that the problem not serious was   put   us at.ease
         'The assurance that the problem wasn't serious put our minds at ease.'

Speech-act nouns can also take an infinitival complement introduced by the complementizer *om*, provided the input verb is able to do so, too. The implied subject °PRO of the infinitival complement clause is interpreted as being coreferential with an argument of the speech-act noun. Which argument functions as antecedent depends on the context. The examples in (80) serve to illustrate this: in (80a), it is the genitive noun phrase *Jans*, referring to the person making the request, that will be interpreted as coreferential with PRO, and in (80b), it is the noun phrase *Peter*, the recipient of the request, that is interpreted as the PRO subject of the interpretation.

(80) a. Jans verzoek aan Peter [om PRO te mogen   blijven] werd genegeerd.
         Jan's request to Peter   COMP   to be.allowed stay   was   ignored
         'Jan's request to Peter for permission to stay was ignored.'
    b. Jans verzoek aan Peter [om PRO te blijven] werd genegeerd.
         Jan's request to Peter   COMP   to stay   was   ignored
         'Jan's request to Peter to stay was ignored.'

The clausal complement of the speech-act noun *vraag* 'question' is interrogative. As with the verb *vragen* 'to ask', the interrogative complement can be a *yes/no*-question, introduced by the complementizer *of*, or a *wh*-question, introduced by a *wh*-phrase.

(81) a. de vraag   [of   we moesten komen]   [*yes/no*-question]
         the question COMP we must   come
         'the question whether we had to come'
    b. de vraag   [hoe we nu moesten handelen]   [*wh*-question]
         the question how we now must   act
         'the question how we should act in such cases'

Speech-act nouns can also take PP-complements. These complements can denote the contents of the speech act, in which case the choice of preposition often depends on the speech-act noun.

(82) a. zijn verzoek   om salarisverhoging
    his request for pay rise
  b. zijn mededeling over het volgende uitje
    his announcement about the next excursion
  c. het verbod op roken in dit gebouw
    the ban on smoking in this building
  d. de vraag naar olie
    the request for oil

A postnominal PP can, of course, also refer to the participants of the speech act, in which case the prepositions *van* 'of' and *aan* 'to' are used, followed by a noun phrase referring to the speaker and the addressee, respectively, as in (83). Note that both the *van*-PP and the *aan*-PP precede the *om*-complement in (83), regardless of whether the latter is a PP or a clause.

(83) a. het verzoek van Marie aan de commissie om extra hulp
    the request of Marie to the committee for extra help
  b. het verzoek van Marie aan de commissie [om PRO te worden toegelaten]
    the request of Marie to the committee COMP to be admitted

The examples in (84) show that a postnominal PP can also have the function of an adverbial adjunct. These examples also show that a PP-complement must precede the PP-adjunct, whereas a complement clause follows it instead. For more details on the complementation of speech-act nouns, see Section 2.3.

(84) a. het verbod <op stelen> in de Bijbel <$^{??}$op stelen>
    the ban on stealing   in the Bible
  b. het verbod <$^{??}$[om PRO te stelen]> in de Bijbel <[om PRO te stelen]>
    the ban   COMP to steal in the Bible

IV. Property nouns

Property nouns are those nouns that denote properties of entities. Two basic subtypes can be distinguished: (i) nouns describing physical/perceptible properties of concrete entities, such as *hoogte* 'height', *grootte* 'size', *vorm* 'form', etc. and (ii) nouns describing abstract properties, such as character traits, like *geduld* 'patience' or *beleefdheid* 'politeness'. Property nouns, if derived, typically have an adjectival basis, such as *hoog* 'high', *breed* 'wide', *groot* 'big', *beleefd* 'polite', etc. Some basic property nouns, such as *duur* 'duration' and *kleur* 'color' have a verbal counterpart (*duren* 'to last' and *kleuren* 'to color'), but whether these nouns have been derived from the verbs in question or the other way round is an open question.

A. Physical property nouns

Since the physical properties denoted by property nouns are typically used to describe some other entity, they usually occur with a *van*-complement, as shown by examples (85a&b). Example (85c) shows that it is sometimes also possible to use a possessive pronoun or a genitive noun phrase.

(85) a. de hoogte van de toren is indrukwekkend
        the height of the tower is impressive
    b. De vorm van de vraag   is belangrijk.
        the form of the question is important
    c. de lengte van Jan/Jans lengte/zijn lengte
        the height of Jan/Jan's height/his height

Genitive noun phrases can only be used when the referent is [+HUMAN], as in (85c), but possessive pronouns can also be used to refer to a [-ANIMATE] entity. This is, however, subject to certain restrictions that are not fully understood, and using a pronominalized*van*-PP is often preferred; see Section 5.2.2.1 for detailed discussion. Example (86c) shows that using a pronominalized *van*-PP to refer to a [+HUMAN] referent gives rise to a degraded result.

(86) a. De hoogte ervan/$Zijn hoogte   is indrukwekkend.
        the height of.it/his height   is impressive
        'Its height is impressive.'
    b. De vorm ervan/$Zijn vorm is belangrijk.
        the form of.it/his form   is important
        'Its form is important.'
    c. Zijn[+human] lengte/??de lengte ervan[+human]
        his height/the height of him

A *van*-complement is not used when the reference is nonspecific or generic: in the former case the property noun will be preceded by the indefinite article, as in (87a), and in the latter case it may appear without a determiner, as in (87b).

(87) a. Elk gebouw   heeft een hoogte, een lengte en   een breedte.
        every building has   a height   a length   and a width
    b. Vorm   is belangrijker   dan inhoud.
        form   is more important than content
        'Form is more important than content.'

B. Abstract property nouns

The second subcategory of property nouns consists of nouns that denote properties that cannot be observed or measured in a direct way, but which form part of the mental make-up of the entity described. They include nouns denoting (more or less) permanent character traits like *geduld* 'patience', *intelligentie* 'intelligence' or *luiheid* 'laziness'. As with the physical property nouns, these nouns typically occur in combination with a *van*-PP or, when the property is assigned to a [+HUMAN] entity, with a genitive noun phrase or possessive pronoun. This is illustrated in example (88).

(88) a. de aantrekkingskracht van drugs
        the attraction   of drugs
    b. het geduld   van Peter
        the patience   of Peter
    b′. Peters/zijn geduld
        Peter's/his patience

V. Emotion nouns

The emotion nouns are the final type of abstract nouns that we will discuss here, These nouns denote (more or less) temporary emotions, like *haat* 'hatred', *begeerte* 'desire', *behoefte* 'need' and *verdriet* 'grief'. In most cases, the emotion denoted involves some other, affected, entity. In this respect, the nouns exhibit a structural parallelism with the verbs to which they are semantically related; this will become clear from comparing the primeless, verbal constructions in (89) with the primed, nominal ones. However, the fact that these nouns select their own preposition (*voor*, *aan*, *naar*, *tegen/jegens*), which is typically lacking in the verbal constructions, suggests that these nouns cannot be considered derived from the related verbs. See Section 2.1.5, sub E, for some more discussion on the emotion nouns.

(89) a.   Peter behoeft rust.   [archaic]
           Peter needs   quiet
      a′. Peters   behoefte aan rust   [colloquial]
           Peter's need   for quiet
      b.   Zij begeert macht.   b′. haar begeerte naar macht
           she craves   power   her craving   for power
      c.   Hij haat zijn rivaal.   c′. zijn haat   tegen/jegens zijn rivaal
           he   hates his rival   his hatred of his rival

1.2.2.2.2. Non-prototypical uses

In many cases nouns that can be used to refer to abstract entities can also be used to refer to concrete entities. This type of ambiguity has often been referred to as the difference between state-of-affairs nouns and result nouns, with the former denoting an event and the latter the concrete result of that event; cf. Abney (1987: 115), Grimshaw (1990), De Haas & Trommelen (1993: 241) and Alexiadou et al. (2007: part IV, section 1.3). Examples of such nouns are *uitvinding* 'invention' and *bestrating* 'surfacing/surface' in example (90). Observe the difference in complementation between the two (a)0examples in (90), with the *van*-PP referring to the invention and the inventor, respectively; see Section 2.2.3.3 for more details on the complementation of ING-nominalizations.

(90) a.   De uitvinding van de telefoon dateert uit de 19^e eeuw.   [process noun]
           the invention of the telephone dates   from the 19th century
      a′. De uitvinding van Bell hing   aan de muur.   [result noun]
           the invention of Bell   hangs   on the wall
           'Bell's invention is hanging on the wall.'
      b.   De bestrating van de weg duurde drie weken.   [process noun]
           the surfacing of the road   took   three weeks
      b′. De bestrating van deze weg moet   vernieuwd worden.   [result noun]
           the surface of this road   needs renewed   be
           'This road is in need of a new surface.'

The distinction between result and process nouns covers only a small number of the many ambiguities that may occur with abstract nouns. Many nouns can be used to denote an abstract entity like an action or process as well as a concrete entity that is

not the result of the state of affairs but in some other way related to it. In examples (91a′&b′), for instance, the nouns *vergadering* and *bezoek* refer to participants (namely, the agents) of the action denoted by the verbs *vergaderen* 'to meet' and *bezoeken* 'to visit', and in (91c′) the noun *huisvesting* 'housing' refers to the (concrete) means through which the action of housing is accomplished. In all three cases the nouns in the primeless sentences are state-of-affairs nouns.

(91) a.   De vergadering duurde drie uur.   [process noun]
          the meeting   lasted   three hour
     a′. De vergadering bestond   uit oudere heren.   ["participant" noun]
          the meeting   consisted   of elderly gentlemen
     b.   Het bezoek duurde erg lang.   [process noun]
          the visit   lasted   very long
     b′. Het bezoek bleef   erg lang.   ["participant" noun]
          the visitors stayed very long
     c.   De huisvesting van asielzoekers duurt te lang.   [process noun]
          the housing of asylum seekers   takes too long
     c′. We waren op zoek naar geschikte huisvesting.   ["means" noun]
          we   were   looking for suitable housing
          'We were looking for suitable accommodation.'

In other cases, the abstract noun in question does have an event and a result reading, but instead of the result being a concrete entity, its referent, too, is abstract. An example is given in (92): in (92a) the noun *veroordeling* is used to refer to the action of sentencing performed by the jury, whereas in (92b) it is used to refer to the punishment resulting from this action.

(92) a.   De veroordeling van de beklaagde door de jury verliep moeizaam.
          the sentencing of the accused   by the jury   went   difficult
          'The sentencing of the accused by the jury was problematic.'
     b.   De verdachte   wachtte een zware veroordeling.
          the accused   waited   a heavy sentence
          'The accused was in for a heavy sentence.'

Finally, example (93) shows that the abstract noun need not be a state-of-affairs noun. Instead the ambiguity here is between an abstract, speech act reading of the nouns *vraag* 'question' and *bevel* 'order' and a concrete reading. In these cases, the speech-act reading is clearly the prototypical one.

(93) a.   Hij had de vraag/het bevel   niet goed begrepen.   [abstract]
          he   had the question/the order not well   understood
          'He hadn't quite understood the question/order.'
     b.   De vraag/het bevel   was moeilijk te lezen.   [concrete]
          the question/the order was difficult to read

1.2.3. *Relational versus non-relational nouns*

Non-derived nouns normally do not have an argument structure. This section will discuss a class of nouns that is exceptional in this respect, the so-called relational

nouns. The distinction between relational and non-relational nouns is generally assumed to be relevant for the subclass of concrete nouns. Relational nouns require, or at least imply, an argument; the entities they denote can only be identified on the basis of a relation to some other entity. Thus, ordinarily speaking, one cannot refer to a father without including a reference to one or more children; nor can one refer to a body part without relating the object to its possessor. In the former case, the relation is one of kinship, and in the latter we are dealing with a "part-of" relationship. In either case, the relationship is in a sense inherent: the nouns *vader* 'father' and *hoofd* 'head' denote INALIENABLY POSSESSED entities (Fillmore 1968).

Example (94a) is odd because there is no mention of a related entity; the addition of the genitive noun phrase/*van*-PP in (94b) renders the sentence acceptable.

(94) a. [??]Ik zag de/een vader in het park.
      I saw the/a father in the park
   b. Ik zag Jans vader/de vader van Jan in het park.
      I saw Jan's father/the father of Jan in the park

Similarly, the examples in (95) are odd when the possessive pronoun is replaced by an indefinite article: a noun denoting a body part like *hoofd* 'head' or *neus* 'nose' is only possible if a "possessor" is available. Note that using the indefinite article in (95b) leads to an interpretation in which Jan broke an arbitrary (that is, someone else's) nose.

(95) a. Ik heb pijn in mijn/*een hoofd.
      I have pain in my/a head
      'I have a headache.'
   b. Jan brak zijn/[#]een neus.
      Jan broke his/a nose

Generally speaking, the examples in (94) and (95) show that relational nouns obligatorily take an argument that refers to a related entity. However, when a restrictive modifier is present, the argument need not be present. Here, we illustrate this with the relational noun *kaft* 'cover', which is in an inherent relation with the noun *boek* 'book'. As is shown by (96a), dropping the PP-complement *van het boek* gives rise to a marginal result. However, the addition of a restrictive relative clause or an attributive adjective, as in (96b&c), makes the construction completely acceptable again.

(96) a. Ik zag een kaft [??](van een boek).
      I saw a cover of a book
   b. Ik zag een kaft die knalgeel was.
      I saw a cover that canary.yellow was
   c. Ik zag een knalgele kaft.
      I saw a canary.yellow cover

Occasionally, nouns are ambiguous between a relational and a non-relational reading. The clearest examples involve the nouns *man* and *vrouw*: when no argument is present the noun phrase only allows a non-relational reading, that is, the noun phrase simply refers to some male/female person; when a genitive noun

phrase or a *van*-PP is present, on the other hand, these nouns are interpreted as relational nouns meaning "husband" and "wife", respectively.

(97) a. de man   a′. Maries man
      the man   Maries husband
    b. de vrouw   b′. de vrouw van Jan
      the woman   the wife of Jan

The examples in (98) suggest that relational nouns differ syntactically from non-relational nouns in that extraction of the *van*-PP is possible with the former, whereas with the latter this is normally excluded (regardless of whether the PP in question is introduced by *van* or some other preposition). See Section 2.2.1.5 for a more detailed discussion of PP-extraction (as well as De Haan 1979, Guéron 1980 and Kaan 1992). For further discussion of complementation of the relational nouns, see Section 2.2.2.

(98) a. Van J<small>AN</small> heb ik de vader   gezien (en van P<small>ETER</small> de moeder).
      of Jan   have I   the father seen   and of Peter   the mother
      'It was Jan's father I saw (and Peter's mother).'
    b. Ik heb   een taalkundige van hoog aanzien ontmoet.
      I   have a linguist   of great standing   met
      'I have met a linguist of great standing.'
    b′. *Van groot aanzien heb ik een taalkundige ontmoet.
      of great standing   have I   a linguist   met

Closely related to the class of relational nouns are deverbal person nouns that require a complement. Thus, person nouns like *maker* 'maker' or *schrijver* 'writer' in (99a&b) also require the presence in the discourse situation of some other entity, in this case the object of the input verb. As shown by the primed examples, noun phrases headed by nouns of this kind also allow PP extraction.

(99) a. Jan is de maker   ^{??}(van dit kunstwerk).
      Jan is the maker   of this work.of.art
    a′. Van dit kunstwerk is Jan de maker.
    b. Marie is de schrijver ^{??}(van deze scriptie).
      Marie is the writer   of this essay
    b′. Van deze scriptie is Marie de schrijver.

When a deverbal relational noun of this sort is preceded by an indefinite article, there is a relation between the interpretation of the noun phrase as a whole and that of the complement of the *van*-PP. Example (100a) shows that the noun phrase as a whole can only be interpreted as nonspecific indefinite when the complement of the *van*-PP is nonspecific indefinite as well. When the complement of the *van*-PP is definite, as in (100b), the noun phrase as a whole will receive a specific indefinite interpretation.

(100) a. Ik heb   een schrijver van kinderboeken   ontmoet.
       I   have a writer   of children's books met
       'I've met a writer of children's books.'

b. Ik heb een schrijver van die kinderboeken ontmoet.
   I have a writer of those children's books met
   'I've met one of the writers of those children's books.'

Note further that substituting a definite article for the indefinite article of the complete noun phrase triggers a contrastive reading in the (a)- but not in the (b)-example. Thus, (101a) can only be used when there is a pre-established set of writers, one of whom writes children's book; in other cases, the use of this example gives rise to an infelicitous result. Example (101b), on the other hand, is not restricted in this way.

(101) a. #Ik heb de schrijver van kinderboeken ontmoet.
   I have the writer of children's books met
   'I've met the writer of children's books.'
   b. Ik heb de schrijver van die kinderboeken ontmoet.
   I have the writer of those children's books met
   'I've met the writer of those children's books.'

The other deverbal nouns also seem to require an object complement: the state-of-affairs noun *vernietiging* 'destruction', for example, is unacceptable when the theme is not expressed: *de vernietiging *(van de stad)* 'the destruction of the city', and normally cannot be used with an indefinite article: **een vernietiging van de stad* 'a destruction of the city'. For a detailed discussion of such deverbal nouns, see Sections 1.3.1 and 2.2.3.

1.3. Derivation of nouns

Like verbs and adjectives, nouns form an open syntactic class that can be extended by means of various word formation processes, some of which are fully productive, while others are only partially productive or nonproductive. This section briefly lists the most important derivational processes in the formation of nouns; compounding will be discussed in Section 1.4. This section is organized according to the category of the input word. We will discuss derivation on basis of a verb, an adjective and a noun. We do not aim at providing an exhaustive discussion but will focus on those derived nouns that inherit the denotation and the °argument structure (the °thematic roles) of their stem, in order to clear the ground for the later discussion of complementation of nouns in Chapter 2. For more detailed overviews of noun formation, we refer the De Haas & Trommelen (1993), Haeseryn et al. (1997), and also Van der Putten (1997).

1.3.1. Deverbal nouns

This section deals with the derivation of deverbal nouns. We will start in 1.3.1.2 with the most productive process, which involves the formation of infinitival nominalization by means of conversion (zero-derivation), as illustrated in the first two rows of Table 7. Two types of conversion are distinguished depending on whether the infinitival nominal is preceded by a determiner or not, and they will be referred to as DET-INF and BARE-INF nominalization, respectively. Conversion results in nouns that denote the same state of affairs as denoted by the input verb.

The process of deriving deverbal nouns by means of affixation is far less productive than the derivation of infinitival nominals by conversion. Affixation typically derives nouns denoting state of affairs or (mostly human) objects. In 1.3.1.3 to 1.3.1.5 we will discuss the following affixes: the suffix *-ing*, which typically derives nouns denoting states of affairs or person nouns; the prefix *ge-*, which derives nouns denoting durative or iterative states of affairs; the suffix *-er/-aar*, which derives either person nouns or nouns denoting non-human agents/instruments.

Table 7: Nominalization

TYPE	EXAMPLE	SECTION
BARE-INF nominalization	[*Boeken lezen*] *is leuk.* books read is fun 'To read books is fun.'	1.3.1.2
DET-INF nominalization	[*Het lezen van boeken*] *is leuk.* the read of books is fun 'The reading of books is fun.'	1.3.1.2
ING- nominalization	[*De behandel***ing** *van de patiënt*] *was succesvol.* the treatment of the patient was successful	1.3.1.3
GE- nominalization	[*Het* **ge***zeur over zijn ouders*] *wordt vervelend.* the nagging about his parents becomes annoying	1.3.1.4
ER- nominalization	[*De bedel***aar**] *werd gearresteerd.* the beggar was arrested	1.3.1.5

Recall that we are not trying to be exhaustive here. There are other suffixes that can be used to derive nouns from verbs, such as *–sel* and *–erij*. These are, however, less productive than the suffixes discussed here, and typically (though not necessarily) appear without arguments. A discussion of these suffixes can be found in, e.g., De Haas & Trommelen (1993), Haeseryn et al. (1997), and Knopper (1984).

1.3.1.1. General properties of nominalization

This section will briefly introduce four aspects that will be discussed in the following sections for all types of nominalization in Table 7. Furthermore, in order to avoid unneeded redundancy we will discuss a number of general restrictions concerning the types of verb that can be used as input for nominalization.

I. The form of the derived noun

The sections devoted to the morphological properties of derived nouns briefly discuss the affixes (suffixes or prefixes) used and the distribution and productivity of the morphological processes by which they are derived.

II. The relation of the derived noun to the base verb

The sections on the relation between the derived noun and the base verb are mainly concerned with the effects of the derivational process, in particular concerning the inheritance of arguments (with or without a selected preposition) and the semantic

roles of these arguments. The discussions in this section will only briefly discuss these matters, since a more extensive discussion can be found in Chapter 2.

III. Restrictions on the derivational process

None of the nominalization processes in Table 7 is fully productive in the sense that it can take any (type of) main verb as input. Restrictions on the nominalization process relate to the type of input verb and, in some cases, to the thematic role(s) of the argument(s). It will be shown that the different types of deverbal noun impose different restrictions on the types of input verb they allow. For instance, whereas infinitival nominalizations (especially the bare ones) are almost fully productive, the process of ER-nominalization is much more restricted, both in terms of type of input verb and in terms of the thematic role of the external argument (the subject) of the input verb. There exist also a number of general restrictions on the input verbs that are common to all types of nominalizations. Rather than discussing these in each of the sections, the crucial points will be summarized here.

A. Auxiliary and modal verbs

The perfect auxiliaries *hebben* and *zijn* and modal verbs like *kunnen* 'to be able' allow only infinitival nominalization. Some examples are given in (102). The primeless examples are BARE-INF nominalizations: in these cases the complements of the input verb appears as a noun phrase to the left of the derived nouns. The primed examples are DET-INF nominalizations: in these cases the complements of the input verb appears as a postnominal *van*-PP. All other types of nominalization resist the auxiliary and modal verbs as their input.

(102) a.   [Zo'n boek   gelezen hebben] is niet genoeg om je taalkundige te noemen.
          such a book read   have   is not enough to yourself linguist to call
          'To have read such a book is not enough to call yourself a linguist.'
    a′. [Het gelezen hebben van zo'n boek] is ...
          the   read   have   of such a book is
          'Having read such a book is ...'
    b.   [Met een vrachtauto kunnen rijden] is een voorwaarde voor deze baan.
          with a truck   be able drive   is a requirement for this job
          'To be able to drive a truck is a condition for this job.'
    b′. [Het kunnen rijden met een vrachtauto] is een voorwaarde voor deze baan.
          the   be.able drive with a truck   is a requirement for this job
          'Being able to drive a truck is a condition for this job.'

B. Copular verbs

Copular verbs allow only infinitival nominalization. As can be seen from the examples in (103), the predicate normally precedes the noun both in BARE-INF and in DET-INF nominalizations. It is nevertheless not hard to find on the internet DET-INF nominalization in which a nominal predicate is realized as a postnominal *van*-PP; cf. (103a′). Realizing of a non-nominal predicate as a postverbal *van*-PP, as in (103b′), is categorically impossible.

(103) a.   [(Het) moslim zijn] is niet gemakkelijk in de Westerse wereld.
             the   Muslim be   is not easy   in the Western world
          'Being a Muslim is not easy in the Western world.'

    a′. [%][Het zijn van (een) moslim] is niet gemakkelijk in de Westerse wereld.
           the be of   a   Muslim is not easy   in the Western world
          'Being a Muslim is not easy in the Western world.'

    b.   [(Dat) ziek zijn] is geen pretje.
           that ill   be   is no   fun$_{dim}$
          'Being ill is no fun.'

    b′. *[Het/Dat zijn van ziek] is geen pretje.
           the/that be of ill   is no   fun$_{dim}$

C. *Raising verbs*

So-called °raising verbs like *schijnen/lijken* 'to seem' and *blijken* 'to appear' are categorically rejected as input verbs for nominalization; cf., e.g., Booij (1986b). As shown by (104), the ban on nominalization extends to infinitival nominalization, regardless of whether °Subject Raising has taken place, as in (104b′), or not, as in (104a′).

(104) a.   Het schijnt dat Jan ziek is.   a′. *(het) schijnen dat Jan ziek is
         it   seems that Jan ill   is   the   seem   that Jan ill is
        'It seems that Jan is ill.'

    b.   dat Jan ziek schijnt te zijn.   b′. *(het) ziek schijnen te zijn van Jan
         that Jan ill   seems to be   the   ill   seem   to be of Jan
        'that Jan seems to be ill.'

D. *Object-experiencer verbs*

None of the nominalization types can take object-experiencer verbs as their input. Object-experiencer verbs can be divided into two groups, depending on the case assigned to the non-nominative argument in languages like German, which do express case morphologically (cf. Den Besten 1985 and references cited there): with the NOM-DAT verbs, the object is assigned dative case, whereas with NOM-ACC verbs, the object is assigned accusative case. Neither of these types can be nominalized.

    NOM-DAT verbs like *lukken* 'to succeed' and *spijten* 'to regret' in (105) and (106) are dyadic °unaccusative verbs, whose nominative argument is not an agent but a theme (it is the object experienced). They take an experiencer NP-complement that appears in the dative case. As is shown by the primed examples, these verbs cannot be the input for BARE/DET-INF, ING- or GE-nominalizations.

(105) a.   Al zijn plannen lukken hem.
         all his plans   succeed him
        'He succeeds in all his plans.'

    b. *[(Het) hem lukken van al zijn plannen] is nogal irritant.
           the   him succeed of all his plans   is rather annoying

    c. *[De hem lukking   van al zijn plannen] is nogal irritant.
          the him succeeding of all his plans   is rather annoying

    d. *[Het hem geluk   van al zijn plannen] verheugde hem.
          the him succeeding of all his plans   delighted him

(106) a.   Zijn laffe gedrag   speet   hem zeer.
            his cowardly behavior regretted him much
            'He regretted his cowardly behavior very much.'
      b.   *[(Het) hem spijten van zijn laffe gedrag]   is niet oprecht.
             the   him regret   of his cowardly behavior is not sincere
      c.   *[De hem spijting   van zijn laffe gedrag]   is niet oprecht.
             the him regretting of his cowardly behavior is not sincere
      d.   *[Het hem gespijt   van zijn laffe gedrag]   is nooit oprecht.
             the him   regretting of his cowardly behavior is never sincere

ER-nominalization is also excluded, which is of course due to the fact that the resulting noun must refer to the agent of the input verb, which is lacking with these verbs. So even for those NOM-DAT verbs that have a [+HUMAN] subject, ER-nominalization is excluded. This is illustrated in (107) for the NOM-DAT verbs *opvallen* 'to strike' and *bevallen* 'to please'.

(107) a.   De man viel   haar op   (door zijn gedrag).
            the man struck her   prt. by his behavior
            'The man struck her (because of his behavior).'
      a′. *een haar opvaller (door zijn gedrag)
             a   her strik-er   by his behavior
      b.   De nieuwe werknemer beviel   ons goed.
            the new employee   pleased us   well
            'We were pleased with the new employee.'
      b′. *een ons   goede bevaller
             an   us   good   pleas-er

    The NOM-ACC verbs, which are also known as psych-verbs, take an accusative object. As in the case of NOM-DAT verbs, the object has the thematic role of experiencer (it is the argument who experiences the psychological state denoted by the verb), while the subject does not perform the role of agent. Examples with the psych-verbs *amuseren* 'to amuse' and *ergeren* 'to irritate' are given in (108) and (109). As can be seen, neither BARE/DET-INF nor ING- nor GE-nominalization of these verbs is possible.

(108) a.   Dat boek/Hij amuseerde mij zeer.
            that book/he amused   me   much
      b.   *[(Het) mij amuseren van/door dat boek/hem] was de bedoeling.
             the   me amuse   of/by the book/him   was the intention
      c.   *[De amusering van/door dat boek/hem] was de bedoeling.
             the amusing   of/by   the book/him was the intention
      d.   *[Zijn geamuseer van mij] was de bedoeling.
             his   amusing   of me   was the intention

(109) a.   *Dat boek/Hij ergert   Marie.
             that book/he irritates Marie
      b.   *[(Het) Marie ergeren van/door dat boek/hem] verbaast mij.
             the   Marie irritate of/by   that book/him surprises me

c. *[De ergering van Marie van/door dat boek/hem] verbaast mij.
     the irritating of Marie of/by   that book/him surprises me
d. *[Zijn ge-erger van Marie] verbaast mij.
     his irritating of Marie   surprises me

As in the case of NOM-DAT verbs, NOM-ACC verbs cannot constitute the input to ER-nominalization. This is shown in (110) for the [+HUMAN] versions of examples (108a) and (109b). These examples again suggest that it is the lack of agentivity of the subject that plays a role here, and not the animacy of the subject.

(110) a. *een <mij> amuseerder <van mij>
           a   me   amus-er   of me
      b. *een <Marie> ergeraar <van Marie>
           a   Marie   irritat-er of Marie

IV. The degree of verbalness/nominalness of the nominalization

Nominalization results in forms that have the syntactic distribution of a noun. However, these forms retain a number of the syntactic and semantic characteristics of the input verb. They are in a sense a hybrid category, partly nominal and partly verbal. For each type of nominalization, we will discuss the degree of verbalness/nominalness on the basis of the features in Table 8; cf. Dik (1985a), and also Hoekstra & Wehrmann (1985).

Table 8: Verbal and nominal characteristics of nominalizations

VERBAL PROPERTIES	presence of arguments
	prenominal theme/recipient with objective case
	prenominal recipient-PP
	adverbial modification
NOMINAL PROPERTIES	adjectival modification
	theme with genitive case
	theme/recipient realized as postnominal PP
	definiteness
	indefiniteness
	quantification
	pluralization

It will turn out that ER-nominalizations come closest to what may be thought of as prototypical nouns in the sense that they have all the relevant nominal properties, with the addition of one verbal feature, namely the presence of arguments. Bare infinitival nominalizations, on the other hand, retain almost all verbal features, while exhibiting none of the listed nominal characteristics. They are nominal in the sense that they have the distribution of nouns and that they lack the grammatical features of verbs such as tense or number agreement. The other types of nominalizations hold an intermediate position. The overall picture of nominal and verbal characteristics of deverbal nouns is presented in Section 1.3.1.6.

1.3.1.2. INF-nominalization (Infinitival nominals)

Infinitival nominals (henceforth: INF-nominalizations) are characterized by the fact that they inherit the denotation (namely, state of affairs) and the argument structure of the verb they are derived from. In this sense, they are not fully nominal, which is also reflected by the fact that, unlike most nouns, they can in principle assign case to a theme and/or recipient argument. In the sections below, we will discuss the form of the derived noun, its relation to the base verb and the restrictions on the derivational process; a comprehensive discussion of complementation of INF-nominalizations can be found in Section 2.2.3.2.

1.3.1.2.1. Form of the derived noun

INF-nominalizations constitute the most productive type of nominalization in Dutch: virtually any infinitive, regardless of the type of verb, can be nominalized and thus be given the external distribution of a noun. The examples in (111) and (112) show that this type of category change is achieved by conversion (zero-derivation): it is not morphologically marked. The two sets of examples present two different types of nominalization: in (111) we find bare nominalizations (henceforth: BARE-INF), and in (112) nominalizations preceded by a determiner (henceforth: DET-INF).

(111)   • BARE-INF nominalizations
       a.   Zeilen is leuk.
            sail   is nice
       b.   Jan houdt   van zeilen.
            Jan likes   prt. sail
       c.   Fruit eten is gezond.
            fruit eat   is healthy
            'To eat fruit is healthy.'

(112)   • DET-INF nominalizations
       a.   Het eten van fruit is erg gezond.
            the eat of fruit   is very healthy
            'The eating of fruit is very healthy.'
       b.   Jan vermaakte zich   met   het tekenen van poppetjes.
            Jan amused   himself with   the draw of dolls$_{dim}$
            'Jan amused himself by drawing human figures.'
       c.   Het bonken van de machines was goed te horen.
            the pound   of the engines   was well to hear
            'The pounding of the machines could be heard very clearly.'

1.3.1.2.2. Nominal properties

Apart from the fact that they have the distribution of noun phrases, INF-nominalizations do not exhibit many nominal properties; they rather retain a number of verbal properties. We will illustrate this below by means of article selection, pluralization and modification.

I. Determiners

The examples in (113) show that the determiner of DET-INF nominalizations can be realized by the definite article, a demonstrative, or a possessive pronoun; a genitive form of a proper noun is also possible. These examples further show that DET-INF nominalizations have the feature [+NEUTER]: they take the definite article *het* and the demonstrative determiners *dat* 'that' and *dit* 'this'; cf. Table 1.

(113) a.   Het zeilen verveelde hem nooit.
         the sail   bored   him never
    b.   Dat/$^?$Dit zeilen begint me aardig   te vervelen.
         that/this sail   begins me considerably to bore
         'I'm beginning to get fed up with this sailing.'
    c.   Peters/$^?$Zijn zeilen kost hem veel geld.
         Peter's/his sail   costs him much money

Although DET-INFs can be preceded by a definite determiner, they do not normally co-occur with an indefinite article, as is shown by (114a). Still, there are some cases in which an indefinite article can be used. These concern noun phrases like (114b&b′), which are headed by a nominalization derived from an input verb that denotes an emission of sounds, and in which the infinitive is usually pre- or postmodified.

(114) a.   *Een zeilen verveelde hem nooit.
         a sail   bored   him never
    b.   Een luid ruisen van water werd   hoorbaar.
         a loud rustle of water   became audible
    b′. We hoorden een eigenaardig tikken op zolder.
         we heard   a strange tick on attic
         'We heard a strange ticking in the attic.'

In addition, there are occasional INF-nominalizations that obligatorily combine with the indefinite article. This particular use of the infinitive is either entirely nonproductive, as in the idiomatic constructions in (115a), or very restricted, as in the more or less fixed template *het op een V$_{infinitive}$ zetten* (115b), in which the position V$_{infinitive}$ can be filled only by a limited number of verbs.

(115) a.   Het was er   een (voortdurend) komen en gaan van belangrijke mensen.
         it   was there a   constant   come and go   of important people
         'There was a (constant) coming and going of important people.'
    b.   Hij zette het op een lopen/huilen/schreeuwen.
         he   set   it   on a walk/cry/scream
         'He took to his heels/he turned on the waterworks.'

II. Pluralization, quantification and questioning

Another difference with most nouns is that INF-nominalizations cannot be pluralized. They also differ from true nouns in that they cannot be quantified or questioned. These characteristics are illustrated in (116).

(116) a. *Peter houdt erg   van zeilens.
    Peter loves very much of sail_pl
    b. *De zeilens van Peter kosten hem veel geld.
    the sail_pl of Peter   cost   him much money
    c. *Elk zeilen is weer een nieuw avontuur.
    every sail is again a new adventure
    d. *Welk zeilen vind   jij nu het prettigst   (hier of op het IJsselmeer)?
    which sail   consider you PRT most pleasant here or on the IJsselmeer

III. Modification

All INF-nominalizations denote abstract entities, more specifically states of affairs: they refer to the event or situation denoted by the verb from which they derive. As such, they exhibit a number of properties characteristic of verbs. First, (117) shows that INF-nominalizations may be modified for manner, frequency or duration. Second, example (117b) shows that in the DET-INF pattern, the adverbial (= bare) form of the adjective can be used alongside the adjectival form, ending in *-e*. Note that it cannot be established which of the two forms is used in the BARE-INF pattern in (117a), since the *-e* ending only surfaces when the adjective is preceded by a definite determiner.

(117) a. Uitgebreid/regelmatig/lang vergaderen over triviale zaken is nutteloos.
    extensively/frequently/long meet   over trivial matters is pointless
    'Meeting extensively/frequently/long over trivial matters is pointless.'
    b. het uitgebreid(e)/regelmatig(e)/lang(e) vergaderen over triviale zaken
    the extensive(ly)/frequent(ly)/lengthy   meet   over trivial matters
    is nutteloos.
    is pointless

IV. The form of the complement

Unlike what is the case with the deverbal ING-, GE- and ER-nouns, the theme argument of the BARE-INF nominalizations may appear as a noun phrase in prenominal position, as shown in (118a); realizing the theme as a postnominal *van*-PP, as in (118b), is also possible, but this is a less preferred option. Again this is a property typical for verbs, not nouns.

(118)   • BARE-INF nominalizations
    a. Postzegels verzamelen is een onschuldig tijdverdrijf.
    stamps   collect   is an innocent pastime
    'Collecting stamps is an innocent pastime.'
    b. ?Verzamelen van postzegels is een onschuldig tijdverdrijf.
    collecting   of stamps   is an innocent pastime

The preferred pattern for realizing the theme in DET-INF nominalizations like those in (119) is the opposite of that in BARE-INF nominalizations: the theme can appear as a prenominal noun phrase, as in (119a), but it is preferred to have it as a postnominal *van*-PP, as in (119b); see Section 2.2.3.2 for more discussion.

(119)   • DET-INF nominalizations
   a.   ?Het postzegels verzamelen is een onschuldig tijdverdrijf.
        the   stamps   collect   is an innocent pastime
        'The collecting of stamps is an innocent pastime.'
   b.   Het verzamelen van postzegels is een onschuldig tijdverdrijf.
        the   collect   of stamps   is an innocent pastime
        'The collecting of stamps is an innocent pastime.'

1.3.1.2.3. Relation to the base verb

INF-nominalizations can be said to inherit the argument structure of the input verb. Apart from the change in syntactic category (from V to INF-N), the argument structure of the verb remains unaffected by the derivational process: both the number of arguments and their thematic functions remain essentially the same. The only difference is that while the arguments of a verb normally are obligatorily present, those of the derived noun are not. We will illustrate this below for a number of verb types.

I. Intransitive verbs

An INF-nominalization of an intransitive verb always has one argument (typically the agent), although, unlike what is the case with the verbal construction, the realization of the agent is not compulsory. If the agent is realized, it may appear either postnominally in the form of a *van*-PP, or prenominally in the form of a genitive noun phrase or a possessive pronoun. This is illustrated in (120b&b′) for the nominal infinitive derived from the intransitive verb *lachen* 'to laugh'. Observe that, although we are dealing with a case of nominalization, the deverbal noun is given the category INF-N, rather than N, in order to signal the special nature of the nominal infinitive, with its combination of nominal and verbal features.

(120)   • Nominal infinitive derived from an intransitive verb
   a.   LACHEN$_{INF-N}$ (Agent)
        to laugh/laughing
   b.   (Het) lachen (van kinderen) vrolijkt hem op.
         the   laugh of children   cheers   him up
   b′. Jans (harde) lachen is irritant.
        Jan's loud   laugh is irritating

II. Transitive verbs

An INF-nominalization of a transitive verb inherits both arguments of the input verb. This is illustrated in (121a) for the INF-nominalizations derived from the verb *verzamelen* 'to collect'. Example (121b) shows that, just as in the case of the agent, realization of the theme is optional.

(121)   • Nominal infinitive derived from a monotransitive verb
   a.   VERZAMELEN$_{INF-N}$ (Agent, Theme)
        to collect/collecting
   b.   (Postzegels) verzamelen is een onschuldig tijdverdrijf.
        stamps   collect   is an innocent pastime
        'Collecting stamps is an innocent pastime.'

However, when the agent is realized, the theme is normally obligatorily expressed by means of a prenominal noun phrase or a postnominal *van*-PP. This is illustrated in (122) for cases in which the agent is expressed by means of a prenominal genitive noun phrase or possessive pronoun.

(122) a. ?Peters/Zijn postzegels verzamelen is een onschuldig tijdverdrijf.
        Peter's/his stamps   collect   is an innocent pastime
        'Peter's/His collecting of stamps is an innocent pastime.'
   b. ?Peters/Zijn verzamelen van postzegels is een onschuldig tijdverdrijf.
        Peter's/his collect   of stamps   is an innocent pastime
        'Peter's/His collecting of stamps is an innocent pastime.'

When the agent is expressed as a postnominal PP. its form depends on the realization of the theme: when the theme argument occurs prenominally as a noun phrase, the agent will be expressed by means of a *van*-PP, as shown in (123b); when the theme is realized postnominally as a *van*-PP, the agent will normally be realized by means of a *door*-PP, as shown in (123b). Since (123b) is probably the most unmarked way of expressing the intended contention, we marked the other examples with a question mark.

(123) a. ?Het postzegels verzamelen (van Peter) is een onschuldig tijdverdrijf.
        the stamps   collect   of Peter   is an innocent pastime
        'Peter's collecting of stamps is an innocent pastime.'
   b. Het verzamelen van postzegels (door Peter) is een onschuldig tijdverdrijf.
        the collect   of stamps   by Peter   is an innocent pastime
        'The collecting of stamps by Peter is an innocent pastime.'

It must be noted, however, that in construction with a postnominal theme PP introduced by *van*, it is sometimes possible to add an agent PP also introduced by *van*. Example (124a) shows that such constructions are fully acceptable only when the determiner takes the form of a demonstrative. The contrast between (124a) and (124b) furthermore suggests that the theme PP must contain an indefinite noun phrase. This restriction may be due to the fact that in the case of a definite noun phrase, the second *van*-PP is likely to be interpreted as modifying the noun *postzegels*, i.e., with Peter as the possessor of the stamps; see Section 2.2.3.2.1 for more details.

(124) a. Dat/??Het verzamelen van postzegels van Peter is een ware obsessie.
        that/the collect   of stamps   of Peter   is a true obsession
         'This collecting of stamps by Peter is a true obsession.'
   b. ?*Dat/Het verzamelen van de postzegels van Peter is een ware obsessie.

III. Ditransitive verbs

Deverbal nouns derived from ditransitive verbs also inherit the argument structure of the input verb, but instances where all three arguments are explicitly mentioned are not very common: realization of the recipient (and the agent) is typically optional, whereas the theme argument is normally present. Like the theme argument, the recipient may appear in prenominal position, in which case it may take the form of a noun phrase as in (125b). As in clauses, the recipient can also be

realized as an *aan*-PP, in which case it may occur either in pre- or postnominal position, as shown by (125b′). When the theme argument is realized as *van*-PP, the recipient must also appear in postnominal position, as shown by (125b″).

(125) • Nominal infinitive derived from a ditransitive verb

    a.   SCHENKEN$_{INF-N}$ (Agent, Theme, Recipient)
        to donate/donating

    b.   De kerk   geld   schenken is een goede zaak.
        the church money donate   is a good thing

    b′. Geld   <aan de kerk> schenken <aan de kerk> is een goede zaak.
        money   to the church donate   is a good thing

    b″. Het schenken van geld   aan de kerk   is een goede zaak.
        the   donate   of money   to the church is a good thing

IV. Unaccusative verbs

°Unaccusative verbs can also be the input for infinitival nominalization. The theme argument is inherited from the input verb, but is normally optionally expressed. The theme argument cannot occur as a prenominal noun phrase, but must be realized as a postnominal *van*-PP, as is shown by (126b′&b″). Since BARE-INF nominalizations prefer the realization of their argument as a prenominal noun phrase, they only occur when the theme argument is left implicit, as in the generic example in (126b).

(126) • Nominal infinitive derived from an unaccusative verb

    a.   VALLEN$_{INF-N}$ (Theme)   b′. *(het) bladeren vallen
        to fall/falling   the   leaves   fall

    b.   Vallen is pijnlijk.   b″. het vallen van bladeren
        fall   is painful   the fall   of leaves

V. Verbs with a PP-complement

Verbs such as *jagen op* 'to hunt', which select a PP-theme, can also be nominalized. Again the nominalized structure may take the form of a BARE-INF or a DET-INF. In either case the preposition selected by the input verb is inherited by the nominalization. In the BARE-INF nominalization in (127b), the PP-themes are acceptable both in pre- and in postnominal position, whereas in the DET-INF nominalization in (127b′) there is a clear preference for placing the PP-theme in postnominal position.

(127) • Nominal infinitive derived from a verb selecting a PP-theme

    a.   JAGEN OP$_{INF-N}$ (Agent, Theme)
        to hunt/hunting

    b.   <Op groot wild> jagen <op groot wild> is een populair tijdverdrijf.
         on big game   hunt   is a popular pastime
        'Hunting big game is a popular pastime.'

    b′. Het <$^{?}$op groot wild> jagen <op groot wild> is een populair tijdverdrijf.
        the   on big game   hunt   is a popular pastime
        'Hunting big game is a popular pastime.'

1.3.1.2.4. Restrictions on the derivational process

INF-nominalization is an almost fully productive process in the sense that it is possible with most verbs. As is shown in (128), repeated from (102), it can even take the perfect auxiliaries and the modal verbs as its input.

(128) a.   [Het gelezen hebben van zo'n boek] is niet voldoende
        the   read have   of such a book is not enough
        om je   taalkundige te noemen.
        to   yourself linguist   to call
        'Having read such a book is not enough to call yourself a linguist.'
    b.   [Het kunnen rijden   met een auto] is een voorwaarde voor deze baan.
        the   be.able drive   with a car   is a requirement   for this job
        'Being able to drive a car is a condition for this job.'

INF-nominalization is also possible with inherently reflexive verbs like *zich bedrinken* 'to get drunk'. When an antecedent for the pronoun is present, the antecedent determines the form of the reflexive; in (129a&b), for example, the reflexive is realized as *zich*, due to the presence of the third person antecedent *Jan*. When no antecedent is present, the generic reflexive *je* is used, as in (129c).

(129) a. ^(?)Jans zich   voortdurend bedrinken is ziekelijk.
        Jan's REFL continuously get.drunk is morbid
    b. ^(?)Het zich   voortdurend bedrinken van/door Jan is ziekelijk.
        the REFL continuously get.drunk of/by Jan   is morbid
    c. Het je   voortdurend   bedrinken is ongezond.
        the REFL   continuously get.drunk is unhealthy

Note that the reflexive pronoun must be in prenominal position; the examples in (130), where the reflexive is realized in a postnominal *van*-PP, are ungrammatical. It is not clear whether this is a syntactic property of the construction, given that the reflexive *zich* normally only occurs as the complement of an adposition when the latter is stressed. The fact that the examples become somewhat better when we make the °weak form *zich* heavier by adding the emphatic morpheme *zelf* 'himself', suggests that we are dealing with a phonological restriction.

(130) a. Jans voortdurend bedrinken van zich *(zelf) is ziekelijk.
    b. Het voortdurend bedrinken van zich *([?]zelf) van/door Jan is ziekelijk.
    c. Het voortdurend bedrinken van je *([?]zelf) is ongezond.

The fact that (unlike what is the case with the other types of nominalizations) the deverbal nouns in (128) and (129) are grammatical shows that the process of INF-nominalization is extremely productive. However, remember that as is the case for the other types of nominalization, an infinitival nominal cannot take a raising verb or an object-experiencer verb as its input; cf. Section 1.3.1.1.

1.3.1.2.5. The degree of verbalness/nominalness

Both types of INF-nominalization retain all the verbal properties listed in Table 9. Thus, INF-nominalizations have arguments, and these arguments can be realized as

nominal objects in prenominal position. The fact illustrated in (117) that INF-nominalizations can be modified by means of an adverbial phrase also points in the direction of verbal status.

While retaining their verbal properties, INF-nominalizations acquire few exclusively nominal ones: the two subtypes cannot co-occur with indefinite determiners or quantifiers, and both lack the ability to undergo pluralization. Still, DET-INF (but not BARE-INF) nominalizations do exhibit some of the nominal characteristics in Table 9: they can be modified by an adjective, can be preceded by the definite article *het* or a demonstrative/possessive pronoun, and are compatible with a theme-PP in postnominal position.

Table 9: The degree of verbalness/nominalness of INF-nominalizations

PROPERTIES		BARE-INF	DET-INF
VERBAL	presence of arguments	yes	yes
	prenominal theme/recipient with objective case	yes	yes
	prenominal recipient-PP	yes	yes
	adverbial modification	yes	yes
NOMINAL	adjectival modification	?	yes
	theme with genitive case	no	no?
	theme/recipient realized as postnominal PP	no	yes
	definiteness	—	yes
	indefiniteness	—	no
	quantification	no	no
	pluralization	no	no

On the basis of these data, we may conclude that although both BARE-INF and DET-INF have the external distribution of nouns, they are to a considerable degree still verbal. Table 9 also shows that there is a difference between BARE-INF and DET-INF in the sense that BARE-INF nominalizations are more verbal than DET-INF nominalizations. For a comparison of the INF-nominalizations with other types of nominalization, see Table 17 in Section 1.3.1.6.

1.3.1.3. ING-*nominalization*

Deverbal nouns ending in *–ing* as well as a small set of other, less productive affixes (henceforth: ING-nominalizations) are characterized by the fact that, like INF-nominalizations, they can be seen as inheriting the denotation (namely, state of affairs) and the argument structure of the verb they are derived from. In this sense, they retain verbal properties and hence are not fully nominal. Unlike INF-nominalizations, however, ING-nominalizations have lost the ability for the base verb to assign case to a theme and/or recipient argument, which must therefore be realized as a postnominal PP. This section will discuss the form of the derived noun, its relation to the base verb and the restrictions on the derivational process. In Section 2.2.3.3, a comprehensive discussion of complementation of ING-nouns can be found.

1.3.1.3.1. Form of the derived noun

The term ING-nominalization refers to the process that derives abstract deverbal nouns denoting the same state of affairs as the base verb. It is however not the case that all so-called ING-nominalizations involve the suffix *-ing* (cf. I below), and neither is it the case that all nouns derived by means of the suffix *-ing* are ING-nouns (cf. II and III below).

I. Types of ING-nominalization

The most frequently used suffix in the formation of abstract deverbal nouns is *–ing*. This suffix is commonly used to derive a noun denoting the same state of affairs as that denoted by the input verb. Like INF-nominalizations, ING-nominalizations can be said to inherit the arguments of the base verbs. Two examples, one with an unaccusative verb and one with a transitive verb, are given in (131a&b).

(131) a. De stijging van de prijzen veroorzaakte paniek.
       the rise   of the prices   caused   panic
     b. De vernietiging van de steden door de vijand eiste veel slachtoffers.
       the destruction of the cities   by the enemy cost   many victims

Although many verbs have a corresponding ING-nominalization, the process cannot indiscriminately be applied to all verbs, that is, unlike INF-nominalization, ING-nominalization is not fully productive. Furthermore, the form of the resulting nominalization is not fully predictable; the set of ING-nominalizations includes the forms in Table 10. With the exception of the class of nouns ending in *-ing*, all classes are the result of nonproductive processes, with the endings *-age* and *-atie* typically attaching to verbs of non-Germanic origin. Though they do not end in *-ing*, we count these nouns as ING-nominalizations on the basis of their denotation (state of affairs) and their syntactic behavior (distribution, complementation etc.).

Table 10: Types of ING-nominalizations

AFFIX	VERBAL STEM	EXAMPLE	TRANSLATION
-ing	*stijgen* 'to rise'	*stijging*	rise
	vernietigen 'to destroy'	*vernietiging*	destruction
-age	*fabriceren* 'to manufacture'	*fabricage*	manufacture
	monteren 'to assemble'	*montage*	assembly
-atie	*argumenteren* 'to argue'	*argumentatie*	argumentation
	isoleren 'to isolate'	*isolatie*	isolation
	repareren 'to repair'	*reparatie*	repair
-ering	*automatiseren* 'to automate'	*automatisering*	automation
	isoleren 'to isolate'	*isolering*	isolation
	formuleren 'to formulate'	*formulering*	formulation
-st	*komen* 'to come'	*komst*	coming
	vinden 'to find'	*vondst*	discovery/finding
	vangen 'to catch'	*vangst*	catch

Semantically, the forms in (132) also seem to belong to the class of ING-nominalization. However, since formally they correspond to either the stem or the infinitival form of the verb, it seems hard to determine whether they are derived from the verbs or whether the verbs are derived from them.

(132) a.   Nominalizations of verbs of saying:
           vraag 'question', *bevel* 'order', *verzoek* 'request'
      b.   Nominalizations of verbs of believing:
           geloof 'belief', *twijfel* 'doubt', *vermoeden* 'suspicion'

Finally, there are completely idiosyncratic nominal forms like the ones in (133). Since it does not seem plausible that these forms are really derived from the verbs in the first column of the table in (133), it seems reasonable to assume that these verbs cannot be the input of ING-nominalization due to lexical blocking. Nevertheless, we will treat the idiosyncratic nominal forms on a par with the ING-nominalizations.

(133) Regular ING-nouns blocked by idiosyncratic forms

VERB	IDIOSYNCRATIC FORM	"BLOCKED" REGULAR FORM
bieden 'to offer'	*bod* 'offer'	**bieding*
jagen 'to hunt'	*jacht* 'hunt'	**jaging*
aannemen 'to assume'	*aanname* 'assumption'	**aanneming*
stelen 'to steal'	*diefstal* 'theft'	**steling*
rijden 'to drive'	*rit* 'drive'	**rijding*
vliegen/vluchten 'to fly/flee'	*vlucht* 'flight'	**vlieging/*vluchting*

II. Result nouns ending in -ing

Not all nouns ending in *-ing* belong to the category of ING-nominalizations. Many nouns ending in *-ing* have acquired a specialized meaning, which, even though this meaning is still related to the meaning of the input verb, is associated with the nominal rather than the verbal aspects of the nouns. This particular group of derived nouns is often referred to as "result" nouns as opposed to the "verbal" nouns illustrated in Table 10: rather than referring to the event in question, such result nouns denote the (concrete or abstract) result of that event. Examples of result nouns denoting concrete objects are given in (134).

(134)   • Result nouns ending in *-ing*
      a.   *verzameling*   'collection'
      b.   *uitvinding*   'discovery'
      c.   *beschadiging*   'damage'
      d.   *vertaling*   'translation'

These nouns do not refer to the activity of collecting, discovering, damaging and translating as such, but to the result of these activities. Although perhaps less clearly so, the same phenomenon is also illustrated by the noun *onderneming* 'company' and *vereniging* 'society/club' inasmuch as a company can be seen as the result of some enterprise and the club as the result of the uniting of a group of people. Example (135), taken from Dik (1985a), further shows that the noun *onderneming*

'enterprise', although related to the state of affairs denoted by the input verb
ondernemen 'to undertake', has acquired a specialized meaning that makes it
impossible to refer to the actual event itself by means of this noun, which is
therefore not an ING-noun.

(135)   Om de slachtoffers te bereiken moet men een gevaarlijke tocht over het ijs
            in order to the victims to reach must one a dangerous journey over the ice
            ondernemen. Het ondernemen/*De onderneming van deze tocht ...
            undertake   The undertake/The undertaking   of this journey
            'To reach the victims a dangerous journey across the ice had to be
            undertaken. The undertaking of this journey ...'

Abstract result nouns, although intuitively closely related to the input verb, are not
true ING-nominalizations either. Again, they fail to denote the state of affairs
denoted by the verb. Examples are the lexicalized nouns in (136).

(136)   • Lexicalized nouns ending in *–ing*
       a. *veroordeling*   'conviction'
       b. *verbazing*   'surprise'
       c. *verontwaardiging* 'indignation'

The (a)-examples in (137) show that these nouns can be modified by postnominal
van-PPs and prenominal genitive noun phrases and possessive pronouns, but, unlike
what is the case with the INF-nominalization in (137b), these modifiers will not
primarily be interpreted as arguments of the head noun. Thus in (137b) the jury is
having a hard time reaching a verdict: it is the act of convicting, a state of affairs,
that presents problems. In the (a)-examples, on the other hand, it is the conviction
itself, the result of an act of convicting performed by someone else that the jury
finds hard to take. This implies that the relation between head noun and modifiers in
the (a)-examples is one of possession (in addition to that of noun-theme or noun-
agent).

(137) a.   De jury had moeite met de veroordeling van de beklaagde.
            the jury had trouble with the conviction   of the defendant
            'The jury felt qualms about the defendant's conviction.'
       a′. De jury had moeite met zijn veroordeling.
            the jury had trouble with his conviction
       b.   De jury had moeite met het veroordelen van de beklaagde.
            the jury had trouble with the convict   of the defendant
            'The jury had trouble convicting the defendant.'

     For the sake of completeness, let us add that some of the nominals ending in
-ing mentioned earlier are ambiguous between an abstract and a concrete reading. In
(138) this is shown for the nouns *uitvinding* 'discovery' and *vereniging*
'society/club': the primeless examples exemplify their (concrete) result reading, and
the primed examples their use as ING-nominalizations; cf. Grimshaw (1990).

(138) a.   De uitvinding [van Bell]$_{Poss}$ hangt aan de muur.
         the invention of Bell   hangs on the wall
         'Bell's invention hangs on the wall.'

     a′.   De uitvinding [van de telefoon]$_{Theme}$ [door Bell]$_{Agent}$ betekende
         the invention   of the telephone   by Bell   meant
         een doorbraak in telecommunicatie.
         a breakthrough in telecommunication

     b.   De vereniging telt   tweehonderd leden.
         the society   has   two hundred members

     b′.   De vereniging   [van de twee landen]$_{Agent}$ vond plaats in 1989.
         the unification   of the two countries   took place in 1989

III. Person and object denoting names ending in -ing

There are also person and object denoting names ending in *-ing*, which, although semantically related to the verb from which they derive, do not denote the result of the state of affairs denoted by the verb. Examples of such nouns are person nouns like *beschermeling* 'protégé', *zuigeling* 'baby', *leiding* 'leadership/management' and object denoting nouns like *leuning* 'railing', *sluiting* 'fastener', *leiding* 'pipe/wire'. These nouns behave entirely like normal, basic, nouns: not only do they display all the typically nominal characteristics like (in)definiteness, pluralization, etc., but in addition, they lack an argument structure: despite their obvious relation to some verb, there is no inheritance of arguments. This is illustrated for some of these nouns in (139) and (140).

(139) a.   Mijn oom leidt een groot orkest.
         my uncle   leads a big orchestra

     b.   het leiden/*de leiding   van het orkest   door mijn oom
         the lead/the management of the orchestra by my uncle
         'the leading of the orchestra by my uncle'

(140) a.   Jan leunde op de balustrade.
         Jan leaned on the railing

     b.   het leunen/*de leuning van Jan op de balustrade
         the lean/railing   of Jan   on the railing

     c.   Jans leunen/*leuning op de balustrade
         Jan's lean/railing   on the railing
         'Jan's leaning on the railing'

IV. Summary

Nouns ending in *-ing* can have a number of denotations; the various possibilities are listed in Table 11. In the remainder of this section, we will be concerned only with what we called ING-nominalizations, that is, with deverbal nouns denoting a state of affairs.

Table 11: Deverbal nouns ending in -ing

		VERBAL STEM	DERIVED FORM
STATES OF AFFAIRS		*stijgen* 'to rise'	*stijging* 'rise'
		aarzelen 'to hesitate'	*aarzeling* 'hesitation'
		behandelen 'to treat'	*behandeling* 'treatment'
RESULTS	ABSTRACT	(*zich*) *verontwaardigen* 'to be indignant'	*verontwaardiging* 'indignation'
		(*zich*) *verbazen* 'to surprise'	*verbazing* 'surprise'
		veroordelen 'to convict'	*veroordeling* 'conviction'
	CONCRETE	*beschadigen* 'to damage'	*beschadiging* 'damage'
		uitvinden 'to invent'	*uivinding* 'invention'
		verzamelen 'to collect'	*verzameling* 'collection'
OBJECTS	[+HUMAN]	*beschermen* 'to protect'	*beschermeling* 'protégé'
		leiden 'to lead'	*leiding* 'leadership'
		verbannen 'to exile'	*verbanneling* 'exile'
	[-HUMAN]	*leunen* 'to lean'	*leuning* 'railing'
		leiden 'to direct'	*leiding* 'pipe/wire'
		zitten 'to sit'	*zitting* 'seat/session'

For completeness' sake, note that there are also nouns ending in -*ing* that are not derived from verbs, such as *dorpeling* 'villager' and *ellendeling* 'wretch' (which have a nominal base), *stommeling* 'fool' and *zwakkeling* 'weakling' (which have an adjectival base), and *tweeling* 'twins' (which has a numeral base). As these nouns do not involve inheritance of arguments, and behave like nominals in all respects, they will not be included in the following discussion.

1.3.1.3.2. Nominal properties

Like INF-nominalizations, ING-nominalizations can be used in all regular NP positions. Moreover, they exhibit most of the other nominal characteristics.

I. Determiners

ING-nominalizations can be both indefinite and definite, and may co-occur with various definite [-NEUTER] determiners like the definite article *de*, the demonstratives *deze/die* 'this/that' and possessive pronouns. They can also be modified by means of quantifiers like *elke/iedere* 'each/every', *alle* 'all', *veel/weinig* 'many/few' and cardinal numerals. Some examples are given in (141).

(141) a.　Een behandeling van deze patiënt zou　succesvol kunnen zijn.
　　　　 a treatment　　　of this patient　should successful could　be
　　　　 'A treatment of this patient could be successful.'
　　 b.　De/Deze/Zijn behandeling van de patiënt bleek　succesvol.
　　　　 the/this/his treatment　　　　of the patient proved successful
　　　　 'The/This/His treatment of the patient proved successful.'
　　 c.　Elke behandeling　van deze patiënt　veroorzaakte nieuwe complicaties.
　　　　 every treatment　of this patient　　caused　　　new complications
　　　　 'Every treatment of this patient caused new complications.'

II. Wh-*movement and Topicalization*

ING-nominalizations can also be preceded by interrogative determiners like *welke*, and (142a) shows that they can be *wh*-moved as a result. Example (142b) shows that they can also be topicalized.

(142) a.   Welke behandeling van deze patiënt zou   het meest succesvol zijn?
             which treatment   of this patient   would the most successful be
             'Which treatment of this patient would be most successful?'
        b.   Deze behandeling van de patiënt vond de arts   afdoende.
             this treatment   of the patient   found the doctor sufficient
             'The doctor considered this treatment of the patient sufficient.'

III. Pluralization

Pluralization of ING-nouns is possible, but often leads to a marked result. In the examples in (143a&b), for instance, with explicit mention of the theme argument, Dutch seems to prefer the use of a compound noun.

(143) a.   ?De verhogingen/dalingen van de prijzen veroorzaakten paniek.
             the increases/decreases   of the prices   caused   panic
             'The increases/decreases in the prices caused a total panic.'
        b.   De prijsverhogingen/prijsstijgingen veroorzaakten paniek.
             the price increases/price rises   caused   panic
             'The increase in prices caused a total panic.'

In contexts with implied (contextually recoverable) arguments, or with adjectivally modified ING-nouns, on the other hand, pluralization seems to be fully acceptable; this is shown in the examples in (144).

(144) a.   De prijzen stegen dit jaar twee keer. Deze verhogingen leidden tot paniek.
             the prices rose this year twice   these rises   led   to panic
             'The prices rose twice this year. All rises caused a total panic.'
        a′. De voorspelde verhogingen van de prijzen veroorzaakten paniek.
             the predicted increases   of the prices   caused   panic
        b.   Beide behandelingen ??(van de patiënten) waren succesvol.
             both treatments   of the patients   were   successful
             'Both treatments (of the patients) were successful.'
        b′. De experimentele behandelingen van de patiënten waren alle succesvol.
             the experimental treatments   of the patients   were   all   successful
             'The experimental treatments of the patients were all successful.'

Generic contexts, too, allow pluralization of ING-nominalizations, as shown by example (145). Recall that the noun *overname* also count as an ING-noun due to its abstract denotation; cf. 1.3.1.3.1, sub I.

(145) a.   Alle overnames door Philips bleken   onsuccesvol.
             all take.overs   by Philips   proved unsuccessful
             'All take-overs by Philips proved unsuccessful.'

    b.   Eerdere mislukkingen konden hem niet ontmoedigen.
        earlier failures   could   him not discourage
        'Earlier failures didn't discourage him.'

Note, finally, that pluralization of result and person/object denoting nouns ending in –*ing* like *onderneming* 'company/enterprise', *leiding* 'management' or *leuning* 'railing' (cf. Section 1.3.1.3.1, sub II/III) is never problematic. This may provide additional justification for not including these nouns in the set of ING-nouns.

IV. Modification

ING-nominalizations also behave like nominals with respect to adjectival modification: the obligatory presence of the suffix -*e* on the prenominal adjectives in (146a&b) shows that we are indeed dealing with adjectival modification of a nominal, and not with adverbial modification. Note, however, that the primed examples show that modification by means of adjectives expressing frequency or duration is also possible, which is related to the verbal quality of these nominals.

(146) a.   de sterk*(e)/voorspeld*(e) stijging van de prijzen
          the steep/predicted   increase in of the prices
     a′.   de regelmatig*(e)/voortdurend*(e) stijging van de prijzen
          the frequent/constant   increase of the prices
     b.   de succesvol*(le)/uitgebreid*(e) behandeling van de patiënt
          the successful/extensive   treatment   of the patient
     b′.   de regelmatig*(e)/voortdurend*(e) behandeling van de patiënt
          the frequent/constant   treatment   of the patient

1.3.1.3.3. Relation to the base verb

ING-nominalizations can be said to inherit the argument structure of the input verb. Apart from the change in syntactic category (from V to ING-N), the argument structure of the input verb remains unaffected by the derivational process: both the number of arguments and their thematic functions remain essentially the same. The only difference is that while the arguments of the input verb normally are obligatorily present, those of the derived noun are not. We will illustrate this below for a number of verb types.

I. Intransitive verbs

As far as we know, there are no ING-nominalizations derived from intransitive verbs; see 1.3.1.3.4 for discussion.

II. Transitive verbs

An example of ING-nominalization of a transitive verb is given in (147), where the deverbal noun *behandeling* 'treatment' inherits the argument structure from the monotransitive verb *behandelen* 'to treat'; the derived form is given the category ING-N, rather than N, in order to express its special nature, with its combination of nominal and verbal features. The agent argument can be realized either by a prenominal genitive, as in (147b), or by a postnominal *door*-PP, as in (147b′). In contrast to what is the case in INF-nominalizations, the theme argument of an ING-

nominalization cannot appear in the form of a prenominal accusative noun phrase: it must appear either postnominally in the form of a *van*-PP, as in (147b), or prenominally in the form of a possessive pronoun or genitive noun phrase, as in (147b′). The argument structure of the base verb remains basically unchanged; see Section 2.2.3.3.1 for more details.

(147)   • ING-nominalization derived from a monotransitive verb
      a.   BEHANDELING_{ING-N} (Agent, Theme)

| a. | BEHANDELING_{ING-N} (Agent, Theme) | | | | |

b.   Jans_{Agent} behandeling van de patiënt_{Theme} bleek uiterst succesvol.
      Jan's treatment of the patient proved extremely successful

b′. Jans_{Theme} behandeling door de dokter_{Agent} was uiterst succesvol.
      Jan's treatment by the doctor was extremely successful

III. Ditransitive verbs

ING-nominalizations of ditransitive verbs like *uitreiken* 'to present' also preserve the argument structure of the base verb, although instances of such nominalizations with all three arguments expressed are rare. Here, too, the theme argument typically appears postnominally as a *van*-PP. The agent and recipient argument (if present) take the form of, respectively, a *door*- and an *aan*-PP, which must also occur in postnominal position.

(148)   • ING-nominalization derived from a ditransitive verb
      a.   UITREIKING_{ING-N} (Agent, Theme, Recipient)
          presentation
      b.   De uitreiking van de prijzen (aan de winnaars) (door de burgemeester).
          the presentation of the prizes to the winners by the major

IV. Unaccusative verbs

The derived ING-nominalization *aankomst* 'arrival' in (149) is given an argument structure similar to that of the °unaccusative input verb *aankomen* 'to arrive'. The two (b)-examples show that the inherited argument may appear either post-nominally in the form of a *van*-PP or prenominally in the form of a genitive noun phrase or a possessive pronoun.

(149)   • ING-nominalization derived from an unaccusative verb
      a.   AANKOMST_{ING-N} (Theme)
          arrival
      b.   De aankomst van Jan op Schiphol trok veel aandacht.
          the arrival of Jan on Schiphol attracted much attention
      b′. Jans/zijn aankomst op Schiphol trok veel aandacht.
          Jan's/his arrival on Schiphol attracted much attention

V. Verbs with a PP-complement

ING-nominalizations can also be derived from verbs selecting a PP-theme like *jagen op* 'to hunt'. As can be seen from example (150), the preposition selected by the input verb is inherited by the ING-nominalization. In these constructions the theme-PP can only occur in postnominal position.

(150)   • ING-nominalization derived from a verb selecting a PP-theme
  a.   JACHT OP_{ING-N} (Agent, Theme)
        hunt for
  b.   Jans jacht op groot wild was illegaal.
        Jan's hunt for big game was illegal
        'Jan's hunting big game was illegal.'

VI. Noun incorporation (compounding)

It is quite common for the theme arguments of an ING-nominalization to be incorporated into the noun. As shown by example (151), this is possible regardless of the type of input verb. As may be expected, incorporation of this kind results in reduction of the number of arguments of derived noun, as the argument slot of the incorporated argument is no longer available.

(151) a.   De patiëntenbehandeling *(van de dagpatiënten) was ontoereikend.
        the patient's treatment   of the day patients   was inadequate
        'The treatment of patients left much to be desired.'
  b.   De prijsuitreiking   *(van de Oscars) is volgende week.
        the prize presentation   of the Oscars   is next week
        'The presentation of prizes is next week.'
  c.   De plotselinge prijsstijging *(van de benzineprijs) veroorzaakte veel paniek.
        the sudden price increase   of the gas prices   caused   much panic
        'The sudden increase in prices caused a lot of panic.'
  d.   De vossenjacht *(op jonge vossen) zou   verboden moeten worden.
        the fox hunt   on young foxes   should prohibited must   be
        'The foxhunt should be prohibited.'

Note that examples like (152) are acceptable, but this does not refute the claim that incorporation results in valency reduction, since the noun phrase *de benzine* 'the petrol' is clearly not the theme of the construction; cf. example (152b).

(152) a.   de plotselinge prijsstijging van de benzine
        the sudden price increase   of the petrol
  b.   De prijs van de benzine/*De benzine stijgt.
        the price of the petrol/the petrol   increases

1.3.1.3.4. Restrictions on the derivational process

ING-nominalization differs from INF-nominalization in that it is only partially productive. Among the verbs that do not allow ING-nominalization are the object-experiencer verbs, auxiliary/modal verbs, and the raising verbs, which do not allow any form of nominalization; cf. Section 1.3.1.1. In addition, there are a number of other groups of verbs that seem to defy ING-nominalization.

I. Intransitive verbs

Intransitive verbs do not allow ING-nominalization: the intransitive verbs given in the primeless examples of (153) do not have a corresponding ING-noun. The deverbal nouns in the primed examples of (153) preceded by the mark "#" do exist,

but not with the intended meaning, that is, they do not denote the same state of affairs as their verbal stem.

(153)   • ING-nominalization derived from an intransitive verb
    a.   *dansen* 'to dance'   a′. **dansing*
    b.   *dromen* 'to dream'   b′. **droming*
    c.   *hoesten* 'to cough'   c′. **hoesting*
    d.   *huilen* 'to cry'   d′. **huiling*
    e.   *lachen* 'to laugh'   e′. **laching*
    f.   *morren* 'to grumble'   f′. **morring*
    g.   *slapen* 'to sleep'   g′. **slaping*
    h.   *spelen* 'to play'   h′. *#speling*
    i.   *wandelen* 'to walk'   i′. *#wandeling*

A possible exception might be the ING-noun *aarzeling* 'hesitation', as exemplified in (154). It is, however, far from clear that this noun is a true ING-nominalization. First of all, the noun *aarzeling* also has a fully lexicalized form, which can be used without an argument. Second, it might be argued on the basis of the (a)-examples in (154) that the verb *aarzelen* 'to hesitate' takes an optional CP- or PP-complement, and as such does not belong to the class of true intransitives.

(154) a.   Jan aarzelde ($^?$erover) om   de beslissing te nemen.
           Jan hesitated   about.it COMP the decision   to take
           'Jan hesitated to take the decision'
      a′. Jan aarzelde ($^?$over de beslissing).
           Jan hesitated   about the decision
           'Jan hesitated to take the decision/about the decision.'
      b.   Jans aarzeling   om de beslissing te nemen/over de beslissing
           Jan's hesitation COMP the decision to take/about the decision

II. Inherently reflexive verbs

Example (155) illustrates that inherently reflexive verbs normally cannot undergo ING-nominalization. This is not really surprising given that Section 1.3.1.2.4 has shown that the reflexive pronoun cannot occur postnominally in INF-nominalizations but must be realized in prenominal position. Since ING-nominalizations only take post-nominal complements, the impossibility of ING-nominalization of inherently reflexive verbs is therefore exactly what one would expect. It must be noted, however, that adding the emphatic element *zelf*, which corresponds to English *himself* in *he himself*, does not improve the result of the primed examples in (155), which means that in this case we cannot assume that the restriction is of a phonological nature.

(155) a.   Hij schaamde   zich over/voor zijn gedrag.
           he   was.ashamed REFL about/for his behavior
           'He was ashamed of his behavior.'
      a′. *Zijn schaming   van zich (zelf) over/voor zijn gedrag   was terecht.
           his   being.ashamed of REFL   about/for his behavior was right

b. Hij vergiste   zich in de weg.
    he   was mistaken REFL in the route
    'He was.mistaken in the strength of the opponent.'

b′. *Zijn vergissing   van zich (zelf) in de route bleek   fataal.
     his   being.mistaken of REFL   in the route proved fatal

Note in passing that the noun *vergissing* 'mistake' does exist as a "non-verbal" noun, in which case it does not readily take a PP-complement: *Zijn vergissing bleek fataal* 'His mistake proved fatal'. The ING-noun *verbazing* 'surprise', derived from the inherently reflexive verb *zich verbazen (over)* 'to be surprised (about)', patterns somewhat differently: example (156b) shows that *verbazing* does not allow the expression of the reflexive pronoun but does allow the expression of the PP-complement.

(156) a. Peter verbaasde   zich   over de sterkte van zijn tegenstander.
          Peter surprised   REFL   about the strength of his opponent
          'Peter was surprised about his opponent's strength.'

b. Peters   verbazing (*van zich) over de sterkte van zijn tegenstander
    Peter's surprise   (of REFL)   about the strength of his opponent
    'Peter's surprise about his opponent's strength'

As can be seen in example (157), ING-nominalization is possible when the base verb is not necessarily inherently reflexive. Verbs like *verzorgen* 'to take care' and *verdedigen* 'to defend' can take either the °simplex reflexive *zich*, which can be considered a part of the verb, or the complex form *zichzelf* 'himself', which can be seen as a regular argument of the verb just like the lexical noun phrase *Marie*.

(157) a. Hij verzorgt zich(zelf)/Marie slecht.
          he   treats   himself/Marie   badly

a′. Zijn verzorging van zichzelf/Marie is slecht.
     his treatment   of himself/Marie   is bad

b. Hij verdedigt zich(zelf)/Marie zeer gewiekst.
    he   defends   himself/Marie   very astutely

b′. Zijn verdediging van zichzelf/Marie was zeer gewiekst.
     his defending   of himself/Marie   was very astute

III. Other restrictions

The classes of verbs in (158) also defy ING-nominalization. Although this list is far from complete, it will give an impression of the nature of the restrictions on this type of nominalization. Again, the nouns preceded by the mark "#" do exist, but not with the intended meaning, that is, they do not denote the same state of affairs as the verbal stem.

(158) a. Verbs of sensory perception: *voelen* 'to feel' (#*voeling*), *tasten* 'to feel' (**tasting*), *luisteren* 'to listen' (**luistering*), *horen* 'to hear' (**horing*), *proeven* 'to taste' (**proeving*), *zien* 'to see' (#*zicht*/*ziening), *kijken* 'to watch' (**kijking*)

b. Verbs of thinking: *denken* 'to think' (**denking*), *menen* 'to think' (#*mening*), *achten* 'to consider' (#*achting*), *vinden* 'to consider' (#*vinding*);

c. Verbs of saying: *beweren* 'to contend' ($^{\#}$*bewering*), *vertellen* 'to tell' ($^{\#}$*vertelling*), *zeggen* 'to say' (*zegging)

d. Stative verbs: *slapen* 'to sleep' (*slaping), *liggen* 'to lie' ($^{\#}$*ligging*), *zitten* 'to sit' ($^{\#}$*zitting*), *haten* 'to hate' (*hating), *blijven* 'to stay' (*blijving), *weten* 'to know' (*weting)

The abstract nouns *haat* 'hatred' and *verblijf* 'stay' do exist, but probably should not be seen as nouns derived from the stative verbs *haten* 'to hate' and *verblijven* 'to stay'; cf. 1.2.2.2.1, sub V, and 2.1.5. Quite a large number of verbs that do not allow ING-nominalization do accept this process after prefixation or incorporation of a particle, though the resulting ING-noun often has a specialized meaning. Some examples are *aantasting* 'infringement', *beproeving* 'ordeal', *herziening* 'revision', *overhoring* 'examination', *bedenking* 'objection', *overdenking* 'contemplation', *verdenking* 'suspicion', *herdenking* 'commemoration', *ontluistering* 'disillusion', *opzegging* 'cancellation', *aanbieding* 'discount', *toename* 'increase', *bevlieging* 'whim', etc.

IV. Accidental gaps and meaning specialization

Even if we take into account the exceptions discussed above, this does not imply general applicability of the process to all remaining verbs, as illustrated by the ungrammaticality of, for instance, *neming (*nemen* 'to take'), *eting (*eten* 'to eat'), *wachting (*wachten* 'to wait'), *vergeting (*vergeten* 'to forget') and, indeed, many more. Since the lexicon does not seem to provide an alternative for these forms, we cannot appeal to "lexical blocking" and must assume that these are cases of accidental "lexical gaps".

Sometimes two forms of derived nouns exist, based on the same verb. In all such cases, however, there is a difference in meaning between the two forms. Moreover, in most cases neither of the two forms is a proper ING-nominalization in the sense that they denote a state of affairs. Some examples are given in (159).

(159) a. *draai* 'turn'   a′. *draaiing* 'rotation'
b. *handel* 'trade'   b′. *handeling* 'action'
c. *roep* 'call'   c′. *roeping* 'vocation'
d. *spel* 'game'   d′. *speling* 'margin/play'
e. *spleet* 'crack'   e′. *splijting* 'splitting'
f. *trek* 'migration/appetite'   f′. *trekking* 'draw'
g. *vergiffenis* 'forgiveness/pardon'   g′. *vergeving* 'forgiveness/pardon'
h. *werk* 'work'   h′. *werking* 'effect'.

For the moment, we have to conclude that the exact nature of the restrictions on the productivity of ING-nominalization remains something of a mystery.

1.3.1.3.5. The degree of verbalness/nominalness

We will end this section on ING-nominalizations with a number of concluding remarks. The first of these concerns the hybrid status of ING-nominalizations, as partly verbal and partly nominal. Table 12 shows that ING-nominalizations are

verbal only to a limited extent, given that these nominalizations have acquired almost all of the specifically nominal characteristics listed.

Table 12: The degree of verbalness/nominalness of ING-nominalizations

VERBAL PROPERTIES	presence of arguments	yes
	prenominal theme/recipient with objective case	no
	prenominal recipient-PP	no
	adverbial modification	no
NOMINAL PROPERTIES	adjectival modification	yes
	theme with genitive case	yes
	theme/recipient realized as postnominal PP	yes
	definiteness	yes
	indefiniteness	yes
	quantification	yes
	pluralization	yes/no

Recall from Section 1.3.1.2.5 that, in contrast, INF-nominalizations retain a large number of verbal properties, while assuming only a few exclusively nominal ones. For instance, with INF-nominalizations the theme argument can be realized as a nominal object in prenominal position, which is an obvious verbal property. Moreover, they can be modified by means of an adverb. ING-nominalizations, on the other hand, are far more nominal: they still share their denotation with that of verbs (state of affairs), and they can be said to inherit the arguments of the base verb, but in all other respects, they behave almost entirely like true nominals. Thus their theme argument appears typically as a postnominal PP. Furthermore, ING-nominalizations only allow modification by means of adjectives and they are compatible with all sorts of definite and indefinite determiners and quantifiers. Only pluralization seems to be restricted in the sense that it is harder when the theme argument is expressed.

1.3.1.4. GE-nominalization

Deverbal nouns prefixed with *ge-* (henceforth: GE-nominalizations) are characterized by the fact that they inherit the denotation (namely, state of affairs) and the argument structure of the verb they are derived from. In this sense, they are not fully nominal, although, unlike INF-nominalizations, they cannot assign case to a theme and/or a recipient argument. They do, however, exhibit the verbal property of expressing durative aspect. This section will discuss the form of the derived noun, its relation to the base verb and the restrictions on the derivational process. In Section 2.2.3.4, a comprehensive discussion of complementation of GE-nouns can be found.

1.3.1.4.1. Form of the derived noun

Prefixation of a verb stem with the affix *ge-*, resulting in the form *ge-*V$_{stem}$, is a reasonably productive nominalization process. GE-nominalizations share their denotation with the verb from which they are derived, that is, they denote states of affairs. Their verbal nature is also reflected in the fact that, like INF- and ING-

nominalizations, they can be said to inherit the arguments of the base verb. Some examples are given in (160).

(160)　　• GE-nouns (denoting state of affairs)
　　　a.　Het gewandel　van de patiënten　in het Vondelpark trok　　veel aandacht.
　　　　　the strolling　　of the patients　　in the Vondelpark attracted　much attention
　　　b.　Het getreiter　van peuters　door grote jongens　is ontoelaatbaar.
　　　　　the bullying　　of toddlers　by big boys　　　　is inadmissible
　　　　　'The pestering of toddlers by big boys is inadmissible.'

As in the case of ING-nominalizations, it is important to realize that not all nouns with the prefix *ge-* are GE-nominalizations. Some nouns starting with *ge-*, although morphologically similar to true GE-nominalizations and semantically still related to the base verb, have acquired a concrete meaning, and can be interpreted as result nouns. Examples are given in (161), which refer to the result of the action of building, baking and verse-writing.

(161)　　• Result nouns preceded by *ge-*
　　　a.　*gebouw* 'building'
　　　b.　*gebak* 'cake'
　　　c.　*gedicht* 'poem'

Although in their prototypical use, the nouns in (161) denote concrete entities, it is still possible to use them as GE-nominalizations. Examples of both uses of the nouns *gebouw* and *gebak* are given in (162): in (162a) the concrete noun *gebouw* is modified by the PP-modifier *op de hoek* 'on the corner'; in (162a′), the abstract noun is complemented by an (inherited) *van*-PP and can be replaced by an INF-nominalization. Similar examples are given in (162b&b′).

(162) a.　Het grote gebouw/*bouwen　op de hoek　　is een bank.
　　　　　the big building　　　　　　　on the corner is a bank
　　　　　'The big building at the corner is a bank.'
　　a′.　Er　　moet een einde　komen aan het gebouw/bouwen van woningen hier.
　　　　　there must an end　　come to the building/build　of houses　　here
　　　　　'The building of houses here ought to be put to a stop.'
　　b.　Het gebak　stond op tafel.
　　　　　the cake　stood on the.table
　　b′.　Het $^?$gebak/bakken　van deze taartjes duurde　lang.
　　　　　the baking/bake　　of these cakes$_{dim}$ took　　long
　　　　　'The baking of these little cakes took a long time.'

The GE-nouns in the primeless examples in (163) are fully lexicalized; their relation with the corresponding verb is no longer obvious.

(163)　　• Lexicalized nouns preceded by *ge-*
　　　a.　het geval　　'the case'
　　　b.　het geschil　'the dispute'
　　　c.　het gewaad　'the gown'

The examples in (164) show that the state-of-affairs reading can be blocked by the lexicalized form in some cases, whereas in other cases it remains available.

(164) a. *het geval   van de bladeren
           the falling   of the leaves
       b. zijn geschil   van de aardappels
           his peeling   of the potatoes
       c. het gewaad   door koud water
           the wading   through cold water

GE-nominalization is fully productive with verbs denoting sound emission, both by [+HUMAN] or [+ANIMATE] and by [-ANIMATE] entities, as is illustrated in (165). It is not hard to find more examples for each set.

(165)   • Verbs of sound emission preceded by *ge-*
       a. Humans: *het gelach van de kinderen* 'the laughing of the children'; *gebabbel*
           'chattering', *gefluister* 'whispering', *gefluit* 'whistling', *gegiechel* 'giggling',
           gehijg 'panting', *gehuil* 'crying', *gejuich* 'cheering', *gekuch* 'couching',
           gemopper 'grumbling', *geschater* 'roaring with laughter', *geschreeuw*
           'shouting', *gezeur* 'nagging', *gezwam* 'drivel', etc.
       b. Animals: *het geloei van de koeien* 'the mooing of the cows'; *geblaf* 'barking',
           gebrul 'roaring', *geloei* 'mooing', *and gespin* 'purring', etc.
       c. Inanimate entities: *het gebonk van de machines* 'the pounding of the
           engines'; *geronk* 'throbbing', *gesnor* 'whirring', *gesuis* 'rustling', and
           gezoem 'buzzing', etc.

For the verbs in (165), too, a distinction can be made between a state-of-affairs reading, in which case we are dealing with a GE-nominalization denoting the action in question, or a result reading, in which case we are dealing with a result noun denoting the sounds resulting from the action in question. Although in many cases the difference may be hard to discern, certain contexts can have a disambiguating effect. An example is given in (166): the (a)-example involves a GE-nominalization and expresses that it is the fact that he cries that annoys me; the (b)-example involves a result noun and expresses that it is the sound of his crying that kept me awake.

(166) a. Zijn gehuil om niets   irriteert mij mateloos.
           his crying   for nothing   annoys me   immensely
       b. Zijn gehuil hield mij uit mijn slaap.
           his crying   kept me out my sleep

1.3.1.4.2. *Nominal properties*

Like INF- and ING-nominalizations, GE-nominalizations can be used in all regular NP positions. Moreover, they exhibit most of the other nominal characteristics.

I. Determiners

GE-nominalizations can be both indefinite and definite, allowing all kinds of definite [+NEUTER] determiners: the definite article *het*, the demonstratives *dit/dat*

'this/that' and the possessive pronouns. They can also be quantified by means of *elke/iedere* 'each/every', *alle* 'all', *veel/weinig* 'many/few' etc. Examples are given in (167).

(167) a.   De vergadering ontaardde in een oeverloos gepraat over politiek.
        the meeting   ended   in an endless   talking about politics
     b.   Dat/Hun oeverloze gepraat over politiek   is nogal irritant.
        that/their endless talking   about politics is rather irritating
     c.   Elk gepraat over politiek   is volslagen zinloos.
        every talking about politics   is utterly pointless
        'All talk about politics is utterly pointless.'

II. Wh-*movement and Topicalization*

GE-nominalizations can also be preceded by interrogative determiners like *welke*, and (168a) shows that they can be *wh*-moved as a result. Example (168b) shows that they can also be topicalized.

(168) a.   Welk gepraat over politiek is   nu   ooit zinvol gebleken?
        which talking about politics has PRT ever useful proved
        'What talk about politics has ever proved useful?'
     b.   Het gepraat dat op de vergadering volgde vond   Jan zinloos.
        the talking   that on the meeting followed found Jan pointless
        'Jan consider the talking following the meeting pointless.'

III. Pluralization

Pluralization of GE-nominalizations is not possible. This is, of course, not surprising, given that GE-nominalizations are substance nouns; cf. Section 1.2.2.1. The fact that some of the concrete *ge*-nouns and lexicalized nouns in (161) and (163) do allow pluralization merely confirms the view that these are not GE-nominalizations. Examples are, respectively, *gebouw(en)* 'building(s)', *gedicht(en)* 'poem(s)', and *geschil(len)* 'dispute(s)' and *gewaad/gewaden* 'gowns'.

IV. Modification

GE-nominalizations also behave like nouns with respect to adjectival modification: the fact that the adjectives prefer the suffix -*e* in definite constructions like (169a&b) shows that we are dealing with attributive modifiers, not with adverbial phrases. Nevertheless, the fact illustrated in the primed examples, that modification by means of adjectives expressing frequency or duration is possible, underlines the verbal quality of these nominals.

(169) a.   het luide/$^?$luid gepraat over politiek
        the loud   talking about politics
     a′. het oeverloze/$^?$oeverloos gepraat over politiek
        the endless   talking   about politics
     b.   het kinderachtige/$^{??}$kinderachtig getreiter van kleine kinderen
        the childish   bullying   of little children
     b′. het voortdurend/$^{??}$voortdurend getreiter van kleine kinderen
        the constant   bullying   of little children

1.3.1.4.3. Relation to the base verb

GE-nominalization can be said to inherit the argument structure of the input verb. Apart from the change in syntactic category (from V to GE-N), the argument structure of the input verb remains unaffected by the derivational process: both the number of arguments and their thematic functions remain essentially the same. The only difference is that while the arguments of the input verb normally are obligatorily present, those of the derived noun are not. We will illustrate this below for a number of verb types.

I. Intransitive verbs

Example (170) provides a GE-nominalization with an intransitive input verb: both the verb *wandelen* 'to stroll' and the GE-nominalization *gewandel* 'strolling' have an argument structure with a position for an agent argument. As can be seen from (170b&b′), the agent can appear either postnominally as a *van*-PP or prenominally as a possessive pronoun or genitive noun phrase. Observe that the derived form is given the label GE-N, rather than N, in order to express the special nature of the derived noun, with its combination of nominal and verbal features.

(170)   • GE-nominalization derived from an intransitive verb
　　a.　GEWANDEL$_{GE-N}$ (Agent)
　　　　strolling
　　b.　het gewandel   van de patiënten$_{Agent}$
　　　　the strolling   of the patients
　　b′.　hun/Peters$_{Agent}$ gewandel
　　　　their/Peter's   strolling

II. Transitive verbs

GE-nominalizations can also take a transitive verb like *treiteren* 'to bully' as input. Despite the change in syntactic category, the argument structure of the verb is inherited in an essentially unchanged form by the derived form *getreiter*: both the number of arguments and their thematic functions remain the same. The verb and the derived noun do differ, however, in that the arguments are obligatorily expressed with the former, but can be left implicit with the latter. The (c)-examples in (171) further show that the theme argument of a GE-nominalization can only be realized in the form of a postnominal *van*-PP; it can appear neither in the form of a prenominal noun phrase (in contrast to INF-nominalizations), nor in the form of a possessive pronoun or genitive noun phrase (in contrast to ER- and ING-nominalizations).

(171)   • GE-nominalization derived from a monotransitive verb
　　a.　GETREITER$_{GE-N}$ (Agent, Theme)
　　　　bullying
　　b.　Jans$_{Agent}$ getreiter van peuters$_{Theme}$ is onaanvaardbaar.
　　　　Jan's   bullying of toddlers   is unacceptable
　　c.　*het peuters$_{Theme}$ getreiter van/door Jan$_{Agent}$
　　　　the toddlers   bullying of Jan
　　c′.　*hun$_{Theme}$ getreiter door Jan$_{Agent}$
　　　　their   bullying by Jan

III. Ditransitive verbs.

The examples in (172a&b) show that GE-nominalizations of ditransitive verbs also leave the argument structure essentially unchanged, although instances of such nominalizations where all three arguments are expressed are fairly rare. The (c)-examples show that, just like the theme argument, the recipient must be expressed as a postnominal PP; it can neither be realized as a prenominal noun phrase nor as a possessive pronoun.

(172)   • GE-nominalization derived from a ditransitive verb
   a.   GEGEEF$_{\text{GE-N}}$ (Agent, Theme, Recipient)
        giving
   b.   het gegeef van cadeaus$_{\text{Theme}}$ aan kinderen$_{\text{Rec}}$ door Sinterklaas$_{\text{Agent}}$
        the giving of presents   to children   by Santa Claus
   c′. *het kinderen$_{\text{Rec}}$ cadeaus$_{\text{Theme}}$ gegeef door Sinterklaas$_{\text{Agent}}$
        the   children   presents   giving by Santa Claus
   c′. *hun$_{\text{Rec}}$ gegeef van cadeaus$_{\text{Theme}}$ door Sinterklaas$_{\text{Agent}}$
        their   giving of presents   by Santa Claus

IV. Unaccusative verbs

Unaccusative verbs cannot be the input for GE-nominalization; cf. Section 1.3.1.4.4.

V. Verbs with a PP-complement

GE-nominalizations can be formed on the basis of verbs selecting a PP-argument. Example (173b) shows that the preposition selected by the verb is inherited by the GE-nominalization.

(173)   • GE-nominalization derived from a verb selecting a PP-theme
   a.   GEJAAG OP$_{\text{GE-N}}$ (Agent, Theme)
        hunting for
   b.   Jans$_{\text{Agent}}$ gejaag op groot wild is onaanvaardbaar.
        Jan's   hunting on big game   is unacceptable
        'Jan's hunting of big game is unacceptable.'

VI. The pejorative effect of GE-nominalization

Unlike other forms of nominalization, the process of GE-nominalization may add specific aspects of meaning to the meaning of the input verb. Thus the result of GE-nominalization is a durative substance noun, which often has a negative connotation. Such derived nouns as *gestaar* 'staring', *gedraaf* 'running' or *gepraat* 'talking', for instance, typically express a certain amount of irritation or condescension ('unfavorable connotation'; Kruisinga 1949) on the part of the speaker. That this pejorative effect is indeed a result of the nominalization process and not due to the semantics of the base verb is illustrated in (174), where GE-nominalization has a negative effect on such neutral base verbs as *praten* 'to talk', *regelen* 'to regulate/arrange' and *wandelen* 'to walk'. Note that use of the expressive demonstrative *dat* 'that' has the effect of enhancing the negative connotation of the deverbal noun.

(174) a. dat gepraat over politiek   b. dat geregel   van bovenaf
        that talking about politics   that regulating from the top
        'this talk about politics'   'this control from up-high'
       c. dat gewandel van patiënten
        that strolling of patients
        'this strolling of patients'

Naturally, the pejorative effect cannot be detected with GE-nominalizations derived from verbs already carrying a negative meaning aspect, like *jengelen* 'to whine', *klagen* 'to complain', *leuteren* 'to drivel', *mekkeren* 'to yammer', *zeuren* 'to nag', *zwammen* 'to twaddle', etc.; it appears, however, that such verbs are particularly popular as input to GE-nominalizations (Mackenzie 1985a). GE-nominalizations derived from verbs of sound emission are exceptional in that they lack this negative connotation (except for those cases where the input verb already contains such a meaning aspect); the meaning of nouns like *gefluister* 'whispering', *gefluit* 'whistling', *geronk* 'throbbing', *gezoem* 'buzzing, humming', etc., can but need not be negatively affected by the nominalization process.

1.3.1.4.4. Restrictions on the derivational process

Although a large number of verbs do allow the formation of a GE-nominalization, certain verb classes do not allow this type of nominalization. Among these are the object-experiencer verbs, the auxiliary/modal verbs, and the raising verbs, which do not allow any form of nominalization; cf. Section 1.3.1.1. In addition, there are a number of restrictions that apply specifically to GE-nominalizations.

I. Unaccusative verbs

°Unaccusative verbs cannot be nominalized by means of *ge*-prefixation; cf., e.g., Hoekstra (1984a) and Knopper (1984). This is not only true of dyadic unaccusative (object-experiencer) verbs like *ontgaan* 'to escape', *bevallen* 'to please' and *lukken* 'to succeed', but also for monadic unaccusatives. This means that the nouns in (175) are all ungrammatical.

(175) a. *gaan* 'to go'   a′. **gega*
       b. *komen* 'to come'   b′. **gekom*
       c. *sterven* 'to die'   c′. **gesterf*
       d. *vallen* 'to fall'   d′. **geval*
       e. *zinken* 'to sink'   e′. **gezink*
       f. *stijgen* 'to rise'   f′. **gestijg*

This conclusion is supported by the fact that with those motion verbs that have both an unaccusative and an intransitive use, only the latter use allows GE-nominalization. This becomes clear from the examples in (176). The verb in example (176a) can be construed as the intransitive form of the verb *springen* 'to jump', with the PP functioning as a locational adjunct, and (176a′) shows that GE-nominalization is possible. Since the postpositional phrase in (176b) must be construed as an °complementive, the verb can only be interpreted as an unaccusative verb, and (176b′) shows that GE-nominalization is excluded.

(176) a. Jan springt op het bed.   a′. Jans gespring op het bed
      Jan jumps on the bed   Jan's jumping on the bed
      'Jan is jumping on the bed.'
    b. Jan springt het bed in.   b′. *Jans gespring het bed in
      Jan jumps the bed into   Jan jumping the bed into
      'Jan jumps into the bed.'

An exception is formed by generic contexts like (177a&b), in which it is at least marginally possible for unaccusative verbs like *sterven* 'to die' and *trouwen* 'to marry' to undergo GE-nominalization. In these cases, the nouns obtain an iterative meaning aspect: the primed examples are unacceptable, since they do not allow an iterative reading.

(177) a. ?het gesterf van varkens
      the dying of pigs
    a′. *Haar gesterf duurde erg lang.
      her dying took very long
    b. We zouden dat getrouw op jonge leeftijd moeten ontmoedigen.
      we should that marrying on young age must discourage
      'We ought to discourage this marrying at a young age.'
    b′. *Zijn getrouw met mijn zus bevalt me niet.
      his marrying with my sister pleases me not

II. Controllability

The impossibility for unaccusative verbs to function as the input for GE-nominalization might be related to the fact that GE-nominalization is also disallowed with verbs denoting events that cannot be controlled by the participants in the event. As a result, verbs of expressing opinion such as *menen* 'to think' (#*gemeen*), *achten* 'to consider' (#*geacht*), and *vinden* 'to consider' (*gevind*) are excluded from GE-nominalization.

    The same thing is true for such typically [-CONTROLLED] verbs as *slapen* 'to sleep' (*geslaap*), *liggen* 'to lie' (*gelig*), *zitten* 'to sit' (*gezit*), *kennen* 'to know' (*geken*), *blijven* 'to stay' (*geblijf*), *weten* 'to know' (*geweet*). It is important to realize, however, that GE-nominalization is only excluded on the regular use of these verbs. If, in a certain context, the verbs can be given a [+CONTROLLED] interpretation, GE-nominalization is allowed. Due to a clash between the specific meaning aspect of GE-nominalizations and the base verbs, the resulting nouns are necessarily marked and, moreover, a negative connotation is almost inevitably present. The illustrations in (178) only acceptable if the states of affairs denoted by the nouns are interpreted as controlled by a participant in the event, which is therefore typically [+HUMAN].

(178) a. dat geslaap/gelig van hem de hele dag   [pejorative]
      that sleeping/lying of him the whole day
      'this sleeping/lying of his all day long'
    a′. *het gelig van dat boek op tafel
      the lying of that book on the.table

b. dat gehang voor de televisie   [pejorative]
    that hanging in.front.of the television
    'this slouching in front of the television'

b′. *het gehang van die schilderijen   aan de muur
    the hanging of those paintings   on the wall

III. Inseparable complex verbs

Another group of verbs that is systematically excluded from GE-nominalization is that of verbs with Germanic prefixes like *be-*, *ver-*, *ont-*, *her-*, which have a participial form without the prefix *ge-*; cf. Schultink (1978). Historically speaking, we are dealing with the same prefix.

(179) Verbs prefixed with *be-*, *ver-*, *ont-*, *her-*, etc.

PREFIX	INFINITIVE	GE-NOMINALIZATION	PAST/PASSIVE PARTICIPLE
be-	*bespreken* 'to discuss'	**gebespreek*	(**ge*)*besproken* 'discussed'
ver-	*verbieden* 'to prohibit'	**geverbied*	(**ge*)*verboden* 'prohibited'
ont-	*ontkennen* 'to deny'	**geontken*	(**ge*)*ontkend* 'denied'
her-	*herlezen* 'to re-read'	**geherlees*	(**ge*)*herlezen* 're-read'

There seems to be a motivated relation between the possibility of GE-nominalization and the form of the past/passive participle: particle verbs, which do form their past participles by mean of affixation with *ge-*, also allow GE-nominalization, although it must be noted that the result is sometimes marked and a negative connotation is always present. Some examples are given in the table below.

(180) Particle verbs

INFINITIVE	GE-NOMINALIZATION	PAST/PASSIVE PARTICIPLE
doordrammen 'to nag/push'	[?]*doorgedram* 'nagging, pushing'	*doorgedramd*
uitzoeken 'to figure out'	^{??}*uitgezoek* 'figuring out'	*uitgezocht*
aanmoedigen 'to encourage'	^{??}*aangemoedig* 'encouraging'	*aangemoedigd*
tegensputteren 'to protest'	*tegengesputter* 'protesting'	*tegengesputterd*

The same thing can be illustrated by means of verbs with non-Germanic prefixes: they also have a past/passive participle preceded by *ge-*, and in most cases GE-nominalization does not seem to give rise to an outright ungrammatical result in the way the GE-nouns derived from verbs with a Germanic prefix are ungrammatical. At worst, they are unusual, which is clear from the fact that the cases marked as fully acceptable in (181) can be readily found on the internet and that the cases marked with a single question mark do occur on the internet, but are rare. Note that the case with two question marks has not been attested, but this might be due to the fact that it belongs to a more elevated register.

(181) Verbs with non-Germanic prefixes

INFINITIVE	GE-NOMINALIZATION	PAST/PASSIVE PARTICIPLE
introduceren 'to introduce'	[?]*geïntroduceer*	*geïntroduceerd*
diskwalificeren 'to disqualify'	[?]*gediskwalificeer*	*gediskwalificeerd*
protesteren 'to protest'	*geprotesteer*	*geprotesteerd*
repatriëren 'to repatriate'	^{??}*gerepatrieer*	*gerepatrieerd*
analyseren 'to analyze'	*geanalyseer*	*geanalyseerd*
sympathiseren 'to sympathize'	[?]*gesympathiseer*	*gesympathiseerd*

A potential problem for the suggested relation between the possibility of GE-nominalization and the form of the past/passive participle is that example (182) shows that the *ge-* prefix can be found with verbs like *herhalen* 'to repeat'; we found more than 50 occurrences of the form *geherhaal* on the internet. The relative acceptability of this example may be due to the fact that *herhalen* (unlike *herlezen* in (179)) is not interpreted as consisting of a base verb (*halen* 'to fetch') and a prefix *her-*, but as a monomorphemic verb.

(182)   dat eindeloze geherhaal van oude tv-series in de zomermaanden
          that endless   repeating of   old TV-series in the summer months

An obvious problem with this suggestion is, however, that we would expect that the past participle form *geherhaald* is also quite common, but this does not seem to be borne out; we found only 28 occurrences of this form on the internet, whereas the past participle form *herhaald* occurred over one million times.

IV. Inherently reflexive verbs

It does not really come as a surprise that GE-nominalization of inherently reflexive verbs is rare. First, many inherently reflexive verbs are prefixed and for this reason excluded from GE-nominalization: *zich vergissen* 'to be mistaken', *zich begeven naar* 'to make one's way to', *zich bevinden* 'to be (located)', *zich vergewissen van* 'to make sure of', *zich bedrinken* 'to get drunk', *zich uitleven* 'to live it up'). Second, we have seen that the reflexive pronoun cannot occur postnominally in INF-nominalizations but must be realized in prenominal position; cf. Section 1.3.1.2.4. Given that ING-nominalizations only take post-nominal complements, the impossibility of the ING-nominalizations of inherently reflexive verbs in (183) is exactly what one would expect.

(183) a.   Hij schaamde   zich   over/voor zijn gedrag.
           he   was ashamed REFL about/for his behavior
           'He was ashamed of his behavior.'
      a′. *Zijn geschaam   van zich(zelf) over/voor zijn gedrag   was terecht.
           his being ashamed of REFL   about/for his behavior was right
      b.   Hij haastte zich om   de trein   te halen.
           he   hurried REFL COMP the train   to catch
           'He hurried to catch the train.'
      b′. *Zijn gehaast van zich(zelf) om   de trein te halen was tevergeefs.
           his   hurried of REFL   COMP the train to catch was in vain

However, it seems at least marginally possible to use the corresponding ING-nominalizations when the postnominal PP containing the reflexive is dropped, as is shown in the examples in (184), which are both adapted versions of examples found on the internet.

(184) a. $^?$Ik ben moe   van dat geschaam.
         I   am fed up with that being ashamed
      b. Rustig aan, dat gehaast   is nergens   goed voor.
         easy   that hurrying is nowhere good for
         'Easy, as that rushing is good for nothing.'

Example (185b) shows that with non-inherently reflexive verbs, GE-nominalization is possible; *zichzelf* can be treated as a regular argument comparable to *Marie*.

(185) a. Hij prijst   zichzelf/Marie voortdurend.
         he praises   himself/Marie   continuously
         'He praises himself/Marie all the time.'
      b. Zijn voortdurende geprijs van zichzelf/Marie is irritant.
         his continuous praising   of himself/Marie   is irritating

1.3.1.4.5. The degree of verbalness/nominalness

We conclude with a discussion of the syntactic category of GE-nominalizations. Table 13 shows that GE-nominalizations exhibit partially verbal and partially nominal properties. On the basis of this overview, we conclude that GE-nominalizations take their place in between INF- and ING-nominalizations on a scale of verbal/nominalness.

Table 13: The degree of verbalness/nominalness of GE-nominalizations

VERBAL PROPERTIES	presence of arguments	yes
	prenominal theme/recipient with objective case	no
	prenominal recipient-PP	no
	adverbial modification	yes?
NOMINAL PROPERTIES	adjectival modification	yes
	theme with genitive case	no
	theme/recipient realized as postnominal PP	yes
	definiteness	yes
	indefiniteness	yes
	quantification	yes
	pluralization	no

Like INF- and ING-nominalizations, GE-nominalizations are verbal in the sense that they denote abstract entities, namely states of affairs. Moreover, like INF-nominalizations, they are verbal in that they can be modified by means of an adverb (although this may be marked), and that their theme argument cannot occur prenominally as a pronoun or genitive noun phrase.
    Like ING-nominalizations, however, they behave in many respects like true nominals: their arguments appear typically as PPs in postnominal position, and the

agent can occur prenominally as a pronoun or a genitive noun phrase. Furthermore, they allow modification by means of adjectives and can take all sorts of definite and indefinite determiners and quantifiers; only pluralization is impossible.

1.3.1.5. ER-nominalization

ER-nominalization involves the formation of deverbal person nouns by means of one of the allomorphs of *-er/-ster*, and a number of other, less productive affixes. In contrast to the nominalization processes discussed in the previous sections, ER-nouns do not inherit the denotation of the verb they are derived from; they denote persons, not states of affairs. They do, however, inherit the argument structure of the verb, and in this sense they can be said not to be fully nominal. This section will discuss the form of the derived noun, its relation to the base verb and the restrictions on the derivational process. In Section 2.2.3.1, a comprehensive discussion of complementation of ER-nouns can be found.

1.3.1.5.1.   Form of the derived noun

Deverbal nouns denoting concrete objects can take a number of forms. The most productive form of noun formation is that by which so-called person nouns are derived. Normally, these deverbal nouns take the masculine ending *-er* (which is realized as *-der* when following an /r/), the feminine ending *-ster*, or one of their allomorphs (respectively, masculine *-aar* and feminine *-eres* and *-aarster*). Table 14 shows that other suffixes, both native and non-native, are also possible.

Table 14: Deverbal person nouns

SUFFIX	INPUT VERB	DERIVED FORM
Masc: *-(d)er* Fem: *-ster/-eres*	*lezen* 'to read'	*lezer/lezeres* 'reader'
	schrijven 'to write'	*schrijver/schrijfster* 'writer'
	verraden 'to betray'	*verrader/verraadster* 'traitor'
	uitvoeren 'to perform'	*uitvoerder/uitvoerster* 'performer'
Masc: *-aar* Fem: *-aarster* */-ares*	*bewonderen* 'to admire'	*bewonderaar(ster)* 'admirer'
	knutselen 'to tinker'	*knutselaar/—* 'handyman'
	tekenen 'to draw'	*tekenaar/ares* 'artist'
	twijfelen 'to doubt'	*twijfelaar/—* 'skeptic'
Masc: *-(a)teur* Fem: *-(a)trice*	*inspecteren* 'to inspect'	*inspecteur/inspectrice* 'inspector'
	redigeren 'to edit'	*redacteur/redactrice* 'editor'
	repareren 'to repair'	*reparateur/—* 'repairer'
Masc: *-ator* Fem: *-atrice*	*organiseren* 'to organize'	*organisator/organisatrice* 'organizer'
	illustreren 'to illustrate'	*illustrator/illustratrice* 'illustrator'
	improviseren 'to improvise'	*improvisator/improvisatrice* 'improviser'
Masc: *-eur* Fem: *-euse*	[%]*chafferen* 'to drive'	*chauffeur/chauffeuse* 'chauffeur'
	regisseren 'to direct (a movie)'	*regisseur/regisseuse* '(film) director'
	masseren 'to massage'	*masseur/masseuse* 'masseur'

Derived nouns of the type given in Table 14 are always [-NEUTER], and are typically used to denote professions (like *schrijver* 'writer' or *leraar* teacher) or persons that habitually perform the action denoted by the verb (like *twijfelaar* 'skeptic'), that is, they often receive a kind of "generic" interpretation.

Note that the use of the notion of masculine ending is slightly misleading in that the masculine forms are actually neutral forms, and can be used to denote both masculine and feminine individuals. For example, the referent set of the plural noun phrase *de wandelaars* in example (186a) may include female individuals. And the same thing is shown by the copular constructions in (186b&c), which were both taken from the internet.

(186) a. De wandelaars   vertrokken   na het ontbijt.
           the hikers   left   after breakfast
       b. Vier van de vijf lezers   zijn   vrouw.
           four out.of five readers are   female
       c. Marie/Zij   is een echte lezer.
           Marie/she   is a true reader

The unmarked use of the deverbal nouns in Table 14 is that of denoting [+HUMAN] entities, and for that reason they are normally labeled person nouns. These nouns have also been called agent nouns (or *nomina agentis*) or subject nouns because, in most cases, the individuals denoted by the noun are the agent of the input verb. Generally speaking, these terms succeed in accurately describing the set of nouns belonging to this class. The examples in (187a&b) show, however, that the suffix –*er* is special in that it can also derive nouns that denote non-human agents or instruments; the deverbal ER-nouns in (187c) even have abstract denotations, that is, *misser* 'miss' refers to the result of the event denoted by the input verb and *uitglijder* 'slip/blunder' refers to the event itself. For this reason, we will not use the traditional terms given earlier, but simply refer to this class of nominalizations as deverbal ER-nouns.

(187) a. non-human agents: *wekker* 'alarm clock'; *zoemer* 'buzzer'
       b. instruments: *opener* 'opener'; *waaier* 'fan'
       c. abstract: *misser* 'miss'; *uitglijder* 'slip/blunder'

1.3.1.5.2. Relation to the base verb

Concrete deverbal ER-nouns can be said to inherit the argument structure of the input verb. The external (agentive) argument of the verb apparently disappears, but is actually expressed by the affix: it is the deverbal noun itself that denotes the agent of the action denoted by the input verb. Consequently, ER-nouns derived from intransitive verbs like *wandelen* 'to walk' in (188a) do not take any arguments: the sole argument of the input verb is represented by the suffix -*er*. Example (188b) shows that the nominal theme argument of a transitive verb like *maken* 'to make' must be realized by means of a *van*-PP in the corresponding nominal construction. Example (188c) shows that when the input verb selects a PP-complement the same PP will be selected by the ER-noun; cf. *jagen op* 'to hunt for'.

(188)   • ER-nouns
    a.   SCHRIJVER_N   a′. *de schrijver* 'the writer'
    b.   MAKER_N (Theme)   b′. *de maker van het beeld* 'the maker of the statue'
    c.   JAGER_N (Theme)   c′. *een jager op groot wild* 'a hunter of big game'

1.3.1.5.3. Restrictions on the derivational process

Although ER-nominalization is a productive process with both intransitive and transitive verbs, there are a number of restrictions on its operation concerning the thematic role of the argument represented by the *-er* ending and the type of input verb. The discussion of these restrictions will follow Table 15, which presents a hierarchy of ER-nominalizations in terms of the type of object denoted by the deverbal noun, the thematic role most likely to be represented by the ER-noun and the type of input verb; the prototypical use of an ER-nominalization is given at the top of the list, and the rare (often marginal) uses towards the bottom. Recall that the [-HUMAN] nouns can only be derived by affixation with *-er*.

Table 15: A hierarchy of the denotation of deverbal ER-nominalizations

DENOTATION	THEMATIC ROLE	±HUMAN	INPUT VERB	EXAMPLE
concrete	agent	+human	transitive intransitive	*maker* 'maker' *fietser* 'cyclist'
		-human	transitive intransitive	*wekker* 'alarm clock' *zoemer* 'buzzer'
	instrument	-human	transitive intransitive	*opener* 'opener' *waaier* 'fan'
	experiencer	+human	transitive intransitive	*bewonderaar* 'admirer' *tobber* 'worrier'
	theme	±human	transitive ?unaccusative	*martelaar* 'martyr' *stijger* 'riser'
abstract (events)	—	-human	transitive unaccusative	*misser* 'miss' *uitglijder* 'blunder'

The discussion starts with the thematic roles of the argument that can be expressed by the suffix. This is followed by a discussion of the restrictions on the input verbs.

I. Thematic role of the argument represented by the -er ending

This section discusses the implied thematic relationships between the argument represented by the *-er* ending and the input verb.

A. ER-nouns denoting [+HUMAN] agents

The vast majority of deverbal ER-nouns denote a [+HUMAN] object, which acts as the agent in the argument structure of the input verb. A representative set of examples has already been given in Table 14.

B. ER-nouns denoting [-HUMAN] (impersonal) agents

Less common are examples like (189) where the deverbal ER-noun represents a [-HUMAN] agent of the input verb. Nevertheless, these [-HUMAN] objects still

perform the action denoted by the input verb and will, therefore, be referred to as impersonal agents; cf., e.g., Van der Putten (1997) and De Caluwe (1995). As illustrated in (189a-d), the input verb is usually transitive, although the intransitive input verb *zoemen* 'to buzz' in (189e) is also possible.

(189)   • ER-nominalization denoting [-HUMAN] (impersonal) agents
   a.   Deze tv-zender   zendt   popmuziek uit.   [cf. *uitzenden* 'to broadcast']
        This TV station   broadcasts   pop.music   prt.
   b.   De wekker   wekte   hem om 7 uur.   [cf. *wekken* 'to wake up']
        the alarm clock woke   him at 7 o'clock
   c.   Deze versterker   versterkt   zonder vervorming.   [cf. *versterken* 'to amplify']
        this amplifier   amplifies without distortion
   d.   Deze meter meet   het gasverbruik.   [cf. *meten* 'to measure']
        this meter   measures the gas.consumption
   e.   De zoemer zoemde erg luid.   [cf. *zoemen* 'to buzz']
        the buzzer   buzzed   very loudly

ER-nouns of this type do not allow complementation; although the input verbs may obligatorily contain a theme argument, this argument is not inherited by the ER-nominalization. As a consequence, deverbal ER-nouns denoting impersonal agents cannot be followed by a *van*-PP denoting the object of the base verb. This means that in the primeless examples of (190) the ER-noun will receive its prototypical [+HUMAN] agentive interpretation; when this is not possible the result will be unacceptable. In (190a), for example, the noun *een zender* will be interpreted as denoting the person who sent the message; forcing a non-agentive interpretation, as in (190a′), leads to ungrammaticality. Similarly, *een wekker* in (190b) will be interpreted as a wake-up person, that is, a person who wakes up other people; alternatively, *een wekker* will be interpreted as an alarm clock belonging to lazy people, a reading that is more likely with a specific possessor like *Jan* in (190b′).

(190) a.   de zender   van het bericht
           the sender of the message
     a′.   de pas   in gebruik genomen zender   (*van het bericht)
           the recently into use put   transmitter   of the message
     b.   een wekker   van luie mensen
           a wake.up-er of lazy people
     b′.   de wekker   van Jan
           the alarm.clock of Jan

When the ER-noun cannot receive a [+HUMAN] interpretation, its use with a theme complement is infelicitous. This is illustrated in (191).

(191) a.   een geleider   (*van elektriciteit)
           a conductor   of electricity
     b.   een versterker (*van geluid)
           an amplifier   of sounds

ER-nouns denoting impersonal agents are quite common in compounds of the sort illustrated in (192). Given that the first member of the compound functions as

an incorporated theme of the input verb (and keeping in mind the discussion of the examples in (190) and (191)), it will not come as a surprise that these nouns do not accept a *van*-PP expressing a theme. The ER-nouns in (192) seem to be fully lexicalized in the sense that the "incorporated" theme is more or less fixed; the compound *wasverzachter*, for example, does not alternate with something like *lakenverzachter*, in which the theme (meaning "sheet") is more specific. Furthermore, the second member often does not occur without the incorporated theme: **verzachter*, **stiller*, *#koker*.

(192) • ER-nominalization denoting [-HUMAN] agents (with incorporated themes)
 a. (?)Deze wasverzachter verzacht mijn lakens.   [cf. *verzachten* 'to soften']
     this fabric.softener   softens   my sheets
 a′. de wasverzachter (*van mijn lakens)
     the fabric.softener   of my sheets
 b. (?)De pijnstiller stilt   de pijn in mijn hoofd.   [cf. *stillen* 'to quiet/ease']
     the painkiller   eases the pain in my head
 b′. de pijnstiller (*van mijn hoofdpijn)
     the painkiller   of my headache
 c. ??De eierkoker   kookt de eieren.   [cf. *koken* 'to cook']
     the egg.cooker cooks the eggs
 c′. de eierkoker   (*van mijn scharreleieren)
     the egg.cooker   of my free range eggs

C. ER-nouns denoting instruments

There are also instances where it is not the external argument of the input verb that forms the denotation of the derived ER-noun. In that case, it is usually the instrument used in performing the state of affairs that is denoted by the derived noun. Such nouns are especially common as the second member of compounds in which the first member functions as an incorporated theme of the input verb. Thus, the ER-nouns in the primeless examples in (193) refer to instruments used for opening corked bottles, screwing screws, reporting a fire or playing a CD, respectively. That it is indeed an instrument that is referred to and not an impersonal agent becomes clear from the primed examples, which show that these ER-nouns cannot themselves perform the action denoted by the input verb.

(193) • ER-nominalization denoting instruments (with incorporated theme)
 a. de kurkentrekker (*van deze kurk)   [cf. *trekken* 'to pull']
     the corkscrew   of this cork
 a′. *De kurkentrekker trekt de kurk uit de fles.
     the corkscrew   pulls the cork from the bottle
 b. de schroevendraaier (*van deze schroeven)   [cf. *draaien* 'to turn']
     the screwdriver   of these screws
 b′. *Deze schroevendraaier draait de schroeven in de plank.
     this screwdriver   turns   the screws   into the board
 c. de brandmelder (*van de brand)   [cf. *melden* 'to report']
     the fire.reporter   of the fire
 c′. ??De brandmelder meldt   een brand bij de alarmcentrale.
     the fire.reporter   reports   a fire   at the emergency.center

    d.   de CD-speler (*van mijn nieuwe CD)   [cf. *afspelen* 'to play']
        the CD-player   of my new CD
    d′. ^{??}De CD-speler speelt de CD af.
        the CD player plays the CD prt.

The unacceptability of the primed examples in (193) probably resides in the fact that the verbs in question select a [+HUMAN] agent. This selection restriction can be overridden by adding an adverbial phrase like *automatisch* 'automatically', as in (194), as a result of which these examples are acceptable.

(194) a.   Deze kurkentrekker trekt de kurk automatisch   uit de fles.
         this corkscrew   pulls the cork automatically out.of the bottle
     b.   Deze brandmelder meldt   een brand automatisch   bij de centrale.
         this fire.detector   reports a fire   automatically with the center
         'This detector automatically alerts the emergency center in case of a fire.'
     c.   Deze CD-speler speelt de CD   automatisch   af.
         this CD-player   plays   the CD automatically prt.

The compound nouns in (193) exhibit more or less the same properties as those in (192); expressing the theme argument by means of a *van*-PP is impossible, the first member of the compound is more or less fixed, and the instrument ER-noun often does not occur without the incorporated theme: [#]*trekker*, [#]*draaier*, [#]*melder*, [#]*speler* (note that all these nouns do have an agentive reading). The latter restriction is not absolute, however: (195) gives some instances of instrument nouns where incorporation need not take place. Note that here we are clearly not dealing with impersonal agents, given that the primed examples show that the instrument itself cannot perform the action denoted by the input verb. As with impersonal agents, explicit mention of the theme as argument of the derived noun yields an unacceptable result or forces an often improbable [+HUMAN] reading: the [+HUMAN] readings are marked by means of "#".

(195)   • ER-nominalization denoting instruments (no incorporation)
     a.   de (flessen)opener ([#]van deze fles)   [cf. *openen* 'to open']
         the bottle opener   of the bottle
    a′. *De (flessen)opener opent de fles.
        the bottle opener   opens the bottle
     b.   de (was)knijpers ([#]van mijn wasgoed)   [cf. *knijpen* 'to pinch']
         the clothes.pegs   of my laundry
    b′. *De (was)knijpers hangen het wasgoed op.
        the clothes.pegs   put   the laundry   up
     c.   de kijker   (*van/[#]naar de vogels)   [cf. *kijken* 'to look']
         the viewer   of/to the birds
    c′. *De kijker kijkt naar de vogels.
        the viewer looks at the birds

Note that it is possible to have a PP introduced by *voor* in examples like (195a&b); cf. (196a). In that case, however, the modifier is an adjunct rather than the theme of the underlying predication. This becomes clear from the fact, illustrated by the

examples in (196b), that placement of the PP in postcopular position is possible, which is a hallmark of adjunct status; cf. Section 2.2.1.3.

(196) a. Die opener is alleen voor dit soort flessen.
           this opener is only   for this type of bottles
      b. Deze knijpers   zijn voor mijn wasgoed.
           these cloth.pegs   are   for my laundry

    Finally, note that there are circumstances under which the ER-nouns *kijker* and *knijper* can be used as subjects. Like many ER-nouns, *kijker* has more than one meaning. In (195c) it has a [-HUMAN] reading, in which case it cannot be used as a subject of the verb *kijken*. When it denotes persons, it can be used as the subject of the verb *kijken*, as in (197a). Further, ER-nouns denoting instruments can occasionally be used with other, less active verbs, as in (197b).

(197) a. Onze kijkers kijken graag   naar informatieve programma's.
           our viewers look   gladly at informative programs
           'Our viewers like to watch informative programs.'
      b. Deze knijpers   houden het wasgoed goed vast.
           these clothes.pegs keep   the laundry   well fixed
           'These clothes pegs keep the laundry securely fixed.'

The constructions in (198) with the instrument ER-noun in subject position are also acceptable. However, the instrument does not function as the agent of the action denoted by the verb: we are dealing here with so-called adjunct middle constructions, which involve some implicit or generic agent for which it is easy/pleasant to perform the action denoted by means of the instrument specified; see Section V3.2.2 for detailed discussion of these constructions.

(198) a. Deze opener opent   dat soort flessen   heel gemakkelijk.
           this opener   opens   that sort [of] bottles very easily
      b. Deze kijker kijkt   heel prettig.
           this viewer looks very pleasantly

D. ER-nouns denoting experiencers

Certain subject-experiencer verbs can also form the input to ER-nominalization. In that case, it is the experiencer argument that is represented by the *–er* ending. Once again, the input verb can be either intransitive, as in example (199a), or transitive, as in example (199b). In the transitive example the theme argument is inherited by the derived noun.

(199) a. Jan tobt veel.   a′. Jan is een echte tobber
           Jan worries much   Jan is a real worrier
      b. Jan bewondert Picasso. b′. Jan is een bewonderaar van Picasso.
           Jan admires   Picasso   Jan is an admirer   of Picasso

E. ER-nouns denoting themes

In addition to the cases discussed above, there are a number of rare and nonproductive occurrences like (200) in which the *–er* ending represents the theme

argument. The noun *martelaar* in (200a) denotes the person undergoing the torture, while the noun *aanrader* in (200b) denotes the thing that is being recommended. The correct use of the noun *gijzelaar* in example (200c) is a subject of discussion: on its normative reading, it is used to refer to the hostages, that is, the theme of the action of kidnapping (for which Dutch also uses the deverbal noun *gegijzelde*); in colloquial speech, on the other hand, it is often used to refer to the kidnappers, that is, to the agent of the action (for which Dutch also uses the noun *gijzelnemer*).

(200) a. *martelaar* 'martyr'   [cf. *martelen* 'to torture']
     b. *aanrader* 'something highly recommendable' [cf. *aanraden* 'to recommend']
     c. *gijzelaar* 'hostage/kidnapper'   [cf. *gijzelen* 'to kidnap']

The constructions in (201a&b) show that it is not possible to express the agent in these constructions by means of a *van-* or *door-*PP. Example (201a′) suggests that the agent cannot be expressed by means of a possessive pronoun/genitive noun phrase either, although it seems difficult to determine whether *Jan* functions as the agent or as the possessor of the construction *Jans aanrader* in (201b′); if the latter, the unexpected acceptability of this construction is accounted for.

(201) a. *de martelaar van/door de Romeinen$_{Agent}$ a′. *hun$_{Agent}$ martelaar
        the martyr   of/by the barbarians   their   martyr
     b. *de aanrader   van/door Jan$_{Agent}$ b′. #Jans$_{Agent}$ aanrader
        the recommend-er of/by Jan$_{Agent}$ Jan's$_{Agent}$ recommend-er

The deverbal nouns in (200) exhibit behavior similar to deverbal nouns ending in *-sel*, which typically represent the theme argument: *verzinsel* 'fabrication', *baksel* 'baking', *bouwsel* 'building/structure'; cf. Knopper (1984). For example, the construction with *van* in (202a) is only acceptable on a possessive reading; this becomes clear from the fact illustrated by (202b) that placement of the PP in postcopular position is possible, which is a hallmark of adjunct status; cf. Section 2.2.1.3.

(202) a. *?het bouwsel van/door mijn broertje$_{Agent}$
        the building   of/by   my little brother
     b. Dit bouwsel is van mijn broertje$_{Poss}$.
        this building is of   my little brother
        'This is my littler brother's building.'

F. *ER-nouns denoting events*

There are very rare cases in which ER-nouns are used to refer to abstract entities. The actual denotation of these nouns may be either the result of the event denoted by the input verb or the event itself. Two examples are given in (203). The events involved are typically those involving actions over which the participants in the action have no control; cf. Van der Putten (1997: 147).

(203) a. *missen* 'to miss'   a′. *misser* 'miss/failure'   [result]
     b. *uitglijden* 'to slip/blunder'   b′ *uitglijder* 'slip/blunder'   [event]

II. Type of input verb

Section 1.3.1.5.2 has established that ER-nominalization is almost fully productive with intransitive and transitive input verbs. Among the verbs that do not allow ER-nominalization are the NOM-DAT (object experiencer) verbs, the auxiliary/modal verbs, and the raising verbs, which do not allow any form of nominalization; cf. Section 1.3.1.1. Apparent counterexamples are *meevaller* 'piece of good luck' and *tegenvaller* 'disappointment', which are derived from NOM-DAT verbs, but which denote [-HUMAN] entities; given that these nominalizations cannot occur with a complement (**een hem tegenvaller*; **een haar meevaller*) and have an idiomatic meaning only, we can safely assume that these ER-nouns are fully lexicalized idiomatic expressions without an argument structure. In addition to the general restrictions mentioned above, the following subsections will discuss a number of restrictions that apply specifically to ER-nouns.

A. Monadic unaccusative verbs

ER-nouns prototypically denote [+CONCRETE][+AGENT] entities, so that, as a rule, a verb must have an external argument denoting the person or thing performing the action denoted by the verb in order to qualify for input to ER-nominalization. After nominalization, this argument no longer forms part of the argument structure of the deverbal ER-noun; by denoting the referent of this argument, the nominalizing affix *-er* "represents", as it were, the external argument of the base verb.

The °unaccusative verbs behave differently in this respect: rather than denoting an action that is performed by the only argument, the verb denotes a process that the argument is subject to (which does not necessarily imply that the argument is not actively involved in bringing about the process). In other words, the argument of these verbs is a theme, and we therefore expect ER-nominalization to be impossible. This expectation is indeed borne out in the case of unaccusative verbs indicating movement or a change of state. Some examples are given in (204), which all at least feel extremely marked, at least when considered in isolation; see the discussion below.

(204) a. *arriveren* 'to arrive'   a′. *een arriveerder
      b. *vertrekken* 'to leave'   b′. *een vertrekker
      c. *verschijnen* 'to appear'   c′. *een verschijner
      d. *gaan* 'to go'   d′. *een gaander
      e. *groeien* 'to grow'   e′. *een groeier
      f. *vallen* 'to fall'   f′. *een valler
      g. *stijgen* 'to rise'   g′. *een stijger
      h. *verstrijken* 'to pass by (of time)' h′. *een verstrijker
      i. *zinken* 'to sink'   i′. *een zinker

Other unaccusative verbs also yield questionable results: the ER-nominalization of the unaccusative verbs in (205) yields odd results, although in Flemish Dutch, *trouwer* can be used with the intended reading, hence the "%" sign.

(205) a. *toenemen* 'to increase' a′. *een toenemer
 b. *sneuvelen* 'to be killed (in action)' b′. *een sneuvelaar
 c. *sterven* 'to die' c′. *een sterver
 d. *trouwen* 'to marry' d′. %een trouwer

At the same time, it needs to be said that, given the proper context, even highly marked ER-nouns can become acceptable. Example (205c′), for instance, could conceivably be used in an example like (206a) to refer to an actor who excels in dying scenes, in which case we are dealing with a repeated and deliberately performed action. Observe that in this use verbs like *sterven* 'to die' also allow a passive, as illustrated in (206b). This shows that these unaccusative verbs can behave like intransitive verbs in more than one respect (but not in all given that the auxiliary verb cannot be changed into *hebben* 'to have').

(206) a. Hij is een fantastische/overtuigende sterver.
   he   is a   fantastic/convincing   die-er
 b. Er   wordt overtuigend gestorven in die scène.
   there is   convincingly died   in that scene
   'There is some convincing dying in that scene.'

The nouns in (207) also exhibit unexpected behavior in the sense that incorporation of the theme argument may positively affect the acceptability of the derived noun. For example, although the movement verb *komen* 'to come' does not allow the derivation of **komer*, the compounds like *laatkomer* and *nieuwkomer* do exist. Cases like these involve a certain degree of lexicalization, as is clear from the fact that in the case of *gaan*, the ER-noun has the irregular form *-ganger*.

(207) Compound nouns with an ER-noun derived from an unaccusative verb

VERB	SIMPLE ER-NOUN	COMPOUND
komen 'to come'	**komer*	*laatkomer* 'latecomer'
		nieuwkomer 'newcomer'
gaan 'to go'	**gaander*	*vakantieganger* 'holidaymaker'
		telganger 'ambler'
vallen 'to fall'	**valler*	*uitvaller* 'drop-out'
		invaller 'substitute'

In other cases, the derived noun exists as a lexicalized form, that is, with a specialized meaning. Thus the ER-noun *beginner* denotes an inexperienced person, not just any person who begins. Likewise, the words *stijger* 'climber/riser' and *daler* 'faller/descender' can be used in the context of a listing or a competition (as in sports, charts or financial indexes); quite predictably, their reference is in that case to the person or item that climbs or falls. Two more examples are given in (206): the noun *blijvertje* in (206a) denotes entities that are of a more durable nature, not just to entities that stay in a certain place, and the noun *binnenkomer* in (206b) refers to some funny introduction to a topic, not just to any entity that enters some place.

(208) a.   De CD-speler is een blijvertje.
           the CD-player is a stay-er
           'The CD-player is here to stay'.
      b.   Die opmerking was een goede binnenkomer.
           that remark   was a nice inside-come-er
           'That remark was a nice preamble/warming-up spiel.'

All in all, it looks as though ER-nouns derived from unaccusative verbs are either reinterpreted along the lines of a prototypical ER-noun, that is, as denoting an agent as in the case of *sterver* 'a person who repeatedly dies', or attains a specialized meaning as in *beginner* 'debutant/novice'. This means that, although in many cases highly marked, every ER-noun is in principle acceptable, provided that the right context is available. This is confirmed by the fact that many of the nouns in (205) and (206) can at least occasionally be found on the internet.

    There is another group of verbs that cannot be input to the process of ER-nominalization, made up of monadic verbs such as those in (209). Although these verbs are generally regarded as intransitive, there are also reasons to regard them as unaccusative verbs; cf. Section V2.1.2. This view is supported by the fact that (on their monadic use) these verbs cannot easily undergo ER-nominalization.

(209) a.   *bloeden* 'to bleed'   a′. [#]bloeder
      b.   *drijven* 'to float'   b′. [#]drijver
      c.   *rotten* 'to rot'   c′. *rotter
      d.   *braden* 'to fry'   d′. *brader
      e.   *branden* 'to burn'   e′. [#]brander
      f.   *stinken* 'to smell'.   f′. [?]stinker

Of course, a noun like *brander* is possible, but this noun does not denote burning entities (like a candle), but a [+HUMAN] agent ("*distiller*") or an instrument by which old paint can be removed; this noun is therefore clearly not derived from the monadic verb that we find in *De kaars brandt* 'The candle is burning', but from its transitive counterpart. The ER-nouns *bloeder* 'bleeder/haemophiliac' and *drijver* 'float' also exists, but these nouns have very specialized meanings and should hence be considered lexicalized. Another potentially problematic case is the somewhat marginal noun [?]*stinker* 'stinker', which can be used to refer to a person who stinks; note that there is also a fully acceptable, but highly lexicalized, version of this noun, *stinkerd* 'rascal'.

B. Inherently reflexive verbs

Example (210) shows that inherently reflexive verbs cannot undergo ER-nominalization; the reflexive pronoun *zich* can occur neither in prenominal nor in postnominal position. This is not really surprising, given that we have seen in Section 1.3.1.2.4 that the reflexive must be realized in prenominal position in INF-nominalizations; since ER-nominalizations take only post-nominal complements, the impossibility of ER-nominalization of inherently reflexive verbs is exactly what one would expect. Note that the ER-nominalizations in (210) are also unacceptable when the PP is dropped.

(210) a. *een schamer   van zich(zelf)   [cf. *zich schamen* 'to be ashamed']
             a   be ashamed-er of   REFL
       b. *een vergisser   van zich(zelf)   [cf. *zich vergissen* 'to be wrong']
             a   be-wrong-er of   REFL

For completeness' sake, (211) shows that with optionally reflexive verbs, ER-nominalization is possible; in these examples *zichzelf* can be treated as a regular argument comparable to *Bach/het recht op zelfbeschikking*.

(211) a. een bewonderaar van zichzelf/Bach
             an admirer   of himself/Bach
       b. een verdediger van zichzelf/het recht op zelfbeschikking
             a defender   of himself/the right of self.determination

1.3.1.5.4. The degree of verbalness/nominalness

None of the various types of ER-nominalization yields fully prototypical nouns in the sense that they all, to varying degrees, retain the verbal characteristic of taking complements (which sometimes must be realized as the first member of a compound). Compared to the other types of nominalization, however, they come closest to full nouns since having an argument structure is their only verbal property.

Table 16: The degree of verbalness/nominalness of ER-nominalizations

VERBAL PROPERTIES	presence of arguments	yes
	prenominal theme/recipient with objective case	no
	prenominal recipient-PP	no
	adverbial modification	no
NOMINAL PROPERTIES	adjectival modification	yes
	theme with genitive case	yes
	theme/recipient realized as postnominal PP	yes
	definiteness	yes
	indefiniteness	yes
	quantification	yes
	pluralization	yes

1.3.1.6. Summary

This section has shown that the types of deverbal nouns mentioned in the header of Table 17 differ with regard to the number of verbal features they retain and the number of nominal characteristics they assume. What all these types have in common is that, despite their verbal basis, they have the distribution of a nominal. Apart from this, each type has assumed more or less nominal characteristics, which makes it possible to order them according to the degree of verbalness (or nominalness) they exhibit, with BARE-INF nominalizations the highest degree of verbalness and ER-nouns exhibiting the highest degree of nominalness.

    BARE-INF nominalizations clearly constitute the most verbal type, given that they retain all the verbal characteristics included in the list while assuming none of

the nominal ones. In addition, their reference remains abstract in that it refers to the state of affairs denoted by the base verb. The ER-nominalizations are at the other end of the scale given that, apart from the fact that they have an argument structure, they are fully nominal in behavior, and are furthermore the only nominalizations that typically denote concrete entities. The other three types of nominalization come in between these two extremes. Interestingly, a higher degree of verbalness also seems to correspond to a higher degree of productivity. As we have seen in the preceding sections, INF-nominalizations can take virtually any type of verb as their input (with the exceptions of those verbs that do not allow any form of nominalization), whereas in particular ING- and ER-nominalizations are much more restricted in this respect.

This concludes our discussion of nominalization for the moment. We will return to the nominalizations in Section 2.2.3, where we will focus more specifically on their property of inheriting the argument structure of the input verb.

Table 17: Verbal and nominal characteristics of deverbal nouns

		BARE-INF	DET-INF	GE	ING	ER
PRODUCTIVITY		full	full	partial	partial	partial
REFERENCE		abstract	abstract	abstract	abstract	concrete
V-PROPERTIES	presence of arguments	yes	yes	yes	yes	yes
	prenominal theme/recipient with objective case	yes	yes	no	no	no
	prenominal recipient-PP	yes	yes	no	no	no
	adverbial modification	yes	yes	yes?	no	no
N-PROPERTIES	adjectival modification	no	yes	yes	yes	yes
	theme with genitive case	no	no?	no	yes	yes
	theme/recipient realized as postnominal PP	no	yes	yes	yes	yes
	definiteness	no	yes	yes	yes	yes
	indefiniteness	no	no	yes	yes	yes
	quantification/relativization	no	no	yes	yes	yes
	pluralization	no	no	no	yes/no	yes

1.3.2. Deadjectival nouns

This section discusses the formation of deadjectival nouns: 1.3.2.1 is concerned with the form and meaning of the derived noun, 1.3.2.2 continues by discussing the relation between the derived nouns and the input adjective, and 1.3.2.3 concludes with a discussion of the restrictions on the derivational process.

1.3.2.1. Form and meaning of the derived noun

This section addresses the form and the meaning of the deadjectival nouns, beginning with the former.

I. Form of the deadjectival noun

Not only verbs, but also adjectives can form the basis of derived nouns. This form of nominalization is usually achieved through suffixation, whereby some suffixes are (more or less) fully productive, while others are nonproductive. The most important of these suffixes are given in Table 18. As is shown in this table, a distinction must be made between derived nouns denoting [-HUMAN] entities and derived nouns with [+HUMAN] denotations. Since, generally speaking, only derived nouns of the former category can (or must) select for one or more complements, this section will only be concerned with derived adjectives of this type.

Table 18: Deadjectival nouns

		SUFFIX	ADJECTIVAL STEM	DERIVED FORM
[-HUMAN]	+PRODUCTIVE	*-(ig)heid*	*naar* 'nasty'	*narigheid* 'trouble'
			zwak 'weak'	*zwakheid* 'weakness'
		-iteit	*spontaan* 'spontaneous'	*spontaniteit* 'spontaneity'
			subtiel 'subtle'	*subtiliteit* 'subtlety'
		-te/-de	*hoog* 'high'	*hoogte* 'height'
			schaars 'scarce'	*schaarste* 'scarcity'
	-PRODUCTIVE	*-dom*	*rijk* 'rich'	*rijkdom* 'wealth'
			oud 'old'	*ouderdom* 'old age'
		-nij	*lekker* 'tasty'	*lekkernij* 'delicacy'
			woest 'savage'	*woestenij* 'wilderness'
		-nis	*duister* 'dark'	*duisternis* 'darkness'
			droef 'sad'	*droefenis* 'sadness'
		-schap	*blij* 'happy'	*blijdschap* 'gladness'
			zwanger 'pregnant'	*zwangerschap* 'pregnancy'
[+HUMAN]	+PRODUCTIVE	*-erd/aard*	*bang* 'afraid'	*bangerd* 'coward'
			lui 'lazy'	*luiaard* 'sluggard'
		-erik	*bang* 'afraid'	*bangerik* 'coward'
			vies 'dirty'	*viezerik* 'slob'
	-PRODUCTIVE	*-eling*	*jong* 'young'	*jongeling* 'youngster'

The category of derived nouns ending in *-igheid* includes only nouns that do not have an adjectival counterpart ending in *-ig*. For example, the noun *zoetigheid* 'sweet' is probably derived from the adjective *zoetig*, which is itself derived from the adjective *zoet* 'sweet' by means of the productive *–ig* ending with the meaning "rather/more or less A". In cases like *zuinigheid* 'thrift' the noun is derived by means of the suffix *-heid* from the monomorphemic stem *zuinig* 'thrifty' (cf. **zuin*). The category referred to here consists of nouns like *flauwigheid* 'poor joke', *slimmigheid* 'trick/clever move' and *stommigheid* 'folly' that can be assumed to be

derived directly from such adjectives as *slim*, *naar* and *stom*, as these do not readily accept the –*ig* ending: ?*slimmig*, *narig, ??*stommig*; cf. Haeseryn et al. (1997: 671) and De Haas & Trommelen (1993: 248/9; 302). Nouns ending in -*igheid* generally have a somewhat negative evaluative meaning, are largely lexicalized and are typical of spoken language.

In addition to the endings in Table 18, there are a number of less frequent and nonproductive endings. Examples are given in (212) for the endings –*er/aar* and -*tje*, respectively.

(212) Deadjectival nouns ending in -*er*/-*aar* and -*tje*

SUFFIX	ADJECTIVAL STEM	DERIVED NOUN
-*er*/-*aar*	*eigen* 'own'	*eigenaar* 'owner'
	vrijwillig 'voluntary'	*vrijwilliger* 'volunteer'
-*tje*	*blauw* 'blue'	*een blauwtje lopen* 'to be turned down'
	geel 'yellow'	*geeltje* '25-guilder bill'
	groen 'green'	*groentje* 'novice'
	groot 'big'	*grootje* 'granny'
	klein 'small/little'	*kleintje* 'child'

The examples in (213) illustrate the more or less productive process according to which the inflected form of an attributive adjective, preceded by the definite or indefinite article, can be used as a full noun phrase. This process, which is sometimes referred to as nominalization (e.g., Haeseryn et al. 1997), can derive both [-HUMAN] and [+HUMAN] nouns: in the former case the noun is preceded by the definite neuter article *het* 'the', as illustrated in the (a)-examples; in the latter case the noun is preceded by the definite non-neuter article *de* 'the', as shown in (213b).

(213) a. het aardige/bijzondere/mooie   (van het geval)
        the nice/special/beautiful/difficult   of the case
        'the nice/the special/the good/the difficult thing (about the case)'
    a′. het kwade/het goede
        the evil/the good
        'evil/good'
    b. de/een dakloze/blinde/zieke/geleerde
        the/a   homeless/blind/ill/learned
        'the/a homeless/blind/ill/learned person'

It is, however, not uncontroversial that we are dealing with nominalizations in (213). An alternative analysis, which will be adopted here, is one according to which these constructions contain a phonetically empty nominal head; cf. Kester (1996). This means that we are dealing with an attributively used adjective followed by an empty noun, and for this reason these constructions are discussed in Section A5.4.

II. Meaning of the [-HUMAN] deadjectival noun

Deadjectival [-HUMAN] nouns are productively derived by means of the suffixes -*heid*, -*iteit*, and -*te*/-*de*. Haeseryn et al. (1997: 671) paraphrases the meaning of nouns ending in -*heid* as: *het + adjective + zijn* 'being + adjective'. A noun phrase

like *Maries nauwkeurigheid* in (214) is therefore supposed to refer to the state of Marie being accurate, and the sentence as a whole expresses that the act of saving Jan is predicated of this state. Since the function and meaning of the ending *-iteit* is similar to that of *-heid* (the difference between the two being that *-iteit* attaches to loanwords), the derived noun *spontaniteit* 'spontaneity' would denote the state of being spontaneous. Haeseryn et al. (1997: 680), finally, claims that nouns formed by means of the ending *-te/-de* have a meaning comparable to those ending in *-heid* and *–iteit*; with a word like *schaarste* 'scarcity' denoting the state of being scarce.

(214)   Maries nauwkeurigheid heeft Jan gered.
         Marie's accuracy   has   Jan saved

A more detailed examination of the data proves such paraphrases to be unsatisfactory. Since adjectives do not denote states but properties, which are typically assigned to some entity, we may expect that deadjectival nouns denote properties as well, albeit that now the intention is to predicate something about them. Under this view, the noun phrase *Maries nauwkeurigheid* in (214) does not refer to a state of Marie being accurate, but to the property denoted by *nauwkeurig* 'accurate', which is said to be true of Marie; cf. Chomsky (1970: 213) and Keizer (1992b). Accordingly, example (214) does not express that it is the state of Marie being accurate that has saved Jan, but the fact that the property of being accurate applies to Marie. Similarly, in (215) it is not claimed that Jan's being lazy has no limits, but rather that the property laziness, as assigned to Jan, has no limits.

(215)   Jans luiheid   kent geen grenzen.
         Jan's laziness has   no limits

In (214) and (215) the difference between the two approaches may seem to be subtle, but it becomes clearer when we look at adjectives denoting physical properties. Obviously, a derived noun like *hoogte* 'height' in (216) does not denote the state of being high; as a matter of fact, the tower may not be high at all, which is due to the fact that the noun *hoogte* is derived from the neutral form of the measure adjective *hoog* 'high'; cf. Section A3.1.4. Instead, *hoogte* denotes a (measurable) property of a concrete entity. In other words, (216) does not claim that the fact that the tower has a certain height is impressive; it is rather the actual height of the tower that is impressive.

(216)   De hoogte van de toren   is indrukwekkend.
         the height of the tower   is impressive

In sum, we can conclude that whereas deverbal nouns denote states of affairs (including states), deadjectival nouns denote properties.

Some deadjectival nouns are ambiguous between an abstract and a concrete reading. Examples are given in (217), with the primeless examples illustrating the abstract and the primed examples illustrating the concrete reading. The concrete nouns have entirely lexicalized.

(217) a.　Zijn slordigheid　is erg irritant.
　　　　　his slovenliness　is very annoying
　　a′.　Zijn tekst　zat nog　vol　slordigheden.
　　　　　his text　　sat still　full　inaccuracies
　　　　　'His text was still full of careless mistakes.'
　　b.　De zoetigheid van dat spul　is opmerkelijk.
　　　　　the sweetness of that stuff　is remarkable
　　b′.　Jan　is dol　op zoetigheid.
　　　　　Jan　is fond of sweets
　　c.　??Wat　opvalt　aan Jan　is zijn aardigheid.
　　　　　what　strikes　to Jan　is his nice-ness
　　　　　'What strikes one about Jan is his kindness/humor.'
　　c′.　Jan　bracht　een aardigheidje voor me　mee.
　　　　　Jan　brought　a nice-ness$_{dim}$　for me　prt.
　　　　　'Jan brought me a small present.'

In some cases, the ambiguity is not between an abstract and a concrete interpretation, but between two abstract ones. Thus, deadjectival nouns like *zekerheid* 'certain-ness' can be used either to refer to the property *zeker* 'certain', as in *Peters zekerheid is nogal irritant* 'Peter's certainty/confidence is rather irritating' or to abstract entities that have the property certain, as *in Er zijn weinig zekerheden in het leven* 'Life doesn't have many certainties', where the noun in question has become lexicalized.

　　　Finally, there are deadjectival nouns that only allow a lexicalized reading. The noun *liefde* 'love', as used in *Jans liefde (voor de taalkunde)* 'Jan's love (of linguistics)' does not refer to the property *lief* 'sweet' as assigned to Jan, but to the love Jan feels for someone/something else; as such, its argument structure differs from that of the adjective *lief*. Likewise, a noun like *verworvenheid* 'achievement' can only be used to refer to the things achieved, not to a property of these things. It will be clear that in those cases where the derived noun is lexicalized, it no longer shares the argument structure with the original adjective but has become avalent (like a basic noun) or may even have its own argument (like a relational noun).

1.3.2.2. Relation to the base adjective

As with deverbal nouns, deadjectival nouns can be said to inherit the argument structure of the base adjective. That adjectives have an argument structure follows directly from the fact that they have a predicative function: both in their attributive and in their predicative use, adjectives assign a property to the referent of a noun phrase. An adjective like *hoog* assigns the property of "being high" to the referent of the argument it is predicated of or attributed to, as *(de) toren* 'the tower' in *de toren is hoog* 'the tower is high' or *de hoge toren* 'the high tower'. We will assume that this argument is assigned the semantic role "Ref". As indicated in (218), a deadjectival noun like *hoogte* 'height' inherits this semantic role from the input adjective, which means that the denotation of the resulting noun is dependent on the presence of some other noun. Once again, we find here the ambivalence typical of nominalized elements: although the derived noun *hoogte* 'height' has a referring

function, its denotation (a property) still requires that the semantic role Ref be assigned to some other entity like *de toren* 'the tower' in (218b).

(218)　　• Nouns derived from a monadic adjective
　　a.　HOOGTE$_N$ (Ref)
　　b.　de hoogte　van de toren
　　　　the height　of the tower

Observe that the argument of the deadjectival noun typically appears as a PP headed by the functional preposition *van*. Alternatively, the argument may appear prenominally as a genitive noun phrase or a possessive pronoun, as in *Jans/zijn verlegenheid* 'Jan's/his shyness'; see Section 2.2.4 for a more detailed discussion of the form and position of the complements).

　　Most adjectives, and consequently most deadjectival nouns, have only a single argument slot, which is filled by the entity to which the property denoted by the adjective is assigned. In some cases, however, adjectives have a second argument. Structurally, such adjectives bear a close resemblance to transitive verbs (from which they are sometimes derived): they have both a complement, and an argument they are predicated of. An example of such a (deverbal) adjective is *ingenomen* 'pleased' in (219), which takes a *met*-PP as its complement: *Jan is ingenomen met het resultaat* 'Jan is pleased with the result'. Example (219b) shows that the complement of the adjective is inherited by the deadjectival noun *ingenomenheid* 'satisfaction'. For the sake of convenience, and by analogy with the verbal domain, we will use the label theme to identify the role of the complement.

(219)　　• Nouns derived from a dyadic adjective
　　a.　INGENOMENHEID$_N$ (Ref, Theme)
　　b.　Jans ingenomenheid　met het resultaat
　　　　Jan's　satisfaction　　with the result

Other examples that show that the preposition selected by the base adjective is also the one selected by the derived noun are given in (220).

(220) a.　*nieuwsgierig naar ...*　　　'curious about ...'
　　a′.　*nieuwsgierigheid naar ...*　'curiosity about'
　　b.　*bereid tot ...*　　　　　　'willing to ...'
　　b′.　*bereidheid tot ...*　　　　'willingness to ...'
　　c.　*blind voor ...*　　　　　　'blind to ...'
　　c′.　*blindheid voor ...*　　　　'blindness to ...'

　　There is a small set of adjectives that, apart from the (obligatory) external argument, take two complements. An example of such a triadic adjective is *boos*, which may (optionally) take an *op*-PP and an *over*-PP as its complements: *Jan is boos op Peter over die opmerking* 'Jan is angry with Peter about that remark'. As might be expected, all three arguments are inherited by the derived noun *boosheid* 'anger', with the complements appearing in the same form. For concreteness, we assume that the *over*-PP is given the thematic role of source.

(221)   • Nouns derived from a triadic adjective
    a.   BOOSHEID$_N$ (Ref, Theme, Source)
    b.   Jans boosheid op Peter   over die opmerking
        Jans anger   with Peter about that remark

1.3.2.3. Restrictions on the derivational process

As can be seen in Table 18 above, the only productive endings in the nominalization process are -(*ig*)*heid*, -*iteit* and -*te*. This does not mean, however, that by means of these endings all adjectives can be converted into nouns: nominalization is restricted in several ways.

I. The affix is not entirely predictable

It is not always predictable which of the endings will be used, and in those cases where two endings can be used, it seems impossible to account for the difference in affixation in a systematic way. Thus, as regards their meaning, deadjectival nouns ending in -*te*/-*de* are comparable to those ending in -*heid*: what is denoted by the derived nouns is the property denoted by their adjectival base. Yet, this does not account for the fact that sometimes both forms are possible, as in the cases in (222). In some cases, one of the two forms has at least one lexicalized meaning; examples are *gekte* 'craze/hype', *grootheid* 'variable/celebrity'. Often, however, the two forms can be regarded as near-synonyms, despite the fact that they may be used in different contexts.

(222) a. *zwak* 'weak'   a′. *zwakheid/zwakte* 'weakness'
     b. *gek* 'crazy/funny' b′. *gekheid* 'jest'/*gekte* 'craze/hype'
     c. *groot* 'big'   c′. *grootheid* 'variable'/*grootte* 'size'
     d. *vol* 'full'   d′. *volheid/volte* 'fullness'
     e. *koel* 'cool'   e′. *koelheid* '(emotional) coldness'/*koelte* 'coolness'
     f. *leeg* 'empty'   f′. *leegheid/leegte* 'emptiness'

Similarly, the choice between the endings -*heid* and -*iteit* is not always self-evident. Whereas usually -*iteit* is restricted to non-Germanic adjectives (*naïviteit* 'naivety', *subtiliteit* 'subtlety', *uniformiteit* 'uniformity', *genialiteit* 'genius', *spontaniteit* 'spontaneity'), Germanic adjectives may, occasionally, also take this ending, as shown by the existence of the deadjectival nouns *stommiteit* 'stupidity/folly' and *flauwiteit* 'silly remark', which are derived from Dutch base adjectives.

II. The input adjective must be set-denoting

Only the set-denoting adjectives can readily be used as input for nominalization; relational, evaluative and modal adjectives are more difficult to nominalized; see Table 19. That nouns like *Italiaansheid* are at least marginally possible (as is clear from the fact that they occasionally occur on the internet) is due to the fact that relational adjectives like *Italiaans* 'Italian' may shift in the direction of the set-denoting adjectives. as is clear from the fact that they can occur as predicates in copular constructions when preceded by the modifier *typisch* 'typically': *Dit gedrag is typisch Italiaans* 'This behavior is typically Italian'. Another clear example is

regelmatig, which in some cases can be readily used as the predicate of a copular construction; see Section A1.3.3 for more discussion.

(223) a. Zijn ademhaling is regelmatig.
        his breathing   is regular
    b. de regelmatigheid van zijn ademhaling
        the regularity   of his breathing

Table 19: Input restrictions on deadjectival nominalization

	INPUT ADJECTIVE	TRANSLATION	DERIVED NOUN
SET-DENOTING ADJECTIVE	*vriendelijk*	kind	*vriendelijkheid*
	zwak	weak	*zwakheid/zwakte*
	breed	wide	*breedte*
RELATIONAL ADJECTIVE	*Italiaans*	Italian	[??]*Italiaansheid*
	freudiaans	Freudian	[??]*freudiaansheid*
	dagelijks	daily	[??]*dagelijksheid*
	dadelijk	immediate	*dadelijkheid*
	voormalig	former	*voormaligheid*
	houten	wooden	*houtenheid*
	adellijk	noble	[??]*adellijkheid* (but: *adeldom*)
	cultureel	cultural	*cultureelheid*
EVALUATIVE ADJECTIVE	*deksels*	confounded	*dekselsheid*
	drommels	cursed	*drommelheid*
	verrekt	damn'd	*verrektheid*
MODAL ADJECTIVE	*vermeend*	alleged	*vermeendheid*
	eventueel	possible	*eventueliteit*/[#]*eventualiteit*
	duidelijk	obvious	[#]*duidelijkheid*

III. The input adjective may not take a nominal complement

The examples in (224) and (225) show that adjectives with genitive and dative complements cannot be readily nominalized.

(224)   • Nouns derived from adjectives taking a genitive NP-complement
    a. zich iets bewust zijn   a′. *de zich bewustheid van iets
       to be aware of something
    b. iets gewend zijn   b′. *de gewendheid van iets
       to be used to something
    c. iets gewoon zijn   c′. *de gewoonheid van iets
       to be used to something
    d. iets indachtig zijn   d′. *de indachtigheid van iets
       to be mindful of something
    e. iets moe/zat/beu zijn   e′. *de moeheid/zatheid/beuheid van iets
       to be tired of/fed up with something
    f. iets machtig zijn   f′. *de machtigheid van iets
       to have command of something

(225)   • Nouns derived from adjectives taking a dative NP-complement
    a.   iemand aangeboren zijn   a′. *de aangeborenheid aan iemand
        to be innate to someone

    b.   iemand bespaard zijn   b′. *de bespaardheid aan iemand
        to be spared to someone

    c.   iemand duidelijk zijn   c′. *de duidelijkheid aan iemand
        to be clear to someone

    d.   iemand goedgezind zijn   d′. *de goedgezindheid aan iemand
        to be well disposed to someone

    e.   iemand bekend zijn   e′. *de bekendheid aan iemand
        to be known to someone

    f.   iemand trouw zijn   f′. *de trouwheid aan iemand
        to be dedicated to someone

    g.   iemand vreemd zijn   g′. *de vreemdheid aan iemand
        to be unknown to someone

    h.   iemand vertrouwd zijn   h′. *de vertrouwdheid aan iemand
        to be familiar to someone

For some of these adjectives in (224) and (225), it is actually rather surprising that they cannot be the input for nominalization, given that they may also occur with a PP-complement instead of an NP-complement. This is illustrated for some of the above examples in (226).

(226) a. zich bewust zijn van iets   a′. *de zich bewustheid van iets
        to be aware of something

    b. moe/zat/beu zijn van iets   b′. *de moeheid/zatheid/beuheid van iets
        to be tired of/fed up with something

    c. trouw zijn aan iemand   c′. *de trouwheid aan iemand
        to be dedicated to someone

In some cases the derived noun is acceptable when used without the NP-complement. This is especially the case with deadjectival nouns derived from adjectives that optionally take a dative complement.

(227) a. De gevolgen   zijn (haar) bekend/duidelijk.
        the consequences are her   known/clear
        'She is familiar with the consequences.'

    a′. de bekendheid/duidelijkheid van de gevolgen   (*aan haar)
        the known-ness/clearness   of the consequences   to her

    b. Peter is (zijn werk) toegewijd.
        Peter is his work   devoted
        'Peter is devoted to his work.'

    b′. Peters toegewijdheid   (*aan zijn werk)
        Peter's devotedness   to his work

    c. Deze omgeving is (Jan) vertrouwd.
        this environment is Jan   familiar
        'Jan knows these surroundings.'

    c′. de vertrouwdheid van deze omgeving (*aan Jan)
        the familiarity   of this environment   to Jan

For more details concerning the (im)possibilities of complementation of deadjectival nouns, see Section 2.2.4.

IV. Isolated cases

There are quite a large number of set-denoting adjectives that accept none of the endings -(*ig*)*heid*, -*iteit* and -*te*, without there being a common feature accounting for this fact. Some examples are given in (228). The impossibility of examples like (228d′) or (228e′) could perhaps be accounted for by appealing to blocking since the lexicon already contains a synonym (respectively *leeftijd/ouderdom* 'age/old age' and *jeugd/jeugdigheid* 'youth/youthfulness'), but in other cases no explanation seems to be available.

(228) a. *dood* 'dead'   a′. **doodheid*/**doodte*
      b. *levend* 'alive'   b′. **levendheid*/**levendte*
      c. *gewond* 'wounded'   c′. **gewondheid*/**gewondte*
      d. *oud* 'old'   d′. #*oudheid*/**oudte*
      e. *jong* 'young'   e′. **jongheid*/**jongte*
      f. *kapot* 'broken'   f′. **kapotheid*
      g. *jarig* 'celebrating/one's birthday'   g′. **jarigheid*

1.3.2.4. Conclusion

Like deverbal nouns, deadjectival nouns largely exhibit the syntactic behavior of typical nouns. Thus, they have lost most of the characteristics of adjectives. For example, they can no longer be inflected; it is always the uninflected form that is input to the nominalization process and the derived noun as a whole cannot take an adjectival ending. Similarly, modification by means of °intensifiers is no longer possible, and it is no longer possible to express degrees of comparison. Illustrations of these facts can be found in (229).

(229) a. zwak(*ke)heid; zwakheid(*e)
         weakness
      b. *erg zwakheid; *nogal zwakheid
         very weakness; rather weakness
      c. *zwakkerheid; *zwakstheid
         weakerness; weakestness

On the other hand, the examples in (230) show that these derived nouns possess all the typical features of nouns: they can be definite or indefinite; they allow adjectival modification, post-modification by a *van*-PP and premodification by a genitive noun phrase or possessive pronoun; they can be quantified, questioned and relativized; finally, on a concrete or lexicalized reading, pluralization is possible.

(230) a. een/de grote zwakheid (van de mens)
         a/the   big weakness   of the human
         'a/the big weakness (of man)'
      b. zijn/Jans/elke/welke   zwakheid
         his/Jan's/each/which   weakness

   c.   alle zwakheden die de mens   kenmerken
           all weaknesses   that the human   characterize
           'all weaknesses characterizing man'

When we translate this in terms of the categorical status of the different types of deadjectival nouns, we may say that, apart from the inheritance of the arguments of the base adjective (including number, thematic role and optionality of these arguments), deadjectival nouns simply seem to behave as full nouns. Table 20 gives an overview of the relevant features.

Table 20 Adjectival and nominal characteristics of deadjectival nouns

ADJECTIVAL PROPERTIES	presence of arguments	yes
	modification by intensifiers	no
	inflection	no
	degrees of comparison expressed	no
	subject realized as noun phrase	no
	genitive/dative NP-complements	no
	pre-head position of PP-complements	no
NOMINAL PROPERTIES	adjectival modification	yes
	subject realized as genitive noun phrase or *van*-PP	yes
	postnominal position of PP-complements	yes
	definiteness	yes
	indefiniteness	yes
	quantification/relativization	yes
	pluralization	yes/no

1.3.3. Denominal nouns

Suffixation of nouns to form new nouns can be achieved by means of a number of endings, both Germanic and non-Germanic. We start with a description of diminutive formation, which is followed by the discussion of several suffixes by means of which person nouns can be derived.

I. Diminutive form

The diminutive suffix *-je* and its allomorphs is probably the most productive nominal affix (apart from the plural affixes discussed in 1.1.1). The precise phonetic realization of the diminutive suffix depends on phonological properties of the stem.

(231) a.   The suffix *-etje* is used after the nasal consonants /n/, /m/ or /ŋ/ or the liquids /l/ or /r/, when they are immediately preceded by a short vowel carrying stress.
      b.   The suffix *-tje* is used with words ending in /n/ or a liquid, provided that they are not preceded by a short stressed vowel; it also attaches to words ending in a long vowel, a diphthong or a schwa.
      c.   The suffix *-pje* is only found after words ending in /m/, again provided that the latter are not immediately preceded by a stressed short vowel.

d. The suffix *-kje* is found after the unstressed suffix-like ending *-ing*, which is pronounced as /ɪŋ/ (*koning*/*kóninkje* 'little king'). Exceptions are cases in which the syllable preceding *-ing* is unstressed (cf. *wándelingetje* 'little walk') and person nouns derived by the affix *-ling* (*léerlingetje* 'little pupil'); these always get the ending *-etje*.

e. In the remaining cases, the suffix *-je* is used.

Examples are given in Table 21; for further details on the formation of diminutives, we refer the reader to De Haas & Trommelen (1993) and Haeseryn et al. (1997).

Table 21: Diminutive forms

SUFFIX	NOMINAL STEM	DERIVED FORM	TRANSLATION
-etje	*kam*	*kammetje*	little comb
	pen	*pennetje*	little pen
	bel	*belletje*	little bell
	kar	*karretje*	little cart
	slang	*slangetje*	little snake
-tje	*tuin*	*tuintje*	little garden
	zaal	*zaaltje*	little hall
	deur	*deurtje*	little door
	la	*laatje*	little drawer
	kooi	*kooitje*	little cage
	tante	*tantetje*	little aunt
-pje	*dakraam*	*dakraampje*	little skylight
	geheim	*geheimpje*	little secret
	storm	*stormpje*	little storm
-kje	*haring*	*harinkje*	little herring
	koning	*koninkje*	little king
-je	*dak*	*dakje*	little roof
	aap	*aapje*	little monkey

II. Person nouns

Some of the person suffixes discussed in Section 1.3.1.5 can also take a nominal base: the suffix *–er*, for example, can be added to a (typically non-human) noun to form another noun denoting a person; cf., e.g., Van Santen (1992). We will call these derived nouns "neutral" person nouns, as opposed to the feminine person nouns that will be discussed shortly. Both the type of input noun and the semantic relation between the input noun and the derived noun vary.

The input noun of the "neutral" person names can be abstract like *wetenschap* 'science', concrete like *kluis* 'hermitage' or *molen* 'mill', and it can even be an abbreviation like *PvdA* (political party) or *AOW* (pension law). The referents of these derived nouns are all in some relation with the denotation of the base noun. The noun *wetenschapper* denotes the set of persons practicing science, *kluizenaar* 'hermit' denotes the set of persons living in a secluded environment, and an *AOW-er* is someone who is getting a pension on the basis of the old age pension law.

A more systematic set is constituted by the geographical person names derived from geographical place names. Here we give examples derived by means of the suffixes *-aan* and *-ees*; see Section A1.3.3.2 for a complete overview of the affixes deriving geographical person nouns. Another systematic group is the group of feminine person nouns derived from "neutral" person nouns by means of the suffixes *–in*, *–e,* and *-es* (among others).

Table 22: Denominal person nouns

PERSON NOUN	NOMINAL STEM	DERIVED FORM
"NEUTRAL" -er/aar	*wetenschap* 'science'	*wetenschapper* 'scientist'
	kluis 'hermitage' *molen* 'mill'	*kluizenaar* 'hermit' *molenaar* 'miller'
	PvdA 'labor party' *AOW* 'old age pension'	*PvdA-er* 'labor party politician' *AOW-er* 'old age pensioner'
GEOGRAPHICAL -er/aan/ees	*Amsterdam* *Holland*	*Amsterdammer* *Hollander* 'Dutchman'
	Amerika 'America' *Afrika* 'Africa'	*Amerikaan* 'American' *Afrikaan* 'African'
	Vietnam *China*	*Vietnamees* 'Vietnamese' *Chinees* 'Chinese'
FEMININE *-in/es/e*	*vriend* 'friend' *keizer* 'emperor'	*vriendin* 'girl-friend' *keizerin* 'empress'
	voogd 'guardian' *baron* 'baron'	*voogdes* '(woman) guardian' *barones* 'baroness'
	agent 'policeman' *student* 'student'	*agente* 'policewoman' *studente* 'female student'

III. Other cases

In addition to the more productive affixes discussed above, there are a number of nonproductive endings, each effecting a specific semantic change. The most frequent of these endings are listed below.

A. **-**dom

Derived nouns ending in *–dom* denote a group of entities each of which belongs to the denotation of the input noun, as in example (232a&b), or to an area (historically) reigned by or governed by the entity denoted by the input noun, as in example (232c&d).

(232) a. *mens* 'human being'   a′. *mensdom* 'human race'
      b. *priester* 'priest'   b′. *priesterdom* 'priesthood'
      c. *prins* 'prince'   c′. *prinsdom* 'principality'
      d. *bisschop* 'bishop'   d′. *bisdom* 'bishopric'

B. **-**schap

A noun followed by the ending *–schap* can refer either to a certain capacity, function or rank, as in the examples in (233a-c), or to a branch of industry, as in (233d-g).

(233) a. *moederschap* 'motherhood'
      b. *vijandschap* 'enmity'
      c. *leiderschap* 'leadership'
      d. *agentschap* 'branch office'
      e. *genootschap* 'society'
      f. *landbouwschap* 'agricultural board'
      g. *waterschap* 'district water board'

C. ge-*N*-te

This compound affix typically changes an individual noun, denoting a particular entity, into a mass noun, denoting a group of such entities.

(234) a. *berg* 'mountain'   a′. *gebergte* 'mountain range'
      b. *boef* 'villain'   b′. *geboefte* 'scum'
      c. *been* 'bone'   c′. *gebeente* 'bones/skeleton'
      d. *steen* 'stone'   d′. *gesteente* 'rock'
      e. *vogel* 'bird'   e′. *gevogelte* 'fowl'

1.3.4. Other cases

This section briefly mentions two other types of derived noun, formed by nonproductive suffixation processes. As shown by example (235), some prepositions can be turned into nouns by adding the diminutive ending *–je* (or one of its allomorphs). All the resulting nouns are fully lexicalized.

(235) a. *om* 'around'   a′. *ommetje* 'stroll'
      b. *uit* 'out (of)'   b′. *uitje* 'outing'
      c. *toe* 'after'   c′. *toetje* 'desert'
      d. *tussendoor* 'in between' d′. *tussendoortje* 'snack'
      e. *vooraf* 'beforehand'   e′. *voorafje* 'appetizer'

Fairly frequent is the use of a numeral as the basis of noun formation. In most cases a suffix is used, as in (236a), though bare numerals may also have a nominal use, as shown in (236b).

(236) a. *tweeling* 'twin', *tiental* 'ten/dozen', *tientje* 'tenner'
      b. *een zes(je)* 'a (meager) six', *een twee* 'a two', etc.

1.4. Compounding

New nouns can also be formed by compounding, that is, on the basis of an existing noun that combines with another free morpheme. The rightmost element of a compound determines the syntactic category of the whole, a generalization known as the °right-hand head rule. This means that in nominal compounds the second element is always a noun. The first element, on the other hand, may be a noun, a

verb, an adjective, a preposition or a numeral. Examples are given in (237). Note that in the examples in (237c′), the first element is an adverbially used adjective. Thus a *zwartwerker* 'moonlighter' is not a worker who is black, but who works in a particular way.

(237) a.   N + N: *schoenmaker* 'shoemaker', *kabeltelevisie* 'cable TV'
     b.   V + N: *ophaalbrug* 'drawbridge', *drinkwater* 'drinking-water'
     c.   A + N: *sneltram* 'express tram', *grootvader* 'grandfather'
     c′.   A(dv) + N: *zwartwerker* 'moonlighter', *buitenspeler* 'outside player'
     d.   P + N: *achtertuin* 'back garden', *aandeel* 'share'
     e.   Num + N: *driewieler* 'tricycle', *tweemaster* 'two-master'

There are three types of nominal compounds. By far the majority of compound nouns is endocentric, that is, with the second element functioning as the semantic head. In this type of compounding, the compound denotes a subset of the set denoted by the second noun (AB ⊂ B): *huisdeur* 'front door', for example, denotes a (particular type of) door. Only a few compound nouns are exocentric. In such cases, the compound does not denote a subset of the denotation of the second noun, and the compound cannot be paraphrased as a particular type of the entity denoted by the second (or first) element. The compound *wijsneus*, for instance, does not denote a particular kind of nose, but a particular kind of person (know-it-all). Another small subset of is that of the copulative compounds, in which both members are nominal. The denotation of compounds belonging to this category is determined by the denotation of both members (AB = A ∩ B): a *kind-ster* 'child-star' is both a child and a star.

(238)   • Types of compounds
     a.   Endocentric: denotation is a subset of the denotation of the second member
        (AB ⊂ B): *huisdeur* 'front door'; *tussendeur* 'communicating door'; *schoolbord* 'blackboard'; *eetlepel* 'soupspoon'; *personenauto* 'passenger car', *kinderboek* 'children's book'.
     b.   Exocentric: denotation is not determined by the other members
        (AB ≠ B or A): *wijsneus* smart ass'; *spleetoog* 'slant-eye', *halfbloed* 'half-blood', *draaikont* 'restless person'.
     c.   Copulative: denotation is determined by the denotation of both members
        (AB = A ∩ B): *kind-ster* 'child-star', *speler-coach* 'player-coach', *tolk-vertaler* 'interpreter-translator'.

In some cases there may be doubt as to whether we are dealing with an endocentric or an exocentric compound. Cases at hand may be formations like *neppistool* 'fake gun' or *speelgoedpistool* 'toy gun'. It is clear that in these cases we are not dealing with entities that are prototypical members of the set denoted by the noun *pistool*, but on the other hand it is not evident that these entities do not belong to this set, given that examples like *Dit pistool is niet echt* 'This gun is not real/a fake' (*Friesch Dagblad*, December 18. 2005) sound perfectly acceptable. Apparently the writer of this sentence does consider fake guns as a subset of the set denoted by *pistool* 'gun'. From this we conclude that language users simply treat the formations under discussion as endocentric compounds.

Although there may be certain tendencies, the semantic (syntactic) relation between the two elements of an endocentric compound noun is largely unpredictable. This unpredictability is illustrated nicely by the pair *beendermeel* 'bone-meal', *kindermeel* 'children's meal'; the first denotes meal made of bones, whereas the second normally denotes flour used to make porridge for children. As can be seen from the list below, virtually any imaginable semantic relation can be found in Dutch compounds.

(239) a.   agent/subject (N + N): *kleuterpraat* 'child's talk', *waterval* 'waterfall'
     b.   agent/subject (V + N): *vergrootglas* 'magnifying glass', *afvoerpijp* 'drainpipe'
     c.   theme/object (N + N): *schoenmaker* 'shoemaker', *bankoverval* 'bank robbery'
     d.   theme/object (V + N): *drinkyoghurt* 'yogurt drink', *ophaalbrug* 'drawbridge'
     e.   predicative (A + N): *sneltram* 'express tram', *frisdrank* 'soft drink'
     f.   goal/purpose: *bloembak* 'flower box', *zoeklicht* 'searchlight'
     g.   cause: *gasontploffing* 'gas explosion', *speelschuld* 'gambling debt'
     h.   location: *tuinfeest* 'garden party', *havenarbeider* 'dock worker'
     i.   time: *ochtendkrant* 'morning paper', *jaaromzet* 'annual turnover'
     j.   instrument: *bijlslag* 'blow with an axe', *treinvervoer* 'rail transport'
     k.   comparison: *poedersneeuw* 'powder snow', *torenflat* 'skyscraper'
     l.   whole-part: *boomtak* '(tree) branch', *bezemsteel* 'broomstick'
     m.   part-whole: *appelboom* 'apple tree', *kwarktaart* 'cheesecake'
     n.   manner: *sneltekenaar* 'fast drawer ≈ cartoonist', *zwartwerker* 'black worker ≈ moonlighter'
     o.   result: *drooglegging* 'dry laying ≈ reclamation', *openbaarmaking* 'public making ≈ publication'
     p.   metaphorical: *lammetjespap* 'porridge (mainly used for infants and toddlers)'

Many compounds are lexicalized in the sense that the meaning of the compound cannot be fully inferred from the meaning of its composite parts. Not only exocentric compounds, for which this is to be expected, but also endocentric and copulative compounds may be lexicalized. Examples are given in (240).

(240) a.   Lexicalized endocentric nominal compounds: *wereldwinkel* 'third world shop', *spijkerbroek* 'jeans', *passievrucht* 'passion fruit', *suikeroom* 'rich uncle', *tennisarm* 'tennis elbow', etc.
     b.   Lexicalized exocentric nominal compounds: *washand* 'washcloth', *leerstoel* 'chair, academic discipline', *adamsappel* 'Adam's apple', *kuddedier* 'herd animal', *melkweg* 'milky way', etc.
     c.   Lexicalized copulative nominal compounds: *sergeant-majoor* 'first sergeant'

Many but not all N + N compounds involve a linking element in between the two members. In many cases, the form of the linking element depends on the first member of the compound and closely resembles the plural ending of this member: *-e(n)-*, *-s-* or *-er-*. Some examples of compound nouns with such a linking element are given in (241). Note that the presence of linking element does not imply some notion of plurality: cf. *hondenkop* 'head of a dog'. The choice between the linking

elements *-en-* and *-e-* is subjected to complicated, recently revised and hotly debated orthographic rules (See *Woordenlijst der Nederlandse Taal*, edition 1995, §5.1.1/2). Since the pronunciation of the two linking elements is identical, these rules are a political rather than a linguistic issue, and will therefore not be discussed here; see Booij (1996) for useful discussion and historical background.

(241) a. *boek-en-kast* 'bookcase', *erwt-en-soep* 'pea soup'
　　　b. *zonn-e-stelsel* 'solar system', *Koninginn-e-dag* 'Queen's birthday'
　　　c. *varken-s-hok* 'pigsty', *leven-s-werk* 'life work'
　　　d. *kind-er-boek* 'children′s book'; *ei-er-schaal* 'egg shell'

De Haas & Trommelen (1993) claim that next to the linking element *–er-*, there is a linking element *-eren-*. Some examples that can be found in the Van Dale dictionary are given in (242). It is not entirely clear whether we can conclude on the basis of these examples whether there is indeed a linking element *-eren-*. First, the first member *goederen* in compounds like (242a) can be seen as a *plurale tantum* (the singular form *goed* only occurs in a set of fixed expressions), so there is no reason to assume that there we are dealing with a linking element. The examples in (242b) potentially involve a linking element *-eren-*, but these formations seem to alternate with the compound *volkenmoord* and *Volkenbond* that contain the linking element *-en-*. Furthermore, Given that the formations in (242b) do not belong to the colloquial register, it seems doubtful that we may conclude from these examples that there is indeed a linking element *-eren-*.

(242) a. *goederentrein* 'goods train'; *goederenvervoer* 'goods transport', etc.
　　　b. *volkerenmoord* 'genocide'; *Volkerenbond* 'League of Nations'

Another example provided by De Haas & Trommelen is *kinderengejoel* 'jeering of children', which seems to be a new coinage (no examples can be found on the internet). It seems likely, however, that it is the form *kindergejoel* that would normally be the one used in spontaneous speech. This is especially the case when we want to express that the jeering comes from a single child; in that case (243a) would be outright unacceptable and we have to use *kindergejoel*. This observation is perhaps also relevant for the assessment of the examples in (243b-d), which can be found on the internet, and in which the first member is also necessarily construed as referring to a non-singleton set of entities: *-eren-* can never be used when the first member is construed as singular; *-er-*, on the other hand, is common when the first member is construed as plural, as in *hoenderhok* 'shed for chickens'. Furthermore, a Google search on the internet revealed that all forms in (243b-d) alternate with the expected form with the linking element *-er-*. We found about 10 instances of both *beenderenkuil* and *beenderkuil*, which seems to be part of the archeological jargon, and again about 10 instances of *eierenaanvoer* and *eieraanvoer*. Finally, we found that *kalverenmarkt* occurs relatively frequent but is still much rarer than *kalvermarkt*; we found about 80 instances of the former and 20,000 instances of the latter. For this reason, we think it is better to leave it open for the moment whether *-eren-* should be considered a linking element of the relevant kind.

(243) a. *kinderengejoel* 'jeering of children'
   b. *beenderenkuil* 'collective grave/pit that contains bones'
   c. *eierenaanvoer* 'supply of eggs'
   d. *kalverenmarkt* 'market where clubs are traded'

The examples in (244) unambiguously show that the linking element *-s* need not be related to the plural suffix *–s*: the primed examples show that the first members of these compounds do not take the suffix *–s* in the plural.

(244) a. *dorpsplein* 'village square'   a′. *dorpen* 'villages'
   b. *kalfsvlees* 'veal'   b′. *kalveren* 'clubs'
   c. *schaapskooi* 'sheepfold'   c′. *schapen* 'sheep'

The examples in (245), adapted from De Haas & Trommelen (1993), suggest that it is entirely unpredictable whether or not a linking element appears, and if it does what form it will take: we can appeal neither to the first member of the compound in order to tell whether a linking element will appear (examples a-c), nor to the second member of the compound. Nevertheless, there seem to be certain tendencies, but we refer the reader to De Haas & Trommelen (1993: §2.9.1) for a discussion of these.

(245)   • Variation in the use of linking elements
   a. *broekriem* 'belt'; *broekenwinkel* 'shop selling trousers'; *broekspijp* 'trouser leg'
   b. *schaapherder* 'shepherd'; *schapenvlees* 'mutton'; *schaapskooi* 'sheepfold'
   c. *zonwering* 'awning'; *zonnescherm* 'marquee'; *zonsverduistering* 'solar eclipse'
   d. *rundvlees* 'beef'; *kattenvlees* 'meat of/for cats'; *kalfsvlees* 'veal'
   e. -vorming: *beeldvorming* 'image'; *gedachtevorming* 'creation of ideas'; *groepsvorming* 'creation of a group'

Finally it can be noted that in some cases the linking element *–s* is optional and subject to individual variation: for example *objectpositie* 'object position' seems to freely alternate with *objectspositie*.

1.5. Bibliographical notes

The division of the noun phrase into a lexical domain (NP) and a functional domain (DP) with intermediate functional projections was first introduced in Abney (1987) and has since become widely accepted within generative grammar; see Alexiadou et al. (2007: Part II) for the historical background of the proposal and an overview of the empirical evidence that has been put forward in favor of this claim. Alexiadou et al. also contains an extensive discussion on nominal features.

Most traditional Dutch grammars include sections on noun classification. See, for instance, Den Hertog (1973: 53ff.), Rijpma & Schuringa (1978: 95ff.), Van den Toorn (1981: 149ff.), Luif (1986: 110-111), Van Bart et al. (1998: 10-13), Haeseryn et al. (1997: 140ff.), and Klooster (2001: 64-65). Rijkhoff (2002) provides a more typologically-based classification of nouns.

Exhaustive overviews of noun formation can be found in De Haas & Trommelen (1993), Haeseryn et al. (1997), and Booij (2002). A detailed and

comprehensive theoretical study on Dutch morphology is Van der Putten (1997). For a discussion of the restrictions on input verbs (in particular unaccusative verbs) of deverbal constructions of various kinds, see Knopper (1984). For discussions of ER-nominalizations, see Booij (1986a, 1986b), Hoekstra (1986), and De Caluwe (1992, 1995). Discussions of the behavior of INF- and ING-nominalizations can be found in Ten Cate (1977), Van Haaften et al. (1985), Dik (1985a), Hoekstra & Wehrmann (1985), Hoekstra (1986) and Van Haaften et al. (1985), while Van den Hoek (1972) and Mackenzie (1985a) deal exclusively with GE-nominalizations.

A more extensive discussion of the inheritance of arguments can be found in Chapter 2. Publications on this subject include Hoekstra (1984a, 1986), Dik (1985a, 1985b), Mackenzie (1985a, 1986), Booij (1986a, 1988, 1992b, 2002), and Booij & Van Haaften (1987). We have treated deverbal nouns and their complements in terms of inheritance, since this seems fairly generally accepted in various linguistic frameworks, but we must note that the inheritance approach is not uncontroversial. Van der Putten (1997: 159-160), for example, has pointed out that the process of ER-nominalization is not fully productive: not every verb can be input to the process and the denotation of the resulting noun is not entirely predictable. For this reason he argues in favor of a lexical approach, describing deverbal nouns like ER-nouns in terms of prototypes and marginal members on the basis of such lexical/semantic features as animacy of the entity denoted and its original thematic role. In generative grammar various other competitive proposals have been advocated. The best-known example is the debate between the lexicalist and the transformational approaches (Chomsky 1970), which focuses on the question of whether all nominalizations involve derivation (and, if not, which types do involve derivation and which types are simply included in the lexicon as alternative realizations of an abstract lexical item). Another example is the distinction between the categorial and the thematic view (Hoekstra 1986), which focuses on the question of exactly which material is inherited in the case of nominalization. For a more detailed discussion, the reader is referred to the review in Alexiadou et al. (2007: Part IV), which also treats a number of more recent contributions to the discussion.

Chapter 2
Projection of noun phrases I: complementation

Introduction

This chapter discusses complementation of the noun. Section 2.1 will start with a number of general observations, which will be summarized in (52) below by means of a set of generalizations. These generalizations will play a crucial role in the more extensive discussion of complementation in the remainder of this chapter. Section 2.2 will continue by discussing in more detail non-clausal complements, that is, PP- and NP-complements, including NP-complements that appear in determiner position as a genitive noun phrase or possessive pronoun. Section 2.3 concludes with a discussion of clausal complements. Obviously, any discussion based on a distinction between °complements and °modifiers will have to provide the means to distinguish between the two groups. Section 2.2.1 therefore describes a number of syntactic tests to distinguish between PP-complements and PP-modifiers within the noun phrase. Section 2.3.3 will discuss the difference between clausal complements and modifiers within the NP.

2.1. General observations

This section starts with the formulation of a number of observational generalizations with respect to complementation of nouns concerning optional or obligatory presence of the complement, word order, etc. These generalizations can be found scattered throughout the following sections, but for ease of reference the complete set of generalizations is also given as (52) in Section 2.1.7.

2.1.1. Complementation of nouns: complements and modifiers

Section 1.1.2 has shown that the noun phrase can be divided into two subdomains, the NP- and the DP-domain: the NP-domain is headed by the noun and determines the denotation of the noun phrase, whereas the DP-domain is headed by a determiner or a quantifier/numeral and determines the referential and/or quantificational properties of the noun phrase. Thus, the internal structure of the noun phrase as a whole can be represented as in (1), where Determiner (D) and Noun (N) are the heads of the °projections DP and NP, respectively, and where the dots indicate the possible positions of other elements. In this section, as well as in Chapter 3, we will concentrate on the projection of the noun, that is, the NP-domain.

(1) $[_{DP} ... D ... [_{NP} ... N ...]]$

Each NP contains an obligatory head N and, optionally, one or more other elements, which can be further categorized according to their function, i.e., according to whether they function as complements or as restrictive modifiers. COMPLEMENTs are elements whose presence is required by the semantics of the head noun; the idea is that these complements are obligatory arguments of the nominal head, comparable to the complements of verbs. Restrictive MODIFIERs, on the other hand, are not required by the semantics of the head.

   Complements are generally closer to the nominal head than the restrictive (as well as the non-restrictive) modifiers. Example (2a) illustrates this for the nominal complement *tomaten* 'tomatoes' and the adjectival modifier *gebruikelijk* 'usual' in

prenominal position, example (2b) for the PP-complement *van Jan* 'of Jan' and the PP-modifier *in het ziekenhuis* 'in hospital' in postnominal position, and example (2c) for the clausal complement *dat Jan ziek geworden was* and the restrictive relative clause *dat net binnenkwam* in postnominal position.

(2)   a.   Het gebruikelijke tomaten gooien   bleef   niet uit.
          the customary   tomatoes throwing remained not prt.
          'The customary throwing of tomatoes followed.'
    b.   de langdurige behandeling van Jan in het ziekenhuis
          the protracted treatment   of Jan   in the hospital
    c.   het bericht dat Jan ziek geworden was dat net binnenkwam
          the report that Jan ill   become   has that just arrived
          'the report that Jan has become ill that just arrived'

These word order facts lead to the generalization in (3), according to which complements and modifiers are inserted at different levels within NP: complements are immediate sisters of the head noun, whereas modifiers are °adjuncts inserted at some higher level in the NP. According to this assumption, the structures of the noun phrases in (2) are as indicated in (4).

(3)   **Generalization I**: Complements are closer to the nominal head of the NP than modifiers; the former are immediate sisters of the head noun, whereas the latter are adjoined at some higher lever within NP.

(4)   a.   het [$_{NP}$ gebruikelijke [tomaten gooien]]
    b.   de [$_{NP}$ langdurige [behandeling van Jan] in het ziekenhuis]
    c.   het [$_{NP}$ [bericht dat Jan ziek geworden was] dat net binnenkwam]

The difference between complements and restrictive modifiers is often hard to determine, as the two may be categorically identical. This is not so much the case in prenominal position, where the modifier typically takes the form of an AP and the complement takes the form of a noun phrase or a PP, as in (5a), but this problem does occur in postnominal position, where complements and modifiers both may take the form of a PP or a clause, as in (5b&c).

(5)   a.   [$_{NP}$ AP-modifier [NP/PP-complement N]]
    b.   [$_{NP}$ [N PP-complement] PP-modifier]
    c.   [$_{NP}$ [N Clausal complement] Clausal modifier]

Although the present section will be mainly concerned with complements, it is necessary to first address more extensively the difference between complements and modifiers: Section 2.2.1 will discuss the difference between prepositional complements and modifiers in (5b), and Section 2.3.3 the difference between clausal complements and modifiers in (5c). Modification within the NP will, however, be the main topic of Chapter 3.

2.1.2. Nouns as predicates

The notion of complementation is usually associated with the verbal domain. Verbs have argument structures, specifying the number and °thematic roles of their

°arguments. Arguments of verb must be divided into (i) INTERNAL ARGUMENTs or COMPLEMENTs and (ii) EXTERNAL ARGUMENTs. The former in a sense complete the predicate, as a result of which it can be predicated of the latter. In the lexical frames in (6), the external argument is underlined in order to distinguish it from the complements. The semantic arguments of the verb are normally realized as syntactic arguments: internal arguments generally surface as the objects of the verb, whereas the external argument normally corresponds to the subject.

(6)   • Predicate   • Example
    a.   LOPEN$_V$ (<u>Agent</u>):   a′. [Jan]$_{Agent}$ [loopt]$_{Pred}$
          walk   Jan   walks
    b.   LEZEN$_V$ (<u>Agent</u>, Theme):   b'. [Marie]$_{Agent}$ [koopt een krant]$_{Pred}$
          read   Marie   buys a newspaper
    c.   GEVEN$_V$ (<u>Agent</u>, Theme, Recipient) c′. [Jan]$_{Agent}$ [geeft Marie een boek]$_{Pred}$
          give   Jan   gives Marie a book

Nouns may function as predicates as well, and are therefore also able to take arguments. This is shown in (7), where the nominal noun phrase *genie* 'genius' is predicated of the noun phrase *Jan*, which therefore functions as the external argument. Since the usual labels for semantic roles are especially created for expressing the roles of the arguments in the EVENT structure denoted by verbal predications, we will simply refer to the external argument of nouns as the REFERENT (Ref), that is, the entity to which the property denoted by the nominal (or adjectival) predicate applies.

(7)   • GENIE$_N$ (<u>Ref</u>)
    a.   [Jan]$_{Ref}$ is [een genie]$_{Pred}$.
          Jan   is a genius
    b.   Ik   vind   [Jan]$_{Ref}$ [een genie]$_{Pred}$.
          I   consider   Jan   a genius

The syntactic mapping of the external arguments of nouns is more complicated than that of verbs. When the noun is used as the head of a nominal predicate in a copular or *vinden*-construction, the mapping is rather straightforward: in (7), for example, the external argument corresponds to the noun phrase *Jan*, which functions respectively as the subject and the object of the clause. However, when the noun is used as the head of a noun phrase in argument position, it typically tends to be syntactically avalent: rather than behaving like a predicate with one or more arguments, the noun phrase it is part of acts as an argument of some other predicate. Correspondingly, such noun phrases do not denote a property, but typically have a referential function: they identify the entity or set of entities about which something is predicated. In (8), for instance, the noun phrase *de man* has the same function as *Jan* in (7), that is, it acts as the external argument of the nominal predicate.

(8)   a.   [De man]$_{Ref}$ is [een genie]$_{Pred}$.
             the man   is a genius
       b.   Ik   vind   [de man]$_{Ref}$ [een genie]$_{Pred}$.
             I   consider   the man   a genius

This does not mean, however, that nouns heading a noun phrase in argument position do not have a predicative function: such nouns can be said to predicate something of their referential argument, that is, of the entity or set of entities referred to by means of the noun phrase. The noun phrase *een man* in (9a), for example, can be paraphrased as ∃x man (x): there is an entity x such that the predicate MAN applies to x. Correspondingly, (9a) is normally assigned the semantic interpretation in (9b), which involves the conjunction of two predicates: there is an entity x such that the predicates MAN and WALKING IN THE STREET both apply to x.

(9)   a.   Er   loopt   een man op straat.
           there walks   a man   in the.street
      b.   ∃x (man (x) & walks on the street (x))

The discussion above, which is based on Williams (1981), shows that nouns always have an external argument, but that this argument is not syntactically expressed when the noun is the head of a noun phrase functioning as the syntactic argument of some other predicate, as in (9). The external argument of the noun can (and must) be syntactically realized only when the noun is heading a noun phrase that *syntactically* functions as a predicate, as in (7). This is given as generalization II in (10).

(10)   **Generalization II**: The external argument (Ref) of a noun cannot be
       syntactically realized unless the noun syntactically functions as a predicate
       in, for instance, a copular or a *vinden*-construction.

2.1.3. Complementation of non-derived nouns

Complementation is not a typical property of non-derived nouns. There are, however, at least two classes of basic nouns that normally require the presence of an argument. The first is the class of relational nouns, which includes kinship nouns like *vader* 'father', *broer* 'brother', *nicht* 'niece', and nouns denoting physical properties of objects like *vorm* 'shape', *gewicht* 'weight' or *kleur* 'color'; see Section 1.2.3 for more examples. These relational nouns can successfully fulfill their referential function only when related to some other entity. This is illustrated in (11a) for the noun *vader*: this example is only acceptable when a noun phrase is present carrying the "child" role assigned by the noun *vader*. Another example is given in (11b): the noun *vorm* 'shape' cannot refer independently but requires the syntactic realization of the noun phrase referring to a physical object that has some shape. Note that in accordance with generalization II in (10), the "Ref" role only needs to be expressed syntactically when the noun phrase headed by *vader* functions syntactically as a predicate. Complementation of the relational nouns will be discussed more extensively in Section 2.2.2.

(11)   • VADER$_N$ (<u>Ref</u>, child)
      a.   [Jan]$_{Ref}$ is [de vader $^{*?}$(van Marie)]$_{Pred}$
           Jan   is the father   of Marie
      a′. Ik ontmoette gisteren   de vader $^{*?}$(van Marie).
           I   met   yesterday   the father   of Marie
      b.   Jan bewonderde de vorm $^{*?}$(van de ijsberg).
           Jan admired   the shape   of the iceberg

Other non-derived nouns that may take complements are the so-called picture and story nouns. Some examples are given in (12): in (12a), the noun *schets* 'sketch' assigns a theme role to *de Amstel* (it is the object depicted) and an agent role to *Rembrandt* (he is the maker of the painting); in (12b) something similar holds for the story noun *gedicht*. Complementation of the picture/story nouns will be discussed more extensively in Section 2.2.5.

(12) a.   SCHETS$_N$ (<u>Ref</u>, Agent, Theme)
      a′.   Rembrandts schets van de Amstel
            Rembrandt's sketch of the Amstel
      b.   GEDICHT$_N$ (<u>Ref</u>, Agent, Theme)
      b′.   Boons   gedicht over de kleine Eva
            Boon's poem   about the little Eva

2.1.4. *Derived nouns: inheritance of argument structure*

Whereas non-derived nouns typically do not take complements, derived nouns do. The arguments of these derived nouns are typically "inherited" from the input stem. Take as an example the transitive verb *behandelen* 'to treat' and the noun *behandeling* 'treatment', which is derived from the former by adding the suffix *-ing*. As is illustrated in (13), the verb and the noun can take the same arguments: an agent and a theme. The main difference between the verbal and the nominal predicate is that, whereas the agent is the external argument of the verb, it is an internal argument of the noun: the external argument of the noun is assigned the "Ref" role. In accordance with Generalization II in (10), the argument bearing the agent role can be expressed within the noun phrase (whereas the "Ref" role need not be syntactically expressed).

(13)   • Transitive
      a.   BEHANDELEN$_V$ (<u>Agent</u>, Theme)   a′. Jan behandelde de patiënt.
            to treat   Jan treated   the patient
      b.   BEHANDELING$_N$ (<u>Ref</u>, Agent, Theme) b′. Jans behandeling van de patiënt
            treatment   Jan's treatment   of the patient

The same applies to nouns derived from intransitive verbs, as shown by example (14). Here, too, the agent argument of the verb is inherited by the noun as an internal argument, with the addition of a new external argument that is assigned the "Ref" role. Again, the argument bearing the agent role can be expressed within the noun phrase.

(14)   • Intransitive
      a.   HUILEN$_V$ (<u>Agent</u>)   a′. De kinderen huilen.
            to cry   the children cry
      b.   HUILEN$_N$ (<u>Ref</u>, Agent)   b′. het huilen van de kinderen
            crying   the crying of the children

In the nominalizations in (13) and (14), the external argument of the verb is transformed into an internal argument of the derived noun. In the case of deverbal person nouns derived by the suffix *-er*, however, the external argument of the verb

is similar to the external argument of the noun: the argument assigned the "Ref" role of the derived noun *schrijver* 'writer' in (15b) corresponds to the argument that is assigned the agent role by the predicate *een boek schrijven* in (15a). In accordance with this, the argument that corresponds to the argument assigned the agent role by the verb cannot be expressed within the noun phrase; it can only be realized as the subject or the object of a clause in which the noun phrase is used as a syntactic predicate.

(15)   • Deverbal *-er* nouns:
    a.   SCHRIJVEN$_V$ (<u>Agent</u>, Theme)   a′. Jan schrijft een boek.
          to write   Jan writes   a book
                                            'Jan is writing a book.'
    b.   SCHRIJVER$_N$ (<u>Ref</u>, Theme)   b′. de schrijver van het boek
          writer   the writer of the book

Inheritance of argument structures can also found with deadjectival nouns In example (16), for instance, the external argument of *hoog*, which we call "Ref$_A$" in order to distinguish it from the "Ref$_N$" role of the noun, functions as an internal argument of the noun *hoogte* 'height'.

(16) a.   HOOG$_A$ (<u>Ref$_A$</u>)   a′. De toren   is hoog.
          high   the tower   is high
    b.   HOOGTE$_N$ (<u>Ref$_N$</u>, Ref$_A$)   b′. de hoogte van de toren
          height   the height of the tower

Since adpositions cannot readily be used as the input of a nominalization process, we will not discuss these here; see 1.3.4 for examples.

This section has shown that nominalization generally involves the internalization of the external argument of the input form; only when we are dealing with a deverbal noun derived by *-er* does the external argument of the verb seem to correspond to the external argument of the derived noun. This is expressed as generalization III in (17).

(17)   **Generalization III**: Nominalization implies the internalization of the
               external argument of the input form, unless we are dealing with a deverbal
               ER-noun.

2.1.5. *The form of the arguments*

This section discusses the various ways in which the internal arguments of a noun can be realized. Within the verbal domain, agentive arguments appear as nominative noun phrases in active clauses, and, optionally, as agentive *door*-PPs in passive clauses. Arguments with the semantic function of theme normally appear as accusative noun phrases in active clauses and as nominative noun phrases in passive clauses. Arguments with the semantic function of goal/benefactive can be realized as a dative noun phrase or as an *aan*/*voor*-PP. The remaining arguments are realized as PPs. However, given that a noun normally does not assign case, we expect that its internal arguments are typically realized as PPs. As will be shown below, this is indeed possible, but it is certainly not the case that this exhausts the possibilities.

I. Realization of the internal argument as a PP or genitive noun phrase

The discussion below will show that there are often two ways to realize the agentive and theme arguments of the noun: they can be expressed by means of either a postnominal PP or a prenominal genitive noun phrase or possessive pronoun. Arguments carrying other thematic roles are always realized by means of a PP.

A. Realization of the internal argument as a van-*PP*

A theme argument of a deverbal noun that corresponds to a direct object of the input verb can be realized by means of a *van*-PP, as shown by (18a), and the same thing holds for the theme argument of a picture noun like *schilderij* 'painting' in (18b). The theme argument of a story noun like *gedicht* 'poem' in (18c), however, is preceded by the preposition *over* 'about'.

(18) • Theme arguments of deverbal nouns and picture/story nouns
    a.   de behandeling van Jan$_{\text{Theme}}$
        the treatment   of Jan
    b.   het schilderij van de Amstel$_{\text{Theme}}$
        the painting   of the Amstel
    c.   het gedicht over/$^{??}$van de kleine Eva$_{\text{Theme}}$
        the poem   about   the little Eva

The agentive argument of a deverbal noun can also be realized as a postnominal *van*-PP, as is shown by (19a&b). It must be noted, however, that this leads to a marked result when the input verb is transitive, in which case the argument is preferably realized as an agentive *door*-PP, as is shown by the (c)-examples in (19).

(19) • Agentive arguments of deverbal nouns
    a.   het gehuil van Jan$_{\text{Agent}}$
        the crying of Jan
    b.   het zoeken van Jan$_{\text{Agent}}$ naar de waarheid$_{\text{Theme}}$
        the looking of Jan   for the truth
    c. $^{??}$de behandeling van de dokter$_{\text{Agent}}$ van Jan$_{\text{Theme}}$
        the treatment   of the doctor   of Jan
    c′. de behandeling van Jan$_{\text{Theme}}$ door de dokter$_{\text{Agent}}$
        the treatment   of Jan   by the doctor

The examples in (20) show that the agentive argument of a picture/story noun can also be realized as a *van*-PP, and those in (21) show that the same thing holds for the internal arguments of relational nouns.

(20) • Agentive arguments of picture/story nouns
    a.   het schilderij van Rembrandt$_{\text{Agent}}$
        the painting   of Rembrandt
        'the painting by Rembrandt'
    b.   het gedicht van Louis-Paul Boon$_{\text{Agent}}$
        the poem   of Louis-Paul Boon
        'the poem by Louis-Paul Boon'

(21)   • Related arguments of relational nouns
   a.   de vader   van Marie
         the father   of Marie
   b.   de vorm   van de ijsberg
         the shape of the iceberg

B. Realization of the internal argument as a possessive pronoun/genitive noun phrase

Internal arguments of a noun that can be realized as *van*-PPs can often also be realized as prenominal possessive pronouns or genitive noun phrases (with the genitive suffix *-s*). The examples in (19) and (20), for instance, alternate with the primeless examples in (22) and (23), in which the agent is realized in prenominal position as a genitive noun phrase. Since noun phrases like *de dokter* 'the doctor' in (22b) normally give rise to a marked result when they are used as genitive possessor (see the discussion below (25)), we also give examples with a prenominal possessive pronoun.

(22)   • Agentive arguments of deverbal nouns
   a.   Jans$_{Agent}$ gehuil   a′. zijn$_{Agent}$ gehuil
         Jan's   crying   his   crying
   b. $^?$de dokters$_{Agent}$ behandeling van Jan   b′. zijn$_{Agent}$ behandeling van Jan
         the doctor's   treatment of Jan   his   treatment of Jan
   c.   Jans$_{Agent}$ zoeken naar de waarheid   c′. zijn$_{Agent}$ zoeken naar de waarheid
         Jan's   looking for the truth   his   looking for the truth

(23)   • Agentive arguments of picture/story nouns
   a.   Rembrandts$_{Agent}$ schilderij   a′. zijn$_{Agent}$ schilderij
         Rembrandt's   painting   his   painting
   b.   Louis-Paul Boons$_{Agent}$ gedicht   b′. zijn$_{Agent}$ gedicht
         Louis-Paul Boon's   poem   his   poem

Example (24) shows that a theme argument can also be realized as a prenominal genitive noun phrase or possessive pronoun. This prenominal realization is, however, restricted to theme arguments that can be realized as *van*-PPs; since the theme argument of a story noun is normally expressed by an *over*-PP, (25b) is unacceptable under the intended non-agentive reading.

(24) a.   Jans/zijn$_{Theme}$ behandeling
          Jan's/his   treatment
      b.   Jans/zijn$_{Theme}$ foto
          Jan's/his   photo

(25) a.   het gedicht over de kleine Eva$_{Theme}$
          the poem   about the little Eva
      b.   *de kleine Eva's/haar$_{Theme}$ gedicht
          the little Eva's/her   poem

There are additional restrictions on the realization of the agent/theme argument as a genitive noun phrase or a possessive pronoun. In fact, the prenominal position in (24) is only accessible to (i) possessive pronouns and (ii) a limited set of

[+HUMAN] nouns including proper nouns and a number of kinship and professional nouns; see Sections 5.2.2.1 and 5.2.2.5.1 for more details. This is shown by the fact that whereas the primeless (a)-examples in (26) and (27) alternate with the primed ones, the primeless (b)-examples do not.

(26) a. de foto van Jan $_{Theme}$ a′. Jans$_{Theme}$ foto
          the photo of Jan   Jan's   picture
      b. de foto van de Amstel$_{Theme}$ b′. *de Amstels$_{Theme}$ foto
          the photo of the Amstel   the Amstel's   photo

(27) a. de vader van Marie   a′. Maries   vader
          the father of Marie   Marie's father
      b. de vorm van de berg   b′.*de berg's   vorm
          the shape of the mountain   the mountain's shape

The fact that, in principle, the agentive and the theme argument of a noun can both be expressed by means of a postnominal *van*-PP or as a prenominal genitive noun phrase or possessive pronoun provides evidence in favor of generalization III in (17) that the two must be considered on a par as internal arguments of the noun.

C. Realization of the internal argument as a door-*PP*

The option of using a *door*-PP is restricted to agentive arguments of deverbal nouns, as is illustrated for deverbal nouns based on an intransitive and transitive verb, in (28a) and (28b) respectively.

(28)   • Agentive arguments of deverbal nouns
      a. $^{(?)}$het gehuil door de kinderen
          the crying by the children
      b. de behandeling van Jan$_{Theme}$ door de arts$_{Agent}$
          the treatment   of Jan   by the doctor

As previously noted in connection with the (c)-examples in (19), using a *door*-PP is strongly preferred to using a *van*-PP when the noun is derived from a transitive verb; when the noun is derived from an intransitive verb, the preference goes in the other direction. Using a *door*-PP for the agentive argument of a picture/story noun leads to a marginal result at best. This is shown by (28c&d).

(29)   • Agentive arguments of picture/story nouns
      a. $^{*?}$het schilderij   door Rembrandt$_{Agent}$
          the painting   by Rembrandt
      b. $^{*?}$het gedicht door Louis-Paul Boon$_{Agent}$
          the painting by Louis-Paul Boon

D. Realization of the internal argument as an aan/voor-*PP*

The realization of an internal argument as an *aan* or a *voor*-PP is restricted to, respectively, recipients and benefactives (unless the noun is derived from a verb that selects a PP headed by *aan/voor*; see the discussion below). Here we will give only two typical examples.

(30) a. Jan stuurt <de koningin> een verzoekschrift <aan de koningin>.
Jan sends the queen a petition to the queen
 a′. het sturen van verzoekschriften aan de koningin
the sending of petitions to the queen
 b. Jan schenkt <zijn moeder> een stevige borrel <voor zijn moeder> in.
Jan pours his mother a stiff drink for his mother prt.
 b′. het inschenken van een stevige borrel voor zijn moeder
the prt.-pouring of a stiff drink for his mother

E. Realization of the internal argument by another PP

Where the input verb selects a PP-theme or any other type of PP-complement, the form of the argument does not change after nominalization has taken place. Some examples are given in the table in example (31): the PPs selected by the verbs *jagen* 'to hunt' and *reizen* 'to travel' are inherited by the nominalizations and appear in the same form; this holds for all types of nominalizations.

(31) Nominalizations of verbs taking a PP-complement

VERB	*Jan jaagt op groot wild.* Jan hunts on big game 'Jan hunts big game.'	*Jan reist dagelijks naar Amsterdam.* Jan travels daily to Amsterdam
ER- NOMINALIZATION	*de jagers op groot wild* the hunters on big game	*reizigers naar Amsterdam* travelers to Amsterdam
BARE/DET-INF NOMINALIZATION	*(het) jagen op groot wild* the hunting on big game	*(het) dagelijks reizen naar Amsterdam* the daily traveling to Amsterdam
ING- NOMINALIZATION	*de jacht op groot wild* the hunt on big game	*de reis naar Amsterdam* the trip to Amsterdam
GE- NOMINALIZATION	*dat gejaag op groot wild* that hunting on big game	*het dagelijks gereis naar Amsterdam* the daily traveling to Amsterdam

In the examples in (32), the nominal forms select their own prepositions (other than *van* which normally occurs with agents and themes), which are not inherited from the verbal stem.

(32)   • Verbal   • Nominal
 a. $^?$Peter behoeft rust.   a′. Peters behoefte aan rust
  Peter needs rest   Peter's need for rest
 b. Zij begeert macht.   b′. haar begeerte naar macht
  she craves power   her craving for power
 c. Hij haat zijn rivaal.   c′. zijn haat jegens zijn rivaal
  he hates his rival   his hatred of his rival
 d. Jan bezocht zijn grootvader.   d′. Jans bezoek aan zijn vader
  Jan visited his grandfather   Jan's visit to his father
 e. Peter vertrouwt mij.   e′. Peters vertrouwen in mij
  Peter trusts me   Peter's trust in me

The exceptions in (32) seem confined to ING-nominalizations only; in all other cases (insofar as available) the theme argument appears in its usual form as *van*-PP. This is illustrated in example (33).

(33) a. een bezoeker van voetbalwedstrijden   [ER-nominalization]
           a visitor   of soccer.matches
      b. (het) bezoeken van voetbalwedstrijden   [INF-nominalization]
           the visiting   of soccer.matches
      c. ^{??}dat gehaat van vreemdelingen door autochtonen   [GE-nominalization]
           that hating of strangers   by native.people

Although the nouns in (32) are clearly semantically related to the verbs, the fact that they select their own preposition raises the question of whether or not these nouns are derived from the related verbs, and, if so, whether they can be said to have inherited their argument structure from these verbs. We will make no attempt at answering these questions, but do want to point out that all these nouns can also be used in periphrastic constructions that are virtually synonymous with the primeless examples in (32).

(34) a. Peter heeft behoefte aan rust.
           Peter has   need   to rest
           'Peter needs rest.'
      b. [?]Zij   voelt een begeerte naar macht.
           she   feels a craving   for power
           'She craves power.'
      c. Hij voelt/koestert   haat   jegens zijn rivaal.
           he   feels/nourishes hatred against his rival
           'He hates his rival.'
      d. Jan bracht   een bezoek aan zijn vader in het ziekenhuis.
           Jan brought a visit   to his father   in the hospital
           'Jan visited his father in hospital.'
      e. Peter heeft/stelt vertrouwen in mij.
           Peter has/puts   trust   in me
           'Peter trusts me.'

F. Summary

Table 1 summarizes the findings from the discussion in A to C. The first row shows that agent and theme arguments of deverbal and picture/story nouns, as well as internal arguments of relational nouns, can be realized as *van*-PPs; the theme arguments of story nouns are exceptional in that they must be realized as *over*-PPs. The second row shows that theme arguments of story nouns are also the only arguments that cannot be realized as genitive noun phrases or possessive pronouns: all other arguments can, provided that they satisfy the additional constraints that are involved in this option, such as the constraint that a genitive noun phrase must refer to a [+HUMAN] entity. The final row shows that only the agent argument of a deverbal noun can be realized as a *door*-PP.

Table 1: Form of the internal arguments of deverbal, picture/story and relational nouns

	DEVERBAL		PICTURE/STORY		RELATIONAL
	AGENT	THEME	AGENT	THEME	
van-PP	+	+	+	+/—	+
genitive NP/possessive pronoun	+	+	+	+/—	+
door-PP	+	—	—	—	—

The fact that agent and theme arguments can both be realized as either *van*-PPs or genitive noun phrases may lead to ambiguity. With postnominal PPs, this ambiguity is reduced by the tendency to realize the agent argument of a noun derived from a transitive verb as a *door*-phrase (cf. (19c&c′)), and the fact that the theme of a story noun must be realized by means of an *over*-PP (cf. (18)). However, when the arguments are realized as genitive noun phrases or possessive pronouns, this can lead to real ambiguity, as is shown in (35a), where the noun phrase *Jans/zijn* can be interpreted either as agent or as theme, regardless of their form. In cases like (35b&b′), however, the presence of other arguments in the construction forces one particular reading.

(35) a. Jans/zijn$_{Agent/Theme}$ behandeling
Jan's/his   treatment
'the treatment of/by Jan'

   b. Jans/zijn$_{Theme}$ behandeling door de arts$_{Agent}$
Jan's/his   treatment   by the doctor

   b′. Jans/zijn$_{Agent}$ behandeling van de patiënt$_{Theme}$
Jan's/his   treatment   of the doctor

II. Realization of the internal argument as an (indefinite) noun phrase

This subsection discusses the option of realizing the internal arguments of the noun as a prenominal noun phrase, which is restricted to nominal infinitive (henceforth: INF-nominalizations).

A. Theme

The option of realizing the theme argument of the noun as a prenominal noun phrase is virtually the only possibility in the case of a BARE-INF nominalization (INF-nominalization without a determiner); in the DET-INF nominalization, that is, an INF-nominalization preceded by, e.g., the article *het*, the argument is preferably expressed in a *van*-PP, although realizing the theme as a prenominal noun phrase remains an option. This is illustrated in (36a&b) for the theme argument of the infinitival nominal *eten* 'eating'.

(36) a. Aardappels$_{Theme}$ eten is gezond.
potatoes   eat   is healthy
'Eating potatoes is healthy.'

   a′. *?Eten   van aardappels$_{Theme}$ is gezond.
eating of potatoes   is healthy

b. ?Het aardappels_{Theme} eten   is niet zo populair   meer.
    the potatoes   eating is not   that popular anymore
b′. Het eten   van aardappels is niet zo populair   meer.
    the eating of potatoes   is not   that popular anymore

Since noun phrases must be assigned case, the examples in (36) indicate that INF-nominalizations retain the ability of assigning accusative case. When the input verb does not assign this case (like the °unaccusative verbs *vallen* 'to fall' and *overlijden* 'to die'), we therefore expect that the infinitival nominal cannot assign case either, and the argument cannot be realized as a prenominal noun phrase. The examples in (37) show that this expectation is indeed borne out.

(37) a. *Bladeren_{Theme} vallen betekent het begin van de herfst.
          leaves   fall   means   the beginning of the autumn
      b. *Een kind_{Theme} overlijden is altijd   een tragische gebeurtenis.
          a child   die   is always a tragic event

This means that a theme argument inherited from an unaccusative verb must be realized as a *van*-PP or, in case the argument refers to a human entity, a genitive noun phrase or possessive pronoun. Note that using a BARE-INF nominalization leads to a marginal result in this case.

(38) a. Het/*?∅ vallen van de bladeren_{Theme} betekent het begin van de herfst.
          the/∅   fall   of the leaves   means   the beginning of the autumn
          'The falling of the leaves means the beginning of autumn.'
      b. Het/*?∅ overlijden van een kind_{Theme} is altijd   een tragische gebeurtenis.
          the/∅   die   of a child   is always a tragic event
      b′. Jans/zijn_{Theme} plotselinge overlijden schokte iedereen.
          Jan's/his   sudden   die   shocked everyone
          'Jan's/his sudden death shocked everyone.'

B. Recipients

Recipients that can be realized as a dative noun phrase in the clause can also be realized as a dative noun phrase in an INF-nominalization. This is illustrated in (39a) for a BARE-INF nominalization. Example (39b) shows that the recipient *werknemers* can also be realized as an *aan*-PP, which is of course related to the fact that it can be realized in the same way in clauses. Example (39c) illustrates again that theme arguments of BARE-INF nominalization cannot be readily realized as *van*-PPs.

(39)   • BARE-INF nominalization
      a. Werknemers_{Rec} een bonus_{Theme} geven kan stimulerend werken.
          employees   a bonus   give   can stimulating   work
          'Giving employees a bonus may have a stimulating effect.'
      b. Een bonus_{Theme} geven aan werknemers_{Rec} kan stimulerend werken.
          a bonus   give   to employees   can stimulating work
          'Giving a bonus to employees may have a stimulating effect.'
      c. *?Geven   van een bonus_{Theme} aan werknemers_{Rec} kan stimulerend werken.
          give   of a bonus   to employees   can stimulating work

The examples in (40) show that, like theme arguments, recipients are preferably realized as PPs in DET-INF nominalization.

(40) • DET-INF nominalization
    a. $^?$Het werknemers$_{Rec}$ bonussen$_{Theme}$ geven is hier niet gebruikelijk.
       the employees   bonuses   give   is here not common
       'The giving of bonuses to employers is not common practice here.'
    b. $^?$Het bonussen$_{Theme}$ geven aan werknemers$_{Rec}$ is hier niet gebruikelijk.
       the bonuses   give   to employers   is here not common
    c. Het geven van bonussen$_{Theme}$ aan werknemers$_{Rec}$ is hier niet gebruikelijk.
       the give   of bonuses   to employers   is here not common

Finally, note that it is absolutely impossible to realize the recipient as a prenominal PP or noun phrase when the theme argument is realized as a postnominal *van*-PP; this suggests that the verbal property of having the recipient argument to the left of the head is incompatible with the nominal property of realizing the theme as a postnominal *van*-PP.

(41) *Het (aan) werknemers$_{Rec}$ geven van bonussen$_{Theme}$ is hier niet gebruikelijk.
      the to   employees   give   of bonuses   is here not common

The discussion in this section can be summarized by means of the two generalizations in (42).

(42) a. **Generalization IV:** An internal argument of a noun must be realized as a PP, unless it is a theme or a recipient selected by an INF-nominalization: in BARE-INF nominalizations, the theme and recipient are preferably realized as noun phrases; in DET-INF nominalizations this is at least marginally possible.
    b. **Generalization V:** When the noun has a prenominal recipient argument, the theme must be realized as a prenominal noun phrase.

2.1.6. The position of the arguments

This section discusses word order restrictions on the internal arguments of nouns. We will start with the relative order of the head noun and its arguments. This is followed by a first review of the relative order of the internal arguments themselves.

I. The order of the head noun and its internal arguments

Verbs and nouns differ with regard to the position of the arguments in relation to the head. Within the verbal domain nominal complements normally appear in front of the verbal head in clause-final position, whereas in the nominal domain arguments normally follow the nominal head. The relative placement of the arguments and the verb is illustrated by the primeless examples of (43): both the agent and the theme precede the verb.

(43) a. dat Marie$_{Agent}$ het boek$_{Theme}$ geschreven heeft.
      that Marie   the book   written   has
      'that Marie has written the book.'

    b.   dat   de arts$_{Agent}$ de patiënt$_{Theme}$ behandelde.
         that the doctor the patient   treated
         'that the doctor treated the patient.'

The relative placement of the arguments and the noun is illustrated in (44): in (44a) the theme-PP *van het boek* 'of the book' must follow the ER-nominalization *schrijfster* 'writer', and in (44b) the same thing holds for the agentive PP *door de arts* 'by the doctor' and the theme-PP *van de patiënt* 'of the patient' selected by the ING-nominalization *behandeling* 'treatment'.

(44) a.   de schrijfster van het boek$_{Theme}$ [ER-nominalization]
         the writer   of the book
     b.   de behandeling van de patiënt$_{Theme}$ door de arts$_{Agent}$ [ING-nominalization]
         the treatment   of the patient   by the doctor

When the theme has the form of a PP, as *om een snoepje* 'for a sweet' in (45a), it can generally either precede or follow the verb in clause-final position; it must, however, follow the deverbal noun in (45b).

(45) a.   dat Peter$_{Agent}$ <om een snoepje$_{Theme}$> zeurde <om een snoepje$_{Theme}$>.
         that Peter   for a sweet   whined
         'that Peter was whining for a sweet.'
     b.   het gezeur   van Peter$_{Agent}$ om een snoepje$_{Theme}$ [GE-nominalization]
         the whining of Peter   for a sweet

    We may conclude from (44) and (45) that the complements within NP must follow the head noun (unless, of course, they are realized as a genitive noun phrase or a possessive pronoun; cf. 2.1.5, point I). However, INF-nominalizations form an exception to the typical ordering of elements within NPs: (39) has already shown that in BARE-INF nominalizations the theme is preferably expressed by means of a noun phrase in prenominal position, and (40) has shown that this is at least marginally possible when we are dealing with DET-INF nominalizations. The examples in (39) and (40) have further shown that, just like in clauses, the thematic role of recipient can be optionally realized as a noun phrase in prenominal position. Example (46), finally, shows that arguments corresponding to PP-complements of the verb can be realized either in pre- or in postnominal position.

(46) a.   (het) <om snoepjes$_{Theme}$> zeuren <om snoepjes$_{Theme}$>
         the   for sweets   whine
         'whining for sweets'
     b.   (het) <op groot wild$_{Theme}$> jagen <op groot wild$_{Theme}$>
         the   on big game   hunt
         'hunting big game'

The examples in (39)-(40) and (46) therefore show not only that INF-nominalizations retain the verbal property of being able to assign case, but also that the word order restrictions on the internal arguments of the noun are more or less the same as those on the arguments of the verb. This is expressed by means of the generalization in (47).

(47)   **Generalization VI**: The internal argument of a noun normally occurs in postnominal position, unless the noun is an INF-nominalization: in BARE-INF nominalizations, nominal arguments must, and prepositional arguments may, precede the noun; in DET-INF nominalizations, prenominal arguments are at least marginally possible.

II. The order of the recipient and theme arguments of the noun

The (a)-examples in (48) show that in clauses the recipient normally precedes the theme when they are both realized as noun phrases. The (b)- and (c)-examples show that the same thing holds for the nominal recipient and theme arguments of INF-nominalizations.

(48) a.   Zij   hebben   hun werknemers$_{Rec}$ een bonus$_{Theme}$ gegeven.
            they have   their employees   a bonus   given
            'They gave their employees a bonus.'
      a′. *Zij hebben een bonus$_{Theme}$ hun werknemers$_{Rec}$ gegeven.
      b.   Werknemers$_{Rec}$ een bonus$_{Theme}$ geven kan stimulerend werken.
            employees   a bonus   give   can stimulating work
            'Giving employees a bonus may have a stimulating effect.'
      b′. *Een bonus$_{Theme}$ werknemers$_{Rec}$ geven kan stimulerend werken.
      c. $^?$Het werknemers$_{Rec}$ bonussen$_{Theme}$ geven kan stimulerend werken.
            employees   bonuses   give   can stimulating work
            'Giving employees a bonus may have a stimulating effect.'
      c′. *bonussen$_{Theme}$ werknemers$_{Rec}$ geven kan stimulerend werken

The (a)-examples in (49) show that when the recipient is realized as a PP, it can either follow or precede the NP-theme. The order PP$_{Rec}$ - NP$_{Theme}$ is generally regarded as a marked order, which only arises when certain pragmatic conditions concerning the information structure of the clause are met. The remaining examples in (49) show that the same word order alternation can be found with the NP-theme and PP-recipient of INF-nominalizations.

(49) a.   Zij   hebben   een bonus$_{Theme}$ aan hun werknemers$_{Rec}$ gegeven.
            they have   a bonus   to their employees   given
            'They gave a bonus to their employees.'
      a′. Zij hebben aan hun werknemers$_{Rec}$ een bonus$_{Theme}$ gegeven.
      b.   Een bonus$_{Theme}$ aan werknemers$_{Rec}$ geven kan stimulerend werken.
            a bonus   to employees   give   can stimulating work
            'Giving a bonus to employees may have a stimulating effect.'
      b′. Aan werknemers$_{Rec}$ een bonus$_{Theme}$ geven kan stimulerend werken.
      c. $^?$Het bonussen$_{Theme}$ aan werknemers$_{Rec}$ geven is hier niet gebruikelijk.
            the of bonuses   to employees   give   is here not common
            'The giving of bonuses to employees is not common here.'
      c′. $^{??}$Het aan werknemers$_{Rec}$ bonussen$_{Theme}$ geven is hier niet gebruikelijk.

The DET-INF nominalizations in (50) show that in postnominal position the PP-theme must precede the PP-recipient.

(50) a.   Het geven van bonussen$_{\text{Theme}}$ aan werknemers$_{\text{Rec}}$ is hier niet gebruikelijk.
           the give of bonuses   to employees   is here not common
           'The giving of bonuses to emploees is not common here.'
    b.   *?Het geven aan werknemers$_{\text{Rec}}$ van bonussen$_{\text{Theme}}$ is hier niet gebruikelijk.

This discussion in this subsection can be summarized by means of the generalization in (51).

(51)   **Generalization VII**: In INF-nominalizations, the order of the prenominal arguments of the noun is the same as the order of the recipient and the theme argument of a verb: NP$_{\text{Rec}}$ precedes NP$_{\text{Theme}}$, whereas PP$_{\text{Rec}}$ may precede or follow NP$_{\text{Theme}}$; a postnominal PP$_{\text{Theme}}$ must precede PP$_{\text{Rec}}$.

2.1.7. Summary of the observational generalizations

The seven generalizations formulated in the previous sections are repeated in (52).

(52)   a.   **Generalization I**: Complements are closer to the nominal head of the NP than modifiers; the former are immediate sisters of the head noun, whereas the latter are adjoined at some higher lever within NP.
      b.   **Generalization II**: The external argument (Ref) of a noun cannot be syntactically realized unless the noun syntactically functions as a predicate in, for instance, a copular or a *vinden*-construction.
      c.   **Generalization III**: Nominalization implies the internalization of the external argument of the input form, unless we are dealing with a deverbal ER-noun.
      d.   **Generalization IV:** An internal argument of a noun must be realized as a PP, unless it is a theme or a recipient selected by an INF-nominalization: in BARE-INF nominalizations, the theme and recipient are preferably realized as noun phrases; in DET-INF nominalizations this is at least marginally possible.
      e.   **Generalization V:** When the noun has a prenominal recipient argument, the theme must be realized as a prenominal noun phrase.
      f.   **Generalization VI**: The internal argument of a noun normally occurs in postnominal position, unless the noun is an INF-nominalization: in BARE-INF nominalizations, the nominal arguments must, and prepositional arguments may, precede the noun; in DET-INF nominalizations, prenominal arguments are at least marginally possible.
      g.   **Generalization VII**: In INF-nominalizations, the order of the prenominal arguments of the noun is the same as the order of the recipient and the theme argument of a verb: NP$_{\text{Rec}}$ precedes NP$_{\text{Theme}}$, whereas PP$_{\text{Rec}}$ may precede or follow NP$_{\text{Theme}}$; a postnominal PP$_{\text{Theme}}$ must precede PP$_{\text{Rec}}$.

2.2. Prepositional and nominal complements

Apart from the nominal head, noun phrases can contain one or more other constituents, which can have different forms (nominal, prepositional or clausal) as well as different functions (complement, modifier or apposition). This section will be mainly concerned with PP-complements, although we will also discuss nominal complements insofar as they alternate with these PP-complements. A general problem is that PP-complements and PP-adjuncts within the noun phrase may be

difficult to distinguish because they take the same form. We therefore begin our discussion in Section 2.2.1 by discussing some syntactic differences between them and by introducing four tests that have been proposed for distinguishing between the two. Sections 2.2.2 to 2.2.5 will discuss the various types of PP that are selected by the nouns mentioned in example (53), and apply the complement/adjunct tests from 2.2.1 to these in order to establish that they can indeed be considered complements of the noun.

(53) Types of nouns taking PP-complements

relational nouns (non-derived)			Section 2.2.2
derived nouns	deverbal nouns	ER-nominalizations	Section 2.2.3.1
		INF-nominalizations	Section 2.2.3.2
		ING-nominalizations	Section 2.2.3.3
		GE-nominalization	Section 2.2.3.4
	deadjectival nouns		Section 2.2.4
picture nouns (derived/non-derived)			Section 2.2.5

2.2.1. Tests for distinguishing PP-complements from PP-adjuncts

Section 2.2.1.1 will start by showing that PP-complements and PP-adjuncts of nouns are sometimes difficult to distinguish, due to the fact that they can have identical forms. Sections 2.2.1.2 to 2.2.1.5 will therefore discuss four tests that have been suggested to tell them apart; these are listed in the table in (54). Since these tests are not watertight, the description of each test will be followed by a discussion of exceptions to the general rules.

(54) Tests for distinguishing complements from adjuncts

NUMBER	NAME	SECTION
Test 1	Obligatoriness of the PP	2.2.1.2
Test 2	Occurrence of the *van*-PP in postcopular predicative position	2.2.1.3
Test 3	R-pronominalization of the PP	2.2.1.4
Test 4	Extraction of the PP	2.2.1.5

2.2.1.1. Difficulties in distinguishing PP-complements from PP-adjuncts

As with verbs, complements of nouns are (in principle at least) obligatory elements: they fill the argument slots in the argument structure of the noun and are therefore needed to complete the denotation of the noun. Modifiers, on the other hand, are optionally adjoined at a higher level within the noun phrase. Schematically, the difference can be represented as follows: [$_{NP}$ [N complement(s)] modifier(s)]. In many cases, however, complements and adjuncts are hard to distinguish: they have the same form and generally follow the head noun. Thus, the most common PP within the noun phrase, the *van*-PP, can be either a complement or an adjunct. The same may hold for PPs with other prepositions. Some examples will be given below.

I. van-*PPs*

Van-PPs are probably the most common PPs within a noun phrase, and can function either as a complement or an adjunct. In (55) the *van*-PPs express the theme arguments of the deverbal nouns *kopen* 'buying' and *maker* 'maker'. The PPs clearly function as complements: their (implicit or explicit) presence is required by the semantics of the derived nominal head, and the semantic relation between these arguments and the noun is identical to that between these arguments and the input verbs. The preposition *van* functions as a functional preposition: it does not have lexical content but merely expresses the relation between the head and the complement.

(55)   • PP-complements (functional *van*)
   a.   het kopen   van een krant$_{Theme}$
        the buy   of a newspaper
        'the buying of a newspaper'
   b.   de maker   van de film$_{Theme}$
        the maker of the film

In (56), on the other hand, the *van*-PPs function as adjuncts: although the information provided by the PPs is needed to identify the paper or book referred to, there is nothing in the semantics of these nouns that requires their presence: whereas it is quite acceptable to simply talk about *een fiets* 'a bike' or *een krant* 'a newspaper', mention of *een maker* 'a maker' will inevitably invoke the idea of an object that has been created, and if the context does not supply any information about that object, the result will be distinctly odd. Moreover, *van* functions here as a lexical preposition: in (56a) it expresses a possession relation, while in (56b), the relation may be regarded as one of time.

(56)   • PP-adjuncts (lexical *van*)
   a.   de fiets   van Jan$_{Poss}$
        the bike of Jan
        'Jan's bike'
   b.   de krant   van gisteren$_{Time}$
        the newspaper of yesterday
        'yesterday's newspaper'

The examples above suggest that a *van*-PP only functions as a complement of the head noun when the latter is derived and inherits the arguments of the base. This is indeed the normal rule although there are two exceptional classes: The first class is formed by the relational nouns, first introduced in Section 1.2.3, and the second by the so-called picture/story nouns, which could in a sense be said to have an agent and a theme argument. Some examples are given in (57) and (58).

(57)   • Relational nouns
   a.   Ik heb   de moeder   van Els gezien.
        I   have the mother of Els   seen
        'I have seen the mother of Els.'
   b.   De kaft   van mijn boek is gescheurd.
        the cover of my book   is torn

(58)   • Picture/story nouns
      a.   Rembrandts$_{Agent}$ schilderijen van Titus$_{Theme}$
            Rembrandt's   paintings   of Titus
      b.   Multatuli's$_{Agent}$ verhaal over Woutertje Pieterse$_{Theme}$
            Multatuli's   story   about Woutertje Pieterse

II. PPs with prepositions other than van

PP constituents within the noun phrase can be introduced by other prepositions as well. The PPs in the primeless examples in (59) clearly function as adjuncts, given that the nouns in question can also occur without them, as illustrated by the primed examples. Moreover, all the head nouns in (59) are non-derived, so that there is no question of inherited arguments. Adjunct PPs like these may display a variety of semantic roles (location, direction, means, property, etc.).

(59)   • Adjunct PPs with prepositions other than *van*
      a.   het kantoor   op de hoek$_{Location}$
            the office.building   on the corner
      a′.   Er   wordt   een kantoor   gebouwd op de hoek.
            there is   an office.building built   on the corner
            'They are building an office building on the corner.'
      b.   de trein   naar Amsterdam$_{Direction}$/uit Amsterdam$_{Source}$
            the train   to Amsterdam/from Amsterdam
      b′.   Ik reis   graag met de trein.
            I   travel PRT   with the train
            'I like traveling by train.'
      c.   een meisje met rood haar$_{Property}$
            a girl   with red hair
      c′.   Ik heb   gisteren   een meisje ontmoet.
            I   have yesterday a girl   met
            'I met a girl yesterday.'

Some researchers have argued that PP-adjuncts are easily recognizable: whenever the PP is headed by a preposition other than *van*, the PP is not a complement but an adjunct (cf. Booij & Van Haaften 1987; Hoekstra 1986): they maintain that the PPs *aan pleinvrees* 'from agoraphobia' and *naar Amsterdam* 'to Amsterdam' in the primeless sentences in (60) are adjuncts of the derived nouns *lijder* 'sufferer' and *reiziger* 'traveler', despite the fact that the preposition is identical to that selected by the input verb *lijden* 'to suffer' and *reizen* 'to travel'. Others, however, claim that the PPs are complements, inherited from the input verb. One reason to do this is that the PPs in (60a&b) differ in the same way as the PPs in the corresponding verbal constructions in (60a′&b′): in the (a)-examples the selected preposition is functional in the sense that it does not have any lexical content but simply serves to express the relation between the head and its theme argument, whereas in the (b)-examples the preposition is lexical in the sense that it has retained its original directional meaning and introduces a predicative complement.

(60)   • PP-complements
    a.   lijders   aan pleinvrees   [functional preposition]
          sufferers from agoraphobia
    a′.   Els lijdt   aan pleinvrees.
          Els suffers from agoraphobia
    b.   reizigers naar Amsterdam   [lexical preposition]
          travelers to Amsterdam
    b′.   Jan reist   naar Amsterdam.
          Jan travels to Amsterdam

2.2.1.2. Test 1: Obligatoriness of the PP

Generally speaking, complements must be realized because they provide indispensable information for establishing the denotation of the noun. Adjuncts, on the other hand, are optional and provide additional information which is not required for establishing the denotation of the noun, although, of course, the information may be needed to properly identify the intended referent of the full noun phrase. We will start with a general discussion of this obligatoriness of complements, which is followed by a discussion of some systematic exceptions to the general rule.

I. General description

Complements are obligatory elements, whereas adjuncts are optional, where obligatoriness is to be interpreted as semantic obligatoriness, which is independent of the linguistic or extra-linguistic context. Thus, many derived nouns require the presence of an argument, just like the verbs from which they are derived. Normally the examples in (61) are only acceptable when the theme argument is explicitly expressed; see also Section 2.2.3.

(61)   • PP-complements (derived nouns)
    a.   Ik heb de maker #(van dit kunstwerk) ontmoet.
          I   have the maker   of this work.of.art met
          'I have met the maker of this work of art.'
    b.   Ik heb de vernietiging #(van deze stad) meegemaakt.
          I   have the destruction   of this city   prt.-experienced
          'I have witnessed the destruction of this city.'

The same thing holds for relational nouns like *moeder* 'mother' or *zoon* 'son' in (62). Since they imply some relation between two entities, they require the presence of an argument expressing the second entity; see Section 2.2.2 for more detailed discussion. This is clear from the fact that the examples in (62) are distinctly odd without the PP, when the information expressed by the complement PP is not recoverable from the context.

(62) • PP-complements (relational nouns)
  a. Ik heb de moeder #(van Els) gezien.
     I   have the mother   of Els   seen
     'I have seen the mother of Els.'
  b. Ik heb gisteren   een zoon #(van Jan) ontmoet.
     I   have yesterday a son   of Jan   met
     'I met a son of Jan's yesterday.'

II. Exceptions

Although complement PPs are normally obligatory, there are circumstances in which the argument can be left out. The most common of these are listed below.

A. Contextual recoverability

The most common case in which the complement is not syntactically expressed is when the referent of the argument is recoverable from the context. In (63a) the required information is provided by the extra-linguistic, and in (63b) by the linguistic context.

(63) a. Ken jij   de maker?   [pointing at a work of art]
         know you the maker
         'Do you know the maker?'
  b. Een jongetje liep   met zijn ouders   in het park.
     a boy$_{dim}$ walked   with his parents in the park
     De moeder gaf   het kind een snoepje.
     the mother gave   the child a sweet
     'A boy walked with his parents in the park. The mother gave the child a sweet.'

With relational nouns referring to body parts, the latter option is even grammaticalized: not mentioning the internal argument within the noun phrase leads to a default interpretation in which some other argument in the clause is interpreted as the possessor; in (64a&b) the required information is proved by the subject *ik* 'I', and in (64c) by an indirect object *hem* 'him'. In these inalienable possession constructions, the article can of course also be replaced by a possessive pronoun explicitly expressing the related argument.

(64) a. Ik heb een/mijn been gebroken.
         I   have a/my leg   broken
         'I have broken a leg.'
  b. Ik heb pijn in het/mijn hoofd.
     I   have pain in the/my head
     'I have a headache.'
  c. Dat felle licht   geeft hem pijn in het/zijn hoofd.
     that glaring light gives him pain in the/his head
     'That glaring light gives him a headache.'

Note that the choice between an indefinite and definite article in (64) depends on whether or not the relevant body part is unique for each individual. When an

indefinite article is used with a unique body part, the inalienable possession reading will not be available: an example like (65a) will be interpreted such that Peter has broken some other person's nose. A similar effect arises when a definite article is used with a non-unique body part: (65b) will be interpreted that Peter broke some bone or, less favorably, somebody's leg. Note that modification of the non-unique body part may make the referent unique again and the example acceptable, cf. (65c).

(65) a. Jan heeft een neus gebroken. [cf. *een neus van Jan* 'a nose of Jan']
     Jan has a nose   broken
     'Jan has broken someone's nose.'

   b. Jan heeft het been   gebroken. [cf. #*het been van Jan* 'Jan's leg']
     Jan has the bone/leg broken
     'Jan has broken some bone.'

   c. Jan heeft het linkerbeen gebroken. [cf. *het linkerbeen van Jan* 'Jan's left leg]
     Jan has the left leg   broken
     'Jan has broken some bone/somebody's leg.'

When the possessor is an indirect object, as in (65b), using an indefinite noun phrase with a unique body part even renders the sentence infelicitous. The same thing holds to a somewhat lesser extent when we use a definite noun phrase with a non-unique body part.

(66) a. Dat felle licht   geeft hem pijn in het/*een hoofd.
     that glaring light gives him pain in the/a head
     Intended meaning: 'That glaring light makes his head hurt.'

   b. Peter schopte mij tegen het $^{??}$been.
     Peter kicked   me   against the leg
     Intended meaning: 'Peter kicked against my leg.'

B. Generic, predicative and habitual uses

The examples in (67) show that the internal arguments of a noun cannot be expressed in generic contexts. Example (67c) shows that these contexts also allow the use of an indefinite noun phrase for inalienable possessed unique body parts, which is impossible in the case of specific reference (cf. (65a)).

(67) a. Moeders (*van Jan en Peter) zijn altijd   gauw ongerust.
     mothers   of Jan and Peter are always   soon worried

   b. Een vader (*van Jan) dient   zijn verantwoordelijkheden te kennen.
     a father   of Jan ought his responsibilities   to know
     'A father ought to know his responsibilities.'

   c. Een neus (*van Jan) dient recht en slank   te zijn.
     a nose   of Jan   must straight and slim to be
     'A nose should be straight and slim.'

Replacing the indefinite noun phrases in (67) by specific ones gives rise to unacceptable results. They may become more acceptable, however, when the noun is modified by adjectives like *ideale* 'ideal' or *goede* 'good'. Note that, under the

intended generic reading of (68b), the PP indicates that we are dealing with an ideal of Marie; most likely she is not even married.

(68) a. Een goede moeder (*van Jan) doet zoiets   niet.
          a good mother   of Jan   does such a thing not
          'A/*Jan's good mother doesn't do a thing like that.'
      b. De ideale echtgenoot (#van Marie) doet zoiets   niet.
          the ideal husband   of Marie   does such a thing not
          'The/#Marie's ideal husband doesn't do a thing like that.'

The predicatively used noun phrases in (69) exhibit a behavior similar to the generic noun phrases in (67) and (68): the complement of the noun cannot be expressed. As in (68b), the PP in (69c) again indicates that we are dealing with an ideal of Marie; this sentence certainly does not imply that Peter is Marie's husband.

(69) a. Zij is een goede moeder (*van Jan).
          she is a good mother   of Jan
      b. Hij wordt beschouwd als een verantwoordelijke vader (*van Jan).
          he   is   regarded   as a responsible father   of Jan
      c. Peter is de ideale echtgenoot (#van Marie).
          Peter is the ideal husband   of Marie

Nouns derived from a pseudo-intransitive verb with an habitual reading inherit the property that mention of the complement is not required; the The (a)-examples in (70′) illustrate the normal, non-habitual use of the verb *roken* 'to smoke' and the derived noun *roker* 'smoker'; the (b)-examples illustrate their habitual use.

(70) a. Piet rookte gisteren   deze sigaren. a′. de roker   van deze sigaren
          Piet smoked yesterday these cigars   the smoker of these cigars
      b. Piet rookt.   b′. een roker
          Piet smokes   a smoker

C. Quantified and existential contexts

Complements can be left unexpressed when a noun is quantified, modified or negated. This is illustrated in example (71a) for the quantifier *iedere* 'every' and in (71b) for the negator *geen* 'no'. Such constructions are only fully acceptable when the sentence can be given a generic interpretation, as in (71), or when the implied argument is (con)textually recoverable, as in (72).

(71) a. Iedere moeder houdt   van haar kind.
          every mother   loves   of her child
          'Every mother loves her child.'
      b. Geen vader doet z'n kind zoiets   aan.
          no father   does his child such a thing prt.
          'No father will ever do such a thing to his child.'

(72) a. Alle moeders kwamen te laat.
          all mothers   came   too late
          'All the mothers came late.'

b. Sommige vaders wilden graag   meedoen.
some fathers   wanted eagerly join.in
'Some fathers were eager to join in.'

In contexts where the focus is on the existence of the referent, or on establishing a relation between a noun and some other entity, this other entity typically does not appear in the form of a PP either. In example (73a), for instance, a relationship is established between the noun phrases *een koningin* 'a queen' and *dit land* 'this country'. In such a context, the noun *koningin*, which normally requires a complement, can appear as an indefinite noun phrase without a complement. The same thing is true of the noun phrase *een dampkring* 'an atmosphere' in (73b).

(73) a. Dit land   heeft een koningin.
this country has   a queen
b. Er   ligt een dampkring om de aarde.
there lies an atmosphere around the earth
'The earth is surrounded by an atmosphere.'

Where the noun appears in a definite noun phrase, on the other hand, a related argument is always implied and the relation between the noun and implied entity presupposed (e.g., "the queen of this country" and "the atmosphere of the earth" in examples (74a&b)).

(74) a. Ik heb   de koningin gezien.
I   have the queen   seen
'I have seen the queen.'
b. Het ruimteschip keerde terug in de dampkring.
the spaceship   turned back into the atmosphere
'The spaceship re-entered the atmosphere.'

D. Incorporation (compounding)

Incorporation of one of the arguments of a deverbal noun is quite a common process in Dutch, particularly with ER- and ING-nominalizations. Examples of incorporation with ER-nouns can be found in (75). These examples show that incorporation results in °adicity reduction of the derived noun, as the argument slot originally held by the incorporated argument is no longer available. This means that whereas the ER-noun normally requires the expression of a particular argument, this is no longer possible if this argument has been incorporated.

(75) a. Mijn oom is hondenfokker (*van terriërs).
my uncle is dog.breeder   of terriers
b. De krantenverkoper (*van ochtendbladen) deed goede zaken.
the newspaper.seller   of morning.papers did   good business
c. De bordenwassers (*van soepborden) staakten   voor meer loon.
the dish.washers   of soup.dishes   went on strike for higher wages

In the case of ING-nominalizations, theme incorporation also seems to result in adicity reduction, although the effects may not be as strong as with ER-

nominalization. Section 1.3.1.3.3 has already shown that incorporation is possible both with NP- and PP-themes of the input verb.

(76) a. De plotselinge prijsstijging *(van de benzineprijs) veroorzaakte veel paniek.
          the sudden price increase   of the gas.price   caused   much panic
          'The sudden increase in (petrol) prices caused a lot of panic.'
      b. De prijsuitreiking   (??van de Oscars) is volgende week.
          the prize.presentation   of the Oscars   is next week
          'The (Oscar) presentation will be next week.'
      c. De hertenjacht (??op jong wild)   zou   verboden moeten worden.
          the deer.hunt   on young game should prohibited must   be
          'Deer hunting should be prohibited.'

Adicity reduction is not restricted to those cases where an argument is incorporated. In many cases incorporation of some other element (an adjunct) may also block the expression of a theme argument. This is illustrated in (77) for an ER-noun with an incorporated purpose adjunct and an incorporated instrument adjunct; see Section 2.2.3.1.2, sub E, for more discussion.

(77) a. Mijn broer is broodschrijver (*van kinderboeken).
          my brother is bread.writer   of children's books
      b. Dit is een schilderij van een voetschilder (*van stillevens).
          this is a painting   of a foot-painter   of still.lives
          'This is a painting by a foot-painter.'

Example (78a) shows that, after incorporation of the theme argument of an ING-nominalization derived from a ditransitive verb, the resulting compound noun is preferably used without any arguments: expression of the recipient seems possible, but is certainly marked. Example (78b) further shows that, after incorporation of a theme argument, the agent cannot be expressed in the form of an agentive *door*-PP; using a *van*-PP is possible, but this may be due to the fact that this PP in fact expresses a possessive relation.

(78) a. De prijsuitreiking   (?aan de Oscarwinnaars) is volgende week.
          the prize.presentation   to the Oscar.winners   is next week
          'The presentation of prizes to the Oscar winners will be next week.'
      b. De patiëntenbehandeling van/*door die arts liet veel te wensen over.
          the patients.treatment   of/by that doctor left much to desire   prt.

The facts in (77) and (78) suggest that compound ING-nouns are lexicalized as a result of which they do not accept arguments. However, this may not be a general rule given that there are some ING-nominalizations with an incorporated adjunct that do seem to allow the expression of arguments. In example (79), for instance, the incorporated adjunct *leeftijd* 'age', which provides the ground on which discrimination takes place, does not block the presence of the theme argument *van oudere werknemers* 'of older employees'.

(79)   Het bedrijf   was schuldig aan leeftijdsdiscriminatie van oudere werknemers.
          the company was guilty   of age.discrimination   of older employees
          'The company was guilty of age discrimination of older employees.'

2.2.1.3. Test 2: Occurrence of the van*-PP in postcopular predicative position*

The test that will be discussed in this section can only be applied to *van*-PPs within the noun phrase: it is claimed that whereas adjunct *van*-PPs can occur in postcopular predicative position, complement *van*-PPs cannot.

I. General description

The primeless examples in (80) involve non-relational nouns with adjunct *van*-PPs, and the primed examples show that the postnominal *van*-PP can also be used as a predicate in a copular construction. The *van*-PP stands in a severely restricted semantic relationship with the referent of the subject noun phrase: in (80a) the PP expresses a possessive relationship with the subject, in (80b) it denotes the material that is used to create the subject, and in (80c) it refers to a time that is needed to properly identify the intended referent of the subject.

(80)   • PP-adjuncts

a.   het huis   van Jan   a′.   Het huis   is van Jan.
the house   of Jan   the house is of Jan
'Jan's house'   'The house is Jan's'

b.   een horloge van goud   b′.   Dit horloge is van goud.
a watch   of gold   this watch   is of gold
'a golden watch'   'This watch is made of gold.'

c.   de krant   van gisteren   c′.   Deze krant   is van gisteren.
the newspaper of yesterday   this newspaper is of yesterday
'yesterday's newspaper'   'This is yesterday's newspaper.'

The primeless examples in (81) involve relational nouns, so that the PPs must be considered complements, and the primed examples show that the postnominal *van*-PP cannot be used as a predicate in a copular construction.

(81)   • PP-complements

a.   de deur   van het gebouw   a′.   *De deur is van het gebouw.
the door   of the building   the door is of the building

b.   de vader   van Jan   b′.   *Deze vader is van Jan.
the father   of Jan   this father is of Jan
'Jan's father'

c.   de knie   van Jan   c′.   *De knie is van Jan.
the knee   of Jan   the knee is of Jan
'Jan's knee'

This test can only be used for PPs introduced by the preposition *van*. The examples in (82) show that PPs with prepositions other than *van* can never be used predicatively in postcopular position.

(82)   • PP-adjuncts

a.   een meisje met rood haar   a′.   *Dit meisje is met rood haar.
a girl   with red hair   this girl   is with red hair

b.   een brief met vlekken   b′.   *?De brief is met vlekken.
a letter   with stains   the letter is with stains

c.   een excursie door Afrika   c′.   *?Die excursie is door Afrika.
a excursion   through Africa   that excursion is through Africa

Apparent counterexamples involve PPs denoting a location. Example (83b) shows that these PPs are fully acceptable as the predicative complement of *be*. This is of course related to the fact that in this case *be* has an additional locational meaning aspect: it is used as a locational verb with the meaning "is situated", comparable to a verb like *staan* 'to stand'.

(83) a. het gebouw   op de hoek
          the building   on the corner
      b. Het gebouw is/staat   op de hoek.
          the building is/stands on the corner
          'The building is situated/standing on the corner.'

Another complicating factor may be ellipsis: example (84b) seems to be at least marginally possible, but it may be said to be an elliptic form of the sentence in (84b′), where the PP *met kaas* 'with cheese' does not function as a predicative PP, but as the complement of the verb *beleggen* 'to put on/to fill'.

(84) a. een broodje met kaas   a′. een broodje belegd met kaas
          a roll   with cheese   a roll   filled   with cheese
          'a cheese roll'   'a roll filled with cheese'
      b. ?Dit broodje is met kaas.   b′. Dit broodje is belegd met kaas.
          this roll   is with cheese   this roll   is filled   with cheese

So far all examples discussed in this section involve non-derived nouns. Applying the test to derived nouns modified by PPs shows that here, too, placement of complements in predicative postcopular position is impossible. This is true both for *van*-PPs and for PPs headed by other prepositions, as shown by the primed examples in (85) and (86), respectively. These examples further show that this holds regardless of the type of nominalization; cf. also Section 2.2.3.

(85)   • PP-complements (*van*-PPs)
      a. de maker   van het schilderij   a′. *De maker is niet van het schilderij.
          the maker of the painting   the maker is not of the painting
      b. de vernietiging van de stad   b′. *De vernietiging is niet van de stad.
          the destruction of the city   the destruction is not of the city

(86)   • PP-complements (other than *van*)
      a. reizigers naar Amsterdam   a′. #De reizigers zijn naar Amsterdam.
          travelers to Amsterdam   the travelers are to Amsterdam
      b. zijn hoop op een beter leven   b′. *Zijn hoop is op een beter leven.
          his hope   for a better life   his hope is for a better life
      c. het zoeken   naar de waarheid   c′. *Het zoeken is naar de waarheid.
          the search   for the truth   the search is for the truth

II. Exceptions

There are instances where it seems possible for the PP-complement to appear in postcopular position. This is the case, for example, when the (part-whole) relation, which is normally presupposed, needs to be asserted. Some examples are given in

(87); note that the subject noun phrases are typically introduced by demonstrative pronouns (unless we are dealing with proper nouns).

(87) a. Dit dak   is van dat gebouw.
          this roof is of that building
          'This roof belongs to that building.'
      b. Deze kaft is van dat boek.
          this cover is of that book
          'This cover belongs to that book.'
      c. Die knie is van Jan.
          that knee is of Jan
          'That knee belongs to Jan.'

2.2.1.4. Test 3: R-pronominalization of the PP

The third test involves °R-pronominalization of the postnominal PP: the examples in (88) show that PP-complements can undergo this process, regardless of whether the PP is headed by *van* or some other preposition; the examples in (89) show that R-pronominalization is impossible with PP-adjuncts.

(88)   • PP-complement
      a. Ik heb   de verwoesting van de stad/ervan   meegemaakt.
          I   have the destruction of the city/there-of prt.-experienced
          'I have witnessed the destruction of the city/its destruction.'
      b. Hij had de hoop op bevordering/erop   al   opgegeven.
          he   had the hope on promotion/there-on already given.up
          'He had already given up the hope of a promotion/it.'

(89)   • PP-adjunct
      a. een laken   van satijn/*ervan
          a sheet   of satin/there-of
      b. een meisje met rood haar/*ermee
          a girl   with red hair/there-with
      c. een vaas   uit China/*eruit
          a vase   from China/from there

Note that using the split version of the pronominal PP (*er* ... P instead of *er* + P) does not lead to unequivocal results. The sentences in (90) show that the °R-extraction is possible from *van*-complements, even though there may be a slight preference for the unsplit constructions.

(90)   • PP-complements (*van*-PPs)
      a. Ik heb   <^(?)er> de verwoesting <er> van meegemaakt.
          I   have there   the destruction   of prt.-witnessed
      b. Ze hebben <[?]er>   de overname <er> van bekritiseerd.
          they have   there   the take over   of   criticized
      c. Ze hebben <^(?)er> de export <er> van stilgelegd.
          they have   there   the export   of   stopped

The examples in (91), on the other hand, show that the split versions tend to be markedly worse with complements headed by other prepositions.

(91)　　　• PP-complements (other than *van*)
　　a.　Hij　heeft　de hoop　op een beter leven　verloren.
　　　　he　has　　the hope　on a better life　　lost
　　a′.　Hij　heeft　<*?er>　de hoop <er>　op　verloren.
　　　　he　has　　there　the hope　　on　lost
　　b.　Zij　heeft　het geloof　in een goede afloop　opgegeven.
　　　　she　has　　the belief　in a good ending　　given.up
　　b′.　Zij　heeft　<*er>　het geloof <?er>　in opgegeven.
　　　　she　has　　there　the belief　　　in given.up

Since we will see later that *van*-PPs can also be used as adverbial phrases with the main function of restricting the domain of discussion, this contrast may be due to the fact that the split patterns in (90) do not involve extraction of the R-word from the complement of the noun but from an independent adverbial phrase. The fact that the split patterns in (91) are severely degraded could then be attributed to the fact that restrictive adverbial phrases of this type can only be introduced by a limited set of prepositions including *van* 'of', *over* 'about', and *bij* 'with', but excluding *op* 'on' and *in* 'in' (this claim, of course, does not imply that, e.g., locational adverbial phrases introduced by *op* and *in* cannot be used restrictively).

　　If this suggestion is on the right track, the split patterns in (90) would be analyzed in the same way as the split version of the pronominal PPs in the primed examples in (92), which cannot be interpreted on a par with the PPs in the primeless examples, but must be interpreted as VP-adjuncts: the split pronominal PP *er ... in* in (92a) can only be interpreted as a locational adverbial phrase indicating where the introduction was written down, and the split pronominal PP *er ... mee* in (92b′) can only be interpreted as an adverbial phrase indicating the instrument that was used to stop the extension.

(92)　a.　Ik heb　een inleiding　in de taalkunde　geschreven.
　　　　I　have　an introduction　in the linguistics　written
　　a′.　Ik heb　<#er> een inleiding <?er> in geschreven.
　　　　I　have　there an introduction　　in written
　　b.　Ik heb　een uitbreiding　met twee nieuwe netwerken kunnen　tegenhouden.
　　　　I　have　an extension　　with two new networks　　can　　prt.-stop
　　b′.　Ik heb　<#er> een uitbreiding <?er> mee　kunnen　tegenhouden.
　　　　I　have　there an extension　　　with　can　　prt.-stop

2.2.1.5. Test 4: Extraction of the PP

The final test involves extraction of the PP from noun phrases. It has been argued that this is only possible with PP-complements; extraction of PP-adjuncts gives rise to a degraded result; c.f., e.g., De Wit (1997: 149) and Coppen (1991). Although something of the sort may be true, the following discussion will show that there are several factors that complicate the application of this test. Furthermore, we will see in Sections 2.2.2 to 2.2.5 that this test provides us with the least clear results, which furthermore often conflict with those of the three tests discussed earlier. We

therefore tend to dismiss this test as a good test for determining complement/adjunct status of PPs within the noun phrase.

I. General description

There are various forms of extraction from the noun phrase: topicalization, relativization and *wh*-movement, °PP-over-V and °scrambling. Since they all have their own specific features, they will be discussed separately. We will mainly use *van*-PPs for illustration since these provide the clearest results. The behavior of PPs headed by prepositions other than *van* will be discussed in Sections 2.2.2 to 2.2.5, devoted to the different noun types.

A. Topicalization

The examples in (93) and (94) suggest that there is a sharp contrast between topicalization of *van*-complements and *van*-adjuncts; (93) seems to show that the inherited argument of the deverbal noun *ontslag* 'dismissal' and the relational argument *van Els* 'of Els' of the relational noun *vader* can be readily topicalized (with perhaps a slightly marked result), whereas (94) shows that this is excluded in the case of adjunct PPs.

(93) • Complement PPs headed by *van*
    a. Ik betreur het ontslag   van mijn broer.
        I   deplore the dismissal of my brother
        'I deplore my brother's dismissal.'
    a′. [?]Van mijn broer betreur ik het ontslag.
    b. Ik heb de vader   van Els gezien.
        I   have the father of Els   seen
        'I have seen Els' father.'
    b′. Van Els heb ik de vader gezien.

(94) • Adjunct PPs headed by *van*
    a. Ik heb de lakens van satijn gekocht.
        I   have the sheets of satin   bought
        'I have bought the satin sheets.'
    a′. ^{*?}Van satijn heb ik de lakens gekocht.
    b. Ik heb de krant   van gisteren gelezen.
        I   have the newspaper of yesterday read
        'I have read yesterday's newspaper.'
    b′. *Van gisteren heb ik de krant gelezen.

Note that the noun phrase contained in the topicalized complement PP cannot be nonspecific indefinite. This is, of course, not surprising given that topic constituents are typically definite, that is, recoverable from or given in the discourse context.

(95) a. ^{*?}Van een vriend heb ik gisteren   de ouders   ontmoet.
         of a friend   have I yesterday the parents met
    b. *Van een auto heb ik de motor gerepareerd.
        of a car   have I   the engine repaired

Given that topicalization can also be used as a °focusing device, we expect that the examples in (95) improve when the noun phrases are assigned focus accent, but this is not borne out. A focus reading is, however, much favored when the sentence contains a modal verb like *willen* 'want' or *kunnen* 'be able', and example (96) shows that this licenses topicalization of indefinite PP-complements (see Subsection IIC for more discussion).

(96) a. Van een VRIEND wil ik (altijd) graag de ouders ontmoeten.
    of a friend   want I always much the parents meet
    'I always very much like to meet the parent of friends.'
 b. Van een AUTO kan ik waarschijnlijk wel de motor repareren.
    of a car   can I probably   PRT the engine repair
    'I can probably repair the engine of an (old) car.'

B. Relativization and questioning

The examples in (97) and (98) suggest that PP-complements can be readily relativized or questioned, whereas this is impossible with PP-adjuncts.

(97)   • Complement PPs headed by *van*
 a. Dat is de man van wie ik het ontslag betreur.
    that is the man of whom I the dismissal deplore
 a′. Van wie betreur jij het ontslag?
    of whom deplore you the dismissal
 b. Dit is de vrouw van wie ik de vader heb gezien.
    this is the woman of whom I the father have seen
 b′. ?Van wie heb jij de vader nog niet gezien?
    of whom have you the father not yet seen

(98)   • Adjunct PPs headed by *van*
 a. *?Dit is satijn waarvan ik de lakens heb gekocht.
    this is satin of.which I the sheets have bought
 a′. *?Van wat voor stof heb jij de lakens gekocht?
    of what kind of fabric have you the sheets bought
 b. *?Dit is de dag waarvan ik de krant gelezen heb.
    this is the day of.which I the newspaper read have
 b′. *?Van welke dag/Van wanneer heb jij de krant gelezen?
    of what day/of when   have you the newspaper read

C. PP-over-V

Generally speaking, PP-over-V is readily possible with complements, but not with adjuncts. The results are, however, less convincing than with topicalization, relativization and questioning: PP-over-V of the PP-complements in (99) gives rise to an acceptable (but marked) result, whereas PP-over-V of the PP-adjuncts in (100) gives rise to a definitely worse, although not necessarily impossible, result.

(99)   • Complement PPs headed by *van*

    a.   Ik zal het ontslag   <van mijn zus> betreuren <$^?$van mijn zus>.
            I   will the dismissal   of my sister   deplore
            'I will deplore my brother's dismissal.'

    b.   Ik heb   de vader   <van Els> gezien <$^?$van Els>.
            I   have the father   of Els   seen
            'I have seen Els' father.'

(100)   • Adjunct PPs headed by *van*

    a.   Ik heb   de lakens   <van satijn> gekocht <$^{*?}$van satijn>.
            I   have the sheets   of satin   bought
            'I have bought the satin sheets.'

    b.   Ik heb   de krant   <van gisteren> gelezen <$^{??}$van gisteren>.
            I   have the newspaper of yesterday read
            'I have read yesterday's newspaper.'

Note that PP-over-V is readily possible when the noun phrase contained in the complement PP is indefinite, which is not really surprising given that PP-over-V is normally used as a focalizing device; see the discussion in Subsection II below.

(101) a.   Ik heb   de ouders   ontmoet van een GOEDE vriend.
            I   have the parents met   of a good friend

      b.   Ik heb   de motor   gerepareerd van ÉÉN auto.
            I   have the engine repaired   of one car

D. Scrambling

Again, the scrambling test seems to point in the same direction: although sentence (102a) seems somewhat odd on a neutral, non-contrastive reading, scrambling of the related argument *van Els* in example (102b) seems acceptable on a non-contrastive reading; with the PP-adjuncts in (103), on the other hand, scrambling is impossible both on a neutral and on a contrastive reading.

(102)   • Complement PPs headed by *van*

    a. $^?$Ik zal van mijn broer zeker   het ontslag   betreuren.
            I   will of my brother   certainly the dismissal deplore
            'I will certainly deplore my brother's dismissal.'

    b.   Ik heb   van Els gisteren   de vader   gezien.
            I   have of Els   yesterday the father   seen
            'I have seen Els' father yesterday.'

(103)   • Adjunct PPs headed by *van*

    a.   *Ik heb   van satijn gisteren   de lakens gekocht.
            I   have of satin   yesterday the sheets bought

    b.   *Ik heb   van gisteren de krant   gelezen.
            I   have of yesterday the newspaper read

Note that scrambling is also possible when the noun phrase contained in the complement PP is indefinite, which is again not really surprising given that scrambling can be also used as a focalizing device; cf. the discussion in Subsection II.

(104) a.　Ik　heb　van een GOEDE vriend　de ouders　ontmoet.
　　　　　I　have　of a good friend　　　the parents　met
　　　b.　Ik　heb　van ÉÉN auto de motor　gerepareerd.
　　　　　I　have　of one car　　the engine　repaired

II. Exceptions

The discussion above suggests that whereas PP-complements can readily be extracted from the noun phrase, this is impossible with PP-adjuncts. However, it still seems to be possible to extract PP-adjuncts under certain specific circumstances, which will be discussed below.

A. Contrastive and restrictive focus

Extraction of PP-adjuncts seems to be facilitated by assigning °focus accent to the PP: this may make many of the unacceptable examples in Subsection I more acceptable (see, e.g., Keijsper 1985 and Verhagen 1986; for English, see also Guéron 1980, Rochemont 1978; Rochemont & Culicover 1990: 64-65). The focus accent may merely serve to emphasize new or salient information, although it usually serves a contrastive function by excluding other referents from the proposition in question. We will, in this particular context, distinguish between contrastive and restrictive focus.

　　　CONTRASTIVE FOCUS is used where one or more specific referents are part of the domain of discourse to which the proposition does not apply. The examples in (105) show that this type of focus can be achieved by topicalization, scrambling and PP-over-V; focus is indicated through the use of small caps, and licenses extraction of a possessor PP.

(105) a.　Van JAN heb　ik　gisteren　　de auto gerepareerd　(en NIET van PETER).
　　　　　of Jan　　have　I　yesterday　the car　repaired　　　and not of Peter
　　　　　'It is JAN'S car I repaired yesterday (and NOT PETER'S).'
　　　b.　Ik　heb　van JAN gisteren　　de auto gerepareerd　(en NIET van PETER).
　　　　　I　have　of Jan　yesterday　the car repaired　　　and not of Peter
　　　c.　Ik　heb　gisteren　　de auto gerepareerd van JAN　(en NIET van PETER).
　　　　　I　have　yesterday　the car　repaired　　of Jan　　and not of Peter

RESTRICTIVE FOCUS simply implies that the proposition in question is not true of any other referents: a specific, restricted set is selected and a proposition is said to hold for this set only. Unlike in the case of contrastive focus, the proposition usually contains new information. Restrictive focus is typically realized by means of topicalization or scrambling, as in (106a&b), but less readily available in the case of PP-over-V in (106c). Naturally, intonation plays a crucial role in distinguishing between the various types of focus. A treatment of intonation phenomena is, however, outside the scope of the present discussion.

(106) a.　Van JAN heb　ik　de auto　gerepareerd (en van NIEMAND anders).
　　　　　of Jan　　have　I　the car　repaired　　and of nobody else
　　　b.　Ik　heb　van JAN de auto　gerepareerd (en van NIEMAND anders).
　　　　　I　have　of Jan　the car　repaired　　and of nobody else
　　　c.　??Ik　heb　de auto　gerepareerd van JAN (en van NIEMAND anders).
　　　　　I　have　the car　repaired　　of Jan　　and of nobody else

This particular exception to the possibility of extracting PPs may also account for the acceptability of the interrogative construction in (107a), since questioning automatically assigns (new) focus to the questioned element. Note, however, that sentences like (107b&c) are at best marginally acceptable, and then only with the very strong emphasis of an echo-question and preferably with a definite remnant noun phrase.

(107) a.   Van WIE heb jij   een/de auto gerepareerd?   [question]
            of whom have you a/the car   repaired
            'WHOSE car have you repaired?'
      a'.   Van PETER (heb ik een/de auto gerepareerd).   [reply]
            of Peter   have I   a/the car   repaired
      b.   *?WAAR<VAN> heb   jij   lakens <van> gekocht?
            where of   have you sheets   bought
      c.   *?Van WANNEER heb   jij   de krant gelezen?
            of when   have you the paper read

Given the discussion above it will not come as a surprise that the presence of focus particles and negation facilitates extraction. This is illustrated in (108a&b) for preposed and scrambled PPs with the focus particles *alleen* 'only' and *ook* 'also', and in (109a&b) for PPs with the negation element *niet* 'not'. The (c)-examples show that PP-over-V is also possible but then the focus particle and the negation element must be placed in the °middle field of the clause.

(108) a.   *Alleen*/*Ook* van JAN heb   ik de auto gezien.
            only/also of Jan   have I   the car seen
            'I have seen only JAN'S car.'
      b.   Ik heb *alleen*/*ook* van JAN de auto gezien.
      c.   Ik heb *alleen*/*ook* de auto gezien van JAN.

(109) a.   *Niet* van JAN heb   ik de auto gezien (maar van PETER).
            not of Jan   have I   the car seen   but of Peter
            'It's not JAN'S car I've seen (but PETER'S).'
      b.   Ik heb *niet* van JAN de auto gezien (maar van PETER).
      c.   Ik heb *niet* de auto gezien van JAN (maar van PETER).

Now consider again the examples in (110), taken from Subsection I. These examples contrast sharply with those in (111), in which the demonstrative *dit* 'this' invites a contrastive reading. We see that this actually makes extraction the preferred option.

(110) a.   Ik heb   de lakens van satijn gekocht.
            I   have the sheets of satin   bought
            'I have bought the satin sheets.'
      b.   *?Van satijn heb ik de lakens gekocht.
      c.   *?Ik heb de lakens gekocht van satijn.
      d.   *Ik heb van satijn de lakens gekocht.

(111) a. $^?$Ik heb de LAKENS van DIT satijn gekocht (en de SLOPEN van DAT satijn).
      I   have the sheets   of this satin   bought   and the slips of that satin
      'I bought the SHEETS made of THIS satin (and the SLIPS made of THAT satin).'
   b. Van DIT satijn heb ik de LAKENS gekocht (en van DAT satijn de SLOPEN).
   c. Ik heb de LAKENS gekocht van DIT satijn (en de SLOPEN van DAT satijn).
   d. Ik heb van DIT satijn de LAKENS gekocht (en van DAT satijn de SLOPEN).

The examples in (112) show that *wh*-movement also becomes possible when focus is assigned to the *wh*-phrase. The two examples differ in interpretation, however: (112a) triggers an echo-question interpretation, whereas (112b) can be interpreted as a true question. This difference is probably due to the fact that only in the latter case is the *wh*-phrase sufficiently °D-linked to be assigned a contrastive interpretation.

(112) a. $^{*?}$Van WAT voor stof heb jij de lakens gekocht?
      of what kind of fabric have you the sheets bought
   b. Van WELK satijn heb jij   de LAKENS gekocht?
      of which satin   have you the sheets   bought

B. Definiteness and specificity

Another (related) aspect influencing the acceptability of PP-extraction is the definiteness and specificity of the remnant noun phrase. This is illustrated by (113): when the remnant noun phrase is indefinite, preposing of the PP becomes more acceptable under neutral (non-contrastive) intonation.

(113) a. Ik heb gisteren   de/een auto van Jan gezien.
      I   have yesterday the/a car   of Jan   seen
      'I have seen Jan's car.'
   a′. $^{??}$Van Jan heb ik gisteren de auto gezien.
   a″. $^?$Van Jan heb ik gisteren een auto gezien.
   b. Ik heb gisteren   de/∅ lakens van satijn gekocht.
      I   have yesterday the/∅ sheets of satin   bought
      'Yesterday I bought satin sheets.'
   b′. $^{*?}$Van satijn heb ik gisteren de lakens gekocht.
   b″. $^{??}$Van satijn heb ik gisteren ∅ lakens gekocht.

With PP-over-V and scrambling, too, indefiniteness of the remnant noun phrase makes extraction easier. This is illustrated in example (114): the definite noun phrase in (114a), for example, more or less forces an appositive interpretation of the extraposed PP, whereas this is not the case with the indefinite noun phrase; with the scrambling case in (114a′), the contrast is even more pronounced. A similar contrast can be found in (114b&b′).

(114) a. Ik heb   een/$^?$de auto gezien van Jan.
      I   have a/the car   seen   of Jan
   a′. Ik heb van Jan gisteren een/$^{??}$de auto gezien.
   b. Ik heb gisteren   ∅/$^{*?}$de lakens gekocht van satijn.
      I   have yesterday ∅/the sheets   bought of satin
   b′. Ik heb van satijn gisteren $^{??}$∅/*de lakens gekocht.

C. Modal contexts

Example (96) has shown that the use of modal verb like *willen* 'want' or *kunnen* 'be able' much favor a focus reading of topicalized phrases. The primeless examples in (115) show that in the presence of these verbs *van*-adjuncts can also be topicalized; the primed and doubly-primed examples show that the thing same holds for PP-over-V and scrambling.

(115) a. Van deze stof wil   ik graag een jurk hebben.
          of this fabric   want I   much a dress   have
          'I would very much like to have a dress of this fabric.'
      a′. Ik wil graag een jurk hebben van deze stof.
      a″. Ik wil van deze stof graag een jurk hebben.
      b. Van (zulk) hout zal ik waarschijnlijk een kast kopen.
          of   such   wood will I   probably   a chest   buy
          'I'll probably buy a chest of such wood.'
      b′. Ik zal waarschijnlijk een kast kopen van (zulk) hout.
      b″. Ik zal van (zulk) hout waarschijnlijk een kast kopen.

D. Adjunct PPs headed by prepositions other than van

All examples with adjunct extraction given above involve a PP introduced by *van* 'of'. This is not an accident since it seems that extraction of adjunct PPs headed by other prepositions is much more constrained. The examples in (116) show that extraction is impossible even in modal contexts with an indefinite remnant noun phrase.

(116) a. #Met (zulke) inktvlekken kan ik (de) brieven niet lezen.
          with such inkblots   can I   the letters   not read
      a′. *?Ik kan de brieven niet lezen met (zulke) inktvlekken.
      a″. *Ik kan met (zulke) inktvlekken (de) brieven niet lezen.
      b. *Uit China   wil   ik (deze) twee vazen kopen.
          from China want I   these two vases   buy
      b′. *?Ik zal (deze) twee vazen kopen uit China.
      b″. *Ik zal uit China (deze) twee vazen kopen.

The rule that extraction of adjunct PPs headed by prepositions other than *van* is excluded also has its exceptions. It is possible with long, weighty PPs. As shown by example (117), PP-over-V of such PPs is possible with complements and adjuncts alike.

(117) a. dat ik het ontslag   betreur van die jongen ?(die zo veel
          that I the dismissal   deplore of that boy   who so much
          van computers   afweet).
          about computers prt.-knows
      b. Ik heb   de lakens gekocht van ??(?een heel bijzonder soort) satijn.
          I   have the sheets bought of   a very special type satin
      c. Ik heb de krant   gelezen van de dag dat JFK werd vermoord/??gisteren.
          I have the newspaper read   of the day that JFK was killed/yesterday
      d. Jan heeft een brief gelezen met inktvlekken *?(zo groot als eieren).
          Jan has   a letter   read   with inkblots   as big as eggs

III. Concluding remarks

Subsection II has discussed a number of exceptions to the general rules that adjunct PPs cannot be extracted from a noun phrase. Given that these exceptional cases all involve *van*-PPs, we must be careful not to jump to the conclusion that adjunct extraction is possible under certain circumstances, but first see whether some alternative analysis is possible. Here we will suggest that a large number of these exceptional cases can in principle be accounted for by assuming that the PPs in question are generated as restrictive adverbial phrases outside of the noun phrase, the main function of which is to restrict the domain of discourse.

That this is a realistic option will become clear from the examples in (118). In (118a), the *van*-PP can readily be construed as a source argument selected by the verb *horen* 'to hear'. This is, however, less likely in the case of (118b): the information that Peter will come is not necessarily provided by Jan himself, but might have been acquired in some other way. Analyzing the *van*-PP in example (118c&d) as a source argument of the verb *weten* 'to know' is even more unlikely: in (118c) the source of the evaluative contention expressed by the embedded clause is most likely the speaker himself, and in (118d) the source cannot be the referent of the noun phrase embedded in the *van*-PP given that it does not refer to a human entity. From this, we conclude that, at least in (118b-d), the *van*-PP need not or cannot be construed as a complement of the verb.

(118) a. Van Peter heb ik nog niets   gehoord (maar wel van Jan).
          of Peter have I yet nothing heard   but AF from jan
          'So far I haven't heard anything from Peter (but I did from Jan).'
     b. Van PETER weet ik dat hij komt (maar niet van JAN).
          of Peter   know I   that he comes but   not of Jan
          'I know that PETER will come, but I do not know whether JAN will.'
     c. Van DEZE jongen weet ik alleen dat hij erg aardig is.
          of this boy   know I   only   that he is very nice
          'As far as this boy is concerned, I only know that he is very nice.'
     d. Van deze plantensoort weten we dat hij uitgestorven is.
          of this plant species   know   we that he extinct is
          'As far as this botanical species is concerned, we know that it is extinct.'

The discussion above has shown that *van*-PPs can be introduced into the structures as independent adverbial phrases: the main function of these adverbial phrases is to restrict the domain of discourse, and for this reason they are often assigned restrictive focus accent. The fact that this also holds for the PPs in the apparent cases of PP-adjunct extraction discussed in Subsection II suggests that these cases also involve an independently generated adverbial phrase. This suggestion is further supported by the fact that these *van*-PPs cannot readily appear in a position immediately following the head when they are focused. This was already demonstrated by example (111), repeated here as (119).

(119) a. ᶦIk heb de LAKENS   van DIT satijn gekocht (en de SLOPEN van DAT satijn).
          I   have the sheets   of this satin   bought and the slips of that satin
          'I bought the SHEETS made of THIS satin (and the SLIPS made of THAT satin).'
     b. Van DIT satijn heb ik de LAKENS gekocht (en van DAT satijn de SLOPEN).

    c.   Ik heb de LAKENS gekocht van DIT satijn (en de SLOPEN van DAT satijn).

    d.   Ik heb van DIT satijn de LAKENS gekocht (en van DAT satijn de SLOPEN).

That the supposedly extracted *van*-PPs are actually adverbial phrases can perhaps also be argued on the basis of example (120a) containing the focus particles *alleen* 'only' and *ook* 'also': under the standard assumption that the string preceding the finite verb constitutes a single constituent, the extraction analysis may wrongly predict that the (120b) should be acceptable as well. Recall, however, that in the case of PP-over-V the particle and the noun phrase must also be split, so it may be the case that some interfering factor is at play; cf. Barbiers (1995). The examples in (121) provide similar cases involving constituent negation.

(120) a.   <Alleen/Ook van Jan> heb ik de auto gerepareerd.
          only/also of Jan   have I the car repaired
          'I have repaired only Jan's car.'

    b. *Ik heb de auto alleen/ook van Jan gerepareerd.

    c.   Ik heb alleen/ook de auto van Jan gerepareerd.

(121) a.   Niet van Jan heb ik de auto gerepareerd (maar van Peter).
          not of Jan   have I the car repaired   but of Peter
          'It's not Jan's car I've repaired (but Peter's).'

    b. *Ik heb de auto niet van Jan gerepareerd (maar van Peter).

    c.   Ik heb niet de auto van Jan gerepareerd (maar van Peter).

    More evidence in favor of the suggested analysis is provided by the examples in (122): with a *van*-PP in sentence-initial position, the sentence is acceptable both with the definite article *het* 'the' and with the possessive pronoun *zijn* 'his' (although the latter is slightly marked). With the PP directly following the head, on the other hand, only the definite article can be used. This suggests that, at least in the case of the construction with the possessive determiner, but more likely in both cases, the *van*-PP in (122a) is not extracted from the noun phrase *zijn werk* 'his work' but generated as an independent adverbial constituent.

(122) a.   Van Jan heb ik het/[?]zijn werk gecorrigeerd.
          of Jan have I the/his work   corrected
          'Jan's work I have corrected.'

    b.   Ik heb het/*zijn werk van Jan gecorrigeerd.

Examples of a similar kind are given in (123). Here, too, the *van*-PP cannot have been extracted from the subject, since occurrence in what would have been the original position, following the head, is not possible.

(123) a.   Jan vertelde dat van de hele klas   alleen Marie geslaagd is.
          Jan told   that of the whole class only Marie   passed is
          'Jan told that, of the entire class, only Marie has passed the exam.'

    b. *Jan vertelde dat alleen Marie van de hele klas is geslaagd.

The discussion above seems to lead to the conclusion that many cases of alleged PP-adjunct extraction from noun phrases are just apparent, and should be reanalyzed as involving an independent adverbial phrase. This, of course, has

serious consequences for the extraction test as a whole, as it may be that the purported cases of extraction of PP-complements from noun phrases likewise involve independent adverbial phrases: see Broekhuis (2005) for relevant discussion.

2.2.1.6. Illustration of the application of the tests

To conclude the discussion of the complement/adjunct tests presented in the previous sections, let us apply them to the problematic cases in (124). Since the referent of the noun phrase contained by the *van*-PP is normally interpreted as the designer of the object in question, one might be tempted to construe the nouns *stoel* 'chair' and *piano* 'grand piano' as relational nouns, that is, nouns that take a *van*-PP as their complements. Alternatively one might consider the *van*-PP as an adjunct expressing a possessive relation. We will show below that the complement/adjunct tests indicate that the latter option is the correct one.

(124) a.   de stoel   van Rietveld
           the chair   of Rietveld
           'the chair by Rietveld'
     b.   een vleugel   van Steinway
           a grand piano of Steinway
           'a grand piano by Steinway'

I. Obligatoriness of the PP

The fact, illustrated in (125), that the PP can normally be left out without the implication that some designer is involved is a first indication that we are dealing with an adjunct, and not with a complement.

(125) a.   Die stoel zit   niet lekker.
           that chair sits not   nicely
           'That chair is not comfortable.'
     b.   Jan speelt op de vleugel.
           Jan plays   on the grand.piano
           'Jan is playing the grand piano.'

II. Post-copular position of van-*PP*

The fact, illustrated in (126), that the *van*-PP can be used as a predicate in a copular construction without loss of the implication that the referent of the proper noun contained by it is the designer of the object in question again shows that we are dealing with an adjunct PP.

(126) a.   die stoel is van Rietveld
           that chair is of Rietveld
     b.   die vleugel   is van Steinway
           that grand.piano is of Steinway

III. R-pronominalization

The fact, illustrated in (127a), that R-pronominalization is excluded also suggests that we are dealing with an adjunct, but we must be careful in this case given that

R-pronominalization is never very felicitous when the complement of the preposition is a [+HUMAN] noun phrase. However, since the pronominal PP cannot be used to refer to, say, a designer studio either, we may safely conclude that this test again shows that we are dealing with a PP-adjunct.

(127) a. *De stoel ervan is erg populair.
          the chair of.it   is very popular
      b. *die vleugel ervan   wordt vaak gebruikt in concertzalen
          that grand.piano of.it is   often used   in concert halls

IV. Extraction of the PP

The examples in (128) suggest that it is possible to extract the PP from the noun phrase, which seems to go against the results of the other tests. However, given that the PP must be assigned contrastive accent, we may be dealing with an independent, restrictive adverbial phrase. So, all in all, the tests seem to indicate that the *van*-PPs in (124) are adjuncts.

(128) a. Van RIETVELD/$^{??}$Rietveld is de stoel erg populair.
          of Rietveld   is the chair   very popular
      b. Van STEINWAY/$^{??}$Steinway   is de vleugel   onovertroffen.
          of Steinway   is the grand.piano unsurpassed

2.2.1.7. Conclusion

The differences between complement and adjunct PPs with respect to the four tests discussed in this section are summarized in Table 2. It is clear that the first three tests give the clearest results. The PP-extraction test, on the other hand, is more problematic: given that we have seen that many apparent cases of extraction may actually involve an independent adverbial phrase, it will be clear that this test must be applied with care and that we certainly should not jump to conclusions on the basis of its results.

Table 2: The distinction between complements and adjuncts

		VAN-PPs	
		COMPLEMENTS	ADJUNCTS
Test 1: PP obligatory		+	—
Test 2: Post-copular position		—	+
Test 3: R-pronominalization		+	—
Test 4: Extraction	Test 4A: Topicalization	+	—
	Test 4B: Relativization/questioning	+	—
	Test 4C: PP-over-V	?	??
	Test 4D: Scrambling	?	—

2.2.2. Relational nouns

This section deals with so-called relational nouns, that is, nouns that require the presence of an argument in order to become complete referential constituents. Section 2.2.2.1 starts by showing that this argument can be realized either by a

postnominal *van*-PP or a prenominal genitive noun phrase/possessive pronoun. Section 2.2.2.2 distinguishes a number of different types of relational nouns. The difference between relational and non-relational nouns is briefly discussed in Section 2.2.2.3. Finally, Section 2.2.2.4 will apply the complement/adjunct tests from Section 2.2.1 and show that the postnominal *van*-PP and prenominal genitive noun phrase/possessive pronoun should indeed be considered an argument of the relational noun, and not an adjunct.

2.2.2.1. Form and position of the argument

The distinction between relational and non-relational nouns is generally assumed to apply to the class of basic (non-derived) nouns. Relational nouns seem to require or, at least, imply a complement, inasmuch as they can only be meaningfully interpreted in relation to some other entity. Thus, ordinarily speaking, one cannot meaningfully refer to a father without including a reference to one or more children; nor can one refer to a body part like a head without relating the object to its possessor. In the former case, the relation is one of kinship, and in the latter we are dealing with a "part-of" relationship. In either case, the relationship is "inherent": the nouns *vader* 'father' and *hoofd* 'head' denote INALIENABLY POSSESSED entities (Fillmore 1968). The entity related to the head noun will be called the RELATED ARGUMENT. Like verbs, relational nouns will be represented in the lexicon with an argument frame, with an empty slot for the related argument. The syntactic frame for the noun *vader* 'father' is given in (129). As can be seen from this representation, related arguments occur either in postnominal position in the form of a *van*-PP, as in (129a), or in prenominal position when they are realized as a genitive noun phrase or a possessive pronoun, as in (129b).

(129)   VADER$_N$ (<u>Ref</u>, Rel)
     a.   ___ [$_{PP}$ *van* ...]$_{Rel}$:   de vader van Jan
                           the father of Jan
     b.   pronoun/NP-*s*$_{Rel}$ ___: zijn/Jans vader
                            his/Jan's father

    From the above it can be inferred that relational nouns can have only one internal argument, which, on the whole, seems indeed to be the case. Thus, as illustrated in example (130a), one and the same relational noun cannot be complemented by both a prenominal possessive pronoun/genitive noun phrase and a postnominal *van*-PP, even if the head noun is semantically related to both entities. To express such a relation a *van*-PP with two coordinated noun phrases must be used, or a possessive pronoun (or, marginally, a genitive noun phrase) referring to both entities, as in (130b&c).

(130) a. *Jans/*zijn vader van Marie
          Jan's/his   father of Marie
      b. de vader   [van Jan en Marie]
          the father of Jan and Marie
      c. hun/$^{??}$[Jan en Marie]'s vader
          their/Jan and Marie's   father

Potential counterexamples to the claim that relational nouns take at most one argument are nouns that denote a time interval or a path, which can be followed by two PPs denoting the starting and the endpoint of the interval/path, respectively. However, neither of these PPs is obligatory, as long as one of them is expressed, which may suggest that we are actually dealing with a single argument position defining a time interval or a path. This time interval or path may be fully specified (giving both the starting and the endpoint), or partially unspecified (giving only the starting or the endpoint).

(131) a.　de periode van Kerst　　　tot Nieuwjaar
　　　　　 the period from Christmas to New Year's day
　　 a′.　de periode *(van Kerst/tot Nieuwjaar)
　　 b.　 de route   van Amsterdam　　naar Tilburg
　　　　　 the route from Amsterdam　 to Tilburg
　　 b′.　de route *(van Amsterdam/naar Tilburg)

2.2.2.2. Types of relational nouns

Relational nouns can be subdivided in at least two ways. The first way is to look at the referential properties of the noun phrase they head: in some cases the referent of the relational noun is uniquely identified by virtue of its relation to its related argument, whereas in other cases it is not. The second way is to consider the type of denotation of the noun itself. We will discuss these in the next two subsections.

I. Referential properties of the noun phrase

The referents of relational nouns can often be uniquely identified by virtue of their relation to their related argument. This is especially true when the related argument stands in a one-to-one relationship with the relational noun, as in the examples in (132): normally speaking, a person has only a single father, an object has only a single form, and a house has just a single roof. The result of this is that in many cases noun phrases headed by a relational noun cannot take the form of an indefinite noun phrase.

(132) a.　de vader　 van Jan　　　　　　 a′. [#]een vader van Jan
　　　　　 the father   of Jan　　　　　　　　　 a father of Jan
　　　　　 'Jan's father'
　　 b.　 de vorm　 van de berg　　　　 b′. [#]een vorm van de berg
　　　　　 the shape of the mountain　　　　　　 a shape of the mountain
　　 c.　 het dak　 van het huis　　　　 c′. [#]een dak van het huis
　　　　　 the roof of the house　　　　　　　　 a roof of the house

This does not hold, however, when the related argument stands in a one-to-many relationship with the relational noun: (133a) can be used when the speaker knows that Jan has more than one brother; in all other cases, the speaker will use (133b). Note that the fact that the related argument is not sufficient to uniquely identify the referent of the noun phrase in (133a) does not mean that the PP is an adjunct, as is clear from the fact that it cannot be dropped.

(133) a. Hij   is een broer *(van Jan).
          he   is a brother   of Jan
      b. Hij   is de broer   *(van Jan).
          he   is the brother   of Jan

II. Semantic subclasses

There are various types of relational nouns. Here we will give examples of various nominal types that exhibit the property that they normally take a related argument. The list is not intended as exhaustive, and only aims at giving an impression of the type or relationships that may be involved.

A. Kinship nouns

Kinship nouns are typical examples of relational nouns: example (134a) is odd because there is no mention of a relational argument. Addition of such an entity in the form of a genitive noun phrase or a PP-complement, as in (134b), renders the sentences acceptable; see Section 2.2.2.4 for further discussion.

(134) a. ??Ik zag   een/de vader (in het park).
          I   saw   a/the father   in the park
      b. Ik   zag   Jans vader/de vader van Jan.
          I   saw   Jan's father/the father of Jan

B. Body parts

Body part nouns like *hoofd* 'head' and *neus* 'nose' also typically take a related argument: the primed examples in (135) are odd because the inalienable possessor is not mentioned. Of course, example (135b′) is possible but not under the intended inalienable possession reading: the noun *neus* 'nose' no longer functions as a relational noun, but as an ordinary noun, with the result that the noun phrase refers to someone else's nose.

(135) a. Jan heeft pijn in zijn hoofd   a′. *Jan heeft pijn in een hoofd.
          Jan has   pain in his head   Jan has   pain in a head
          'Jan has a headache.'
      b. Peter brak   zijn neus.   b′. #Peter brak   een neus
          Peter broke his nose   Peter broke   a nose

The impossibility of the indefinite article in the primed examples in (135) is due to the unique relation between the relational noun and inalienable possessor, in the sense that the possessor has only one head/nose, so that the referent of the noun phrase can be inferred from the identity of the possessor. For the same reason the indefinite article is excluded in the examples in (136).

(136) a. het/*een hoofd   van Jan
          the/a   head   of Jan
      b. de/*een neus   van Peter
          the/a   nose   of Peter

In cases where the relation is non-unique, as in the pair *arm* 'arm' and *Jan* in (137), the indefinite article can be used. Note, however, that despite the non-uniqueness of

the relation, the possessive pronoun or definite article can also be used when it is not known, or when it is immaterial, whether we are dealing with Jan's left or right arm.

(137) a.   Jan heeft zijn/een arm gebroken.
        Jan has   his/an arm   broken
     b.   De/een arm van Jan is gebroken.
        the/an arm of Jan   is broken

For completeness' sake, we want to show that in constructions like (135a), the relational argument can also co-occur with the definite article; the construction in (138a) is fully acceptable under the same inalienable possession reading as (135a). This reading only arises, however, when the inalienably possessed noun phrase is the complement of a locational PP, which is clear from the fact that, in most varieties of Dutch, (138b) is only possible under the non-inalienable possession reading. The use of the number sign means to indicate that in certain eastern and southern dialects an inalienable possession reading of (138b) is possible, but then the example is construed as a semi-copular construction with the meaning "Jan's nose is broken".

(138) a.   Ik heb   pijn in het hoofd.
        I   have pain in the head
        'I have a headache.'
     b.   [#]Jan heeft de neus   gebroken.
        Jan has   the nose broken

C. Nouns denoting physical properties

There are more relations that can be characterized as "inherent" than the two discussed above. For instance, all concrete objects have shape, size, weight, sides, and so forth. Although it can neither be said that concrete objects "possess" these properties nor that these properties are "part of" these objects, the relationship between them is certainly "inherent". Not surprisingly, then, these nouns exhibit the same behavior as the nouns above: like the relational noun *vader* 'father' in (134) or the inalienable possessed noun *hoofd* 'head' in (135), the noun *vorm* 'shape' in (139a) cannot be used in isolation from some related argument. As soon as a suitable related argument is added, as in (139b), the sentence becomes acceptable. Note that the noun phrase in (139b) is introduced by the definite article; again, this is possible thanks to the unique relation between relational nouns and their related arguments, which enables us to infer the referents of the former from the referents of the latter.

(139) a. $^{??}$Ik zag een/de vorm.
        I   saw a/the shape
     b.   Ik zag de vorm van de berg.
        I   saw the shape of the mountain

D. Nouns denoting entities that stand in a part-whole relation with other entities

Another relation that counts as "inherent" is the part-whole relation between the denotations of the nouns *kaft* 'cover' and *boek* 'book', or *dak* 'roof' and *gebouw*

'building': example (140) shows that these nouns behave just like the inalienable possessed noun *hoofd* 'head' in (135).

(140) a. ^{??}Ik zag een/de kaft.
          I   saw a/the cover
    b.   De kaft van het boek was knalgeel.
        the cover of the book was canary yellow

2.2.2.3. Differences between relational and non-relational nouns

Non-relational nouns can be distinguished from relational nouns by the fact that they always allow a non-related interpretation, so that they need not be combined with a *van*-PP or a genitive noun phrase/possessive pronoun.

(141) a. Ik ontmoette de vader/broer   *(van Jan).
        I   met   the father/brother   of Jan
    b. Ik zag de fiets   (van Jan).
        I   saw the bike   of Jan

Furthermore, non-relational nouns differ from the relational nouns that are uniquely identified by their related argument in that an indefinite interpretation is readily possible; in fact, it is the default interpretation when the noun is unmodified. Compare, in this respect, the primeless examples in (142), headed by the non-relational nouns *fiets* 'bicycle', *horloge* 'watch', and *appel* 'apple', to the examples in (132) and (133). One way of accounting for this difference is by analyzing the *van*-PPs of the relational nouns as complements and those of the non-relational nouns in the primed examples in (142) as optional adjuncts of the head noun; the discussion in Section 2.2.2.4 will show that the complement/adjunct tests support this distinction.

(142) a. Ik zag een fiets.   a′. de fiets   van mijn broer
        I   saw a bike   the bicycle of my brother
        'I saw a bike.'   'my brother's bicycle'
    b. Hij kocht   een horloge.   b′. het horloge van goud
        he   bought a watch   the watch   of gold
        'He bought a watch.'   'the golden watch'
    c. Ik eet een appel.   c′. de appel   aan de boom
        I   eat an apple   the apple   on the tree
        'I am eating an apple.'   'the apple in the tree'

2.2.2.4. Application of the complement/adjunct tests

If the assumption put forward in Section 2.2.2.3 that the *van*-PPs of relational nouns are complements is correct, they may also be expected to behave syntactically as complements. The four tests given in Section 2.2.1 provide the means to establish the correctness of such an analysis.

I. Obligatoriness of PP

The semantics of relational nouns normally requires the presence of an argument; cf. see also Section 1.2.3. Consider in this respect the sentences in example (143).

Generally speaking, the primeless examples are not felicitous, as the nouns *vader* 'father' and *kaft* 'cover' require a related argument. It is through the relation with this complement that its meaning can be established. This is illustrated in the primed examples.

(143) a.   *?Els heeft een vader ontmoet.
             Els   has   a father   met
             'Els has met a father.'
    a′. Els heeft de vader   #(van Jan) ontmoet.
             Els   has   the father   of Jan   met
    b.   *?Jan heeft een kaft gescheurd.
           Jan   has   a cover torn
           'Jan has torn a cover.'
    b′. Jan heeft de kaft   #(van dit boek) gescheurd.
            Jan   has   the cover of this book   torn

There are however circumstances in which relational nouns can be felicitously used without a related argument, which we will discuss below.

A. Recoverability from the context

Examples like (143a′&b′) are acceptable when the intended related argument can be inferred from the (linguistic or extra-linguistic) context. This means that the related entity of a relational noun need not take the form of a complement. Example (134a), repeated here as (144a), is rendered acceptable by the addition of the adjunct PP *met zijn zoontje* 'with his little son' in (144b). This shows that the complement (*van*-PP or genitive noun phrase) can be left implicit when the related argument is recoverable from the context.

(144) a.   ??Ik zag een/de vader (in het park).
             I   saw a/the father   in the park
    b.   Ik zag een vader met zijn zoontje.
          I   saw a father   with his son$_{dim}$
          'I saw a father with his little son.'

The same thing is shown in (145). The complement of the nouns *vorm* or *kaft* expressing the related argument need not be present, since the related entity can be recovered from the preceding sentence.

(145) a.   Ik zag een berg.   De vorm was opvallend.
          I saw a mountain the form was remarkable
    b.   Ik kocht een boek. De kaft   was knalgeel.
          I bought a book   The cover was canary.yellow

The examples in (145) also show that the existence of a generally accepted (and expected) close association between two entities makes it possible for a definite article to precede a relational noun, even if the referent of the noun phrase has not been previously introduced into the discourse. Reference to the related entity of the relational noun will be sufficient to ensure identification of the noun phrase. More examples illustrating the same point are given in (146).

(146) a. Ik zag een raar huis.   Het dak had de vorm van een puntmuts.
           I saw a strange house. the roof had the shape of a pointed.hat
           'I saw a strange house. The roof had the shape of a pointed hat.'
       b. Ik zag een auto. De voorkant was zwaar beschadigd.
           I saw a car   the front   was badly damaged

In the case of kinship relations and body parts, however, the use of a possessive determiner is often preferred in such cases, as shown by example (147). Note that in (147a) the definite article is less acceptable when we know the girl (and her father), which explains why in (147a′) the definite article is not acceptable. With body parts, like *neus* 'nose' in examples (147b&b′), the use of the definite article is odd in either context. See Section 5.1 for a more detailed discussion of the role of the definite and indefinite article in determining reference.

(147) a.   Ik zag een meisje spelen. Haar/De vader   stond naast haar.
            I saw a girl play   her/the father   stood next to her
            'I saw a girl play. Her/the father was standing by her side.'
      a′.   Ik zag Marie gisteren.   Haar/*De vader   was bij haar.
            I saw Marie yesterday   her/the father   was with her
      b.   Ik zag een meisje spelen. Haar/*De neus   was gebroken.
            I   saw a girl   play   her/the nose   was broken
      b′.   Ik zag Marie gisteren.   Haar/*De neus   was gebroken.
            I   saw Marie yesterday her nose/the nose was broken

B. Establishing or denying the existence of a relationship

Related to the previous case is the fact that the related argument can be omitted in clauses in which the relationship between a relational noun and a related argument is established or explicitly denied.

(148) a.   Jan heeft een broer
            Jan has   a brother
      b.   Jan heeft geen broer
            Jan has   no brother

Examples like (148) are less common when the related argument stands in a one-to-one relationship with the relational noun: examples like (149a) are impossible, and examples like (149b&b′) carry an additional implication, namely that Jan's father still lives/has died.

(149) a.   *?Jan heeft een vader
            Jan has a father
      b.   Jan heeft nog steeds een vader.
            Jan has   still   a father
            'Jan's father is still alive.'
      b′.   Jan heeft geen vader (meer).
            Jan has   no father   anymore
            'Jan's father died.'

In generic contexts like (150), on the other hand, relational nouns like *vader* 'father' are fully acceptable without the related argument, due to the fact that examples like these express that the implied related argument stands in this unique relationship with the relational noun.

(150) a. Iedereen heeft een vader.
          everyone has   a father
    b. Honden hebben staarten.
          dogs   have   tails

C. Restrictive modifiers and exclamation

Examples like (149a) can be made acceptable by adding information to the relational noun phrase, which is not implied by the noun. Restrictive modification, for example, renders these non-prototypical uses meaningful by adding meaning that does not form an inherent part of the basic meaning of the noun. This is illustrated in the examples in (151).

(151) a. Jan heeft een aardige vader.
          Jan has   a nice father
    b. Jan heeft een vader om   trots   op te zijn.
          Jan has   a father   COMP proud of to be
          'Jan has a father to be proud of.'
    c. Ik heb   een zeer hoofd/een hoofd als een biet.
          I   have a sore head/a head like a beet
          'My head hurts.'/'My head is as red as a beet.'

Using an exclamative intonation contour has a similar effect, even when the noun is not modified. This is due to the fact that the exclamative contour has a similar modifying function as the restrictive modifiers in (151): examples like (152a&b) express that the object has some remarkable characteristic; example (152c) seems to be fully lexicalized.

(152) a. Jan heeft een vader!
          Jan has   a father
          'Jan has an awfully nice father/a father who is a rogue/...'
    b. Jan heeft een neus!
          Jan has   a nose
          'Jan has a very large/beautiful/... nose.'
    c. Ik heb   een hoofd!
          I   have a head
          'I've got a terrifying headache.'

Slightly different cases are given in (153), where the modifier seems to indicate that the referents of the noun phrases headed by *vorm* 'shape' and *kaft* 'cover' are not identified by virtue of their relation with some uniquely related argument, but are taken from the sets of remarkable shapes and canary-yellow covers, respectively. In these examples, the relational aspect of the noun seems to have disappeared, and the nouns behave in the same way as non-relational nouns; the use of the indefinite article signals the fact that the speaker is introducing a "new" entity

into the domain of discourse, the reference of which cannot be inferred from the mention of a related argument in the preceding discourse.

(153) a. Ik zag een vorm die uiterst opvallend was.
           I   saw a form that extremely remarkable was
           'I saw a shape that was extremely remarkable.'
      a′. Ik zag een opvallende vorm.
           I   saw a remarkable shape
      b. Ik zag een kaft die knalgeel was.
           I   saw a cover that canary.yellow was
           'I saw a cover that was canary yellow.'
      b′. Ik zag een knalgele kaft.
           I   saw a canary.yellow cover

D. Predicatively used relational nouns

Example (154), finally, shows that relational nouns can also occur without complement when used in predicative position.

(154) a. Dat is een neus.
           that is a nose
      b. Jans vader is (een) directeur.
           Jan's father is a director

II. Occurrence of the PP in postcopular predicative position

According to the second test, only adjunct *van*-PPs can occur in postcopular predicative position; complement *van*-PPs or PPs with other prepositions lead to unacceptable results in this position. The examples in (155) seem to support this claim. In (155a&b), for instance, the PPs *van Jan* 'of Jan' and *van het gebouw* 'of the building' are related arguments of the relational nouns *vader* 'father' and *dak* 'roof', respectively. As predicted, the PPs in these examples cannot occur in postcopular position (De Wit 1997).

(155) a. de vader   van Jan   a′. *De vader   is van Jan.
           the father   of Jan   the father is of Jan
      b. het dak van het gebouw   b′. *Het dak is van het gebouw
           the roof of   the building   the roof is of the building
      c. de hoogte van het gebouw   c′. *De hoogte is van het gebouw
           the height of the building   the height is of the building

III. R-pronominalization

The R-pronominalization test also suggests that the *van*-PPs following relational nouns behave like complements; in (156) the noun phrases functioning as direct objects contain a relational head, and R-pronominalization of the *van*-PPs is possible. Note that (156) only contains constructions with the unsplit form *er ... P*; for a discussion of the split form, see Section 2.2.1.4.

(156) a.   Ik heb   het dak   van het gebouw/ervan   gerepareerd.
        I   have   the roof of the building/of.it   repaired
        'I have repaired the roof of the building.'
    b.   Ik heb   de voorkant van de auto/ervan gewassen.
        I   have the front   of the car/of.it   washed
        'I have washed the front of the car.'
    c.   Ik herkende   de vorm   van de berg/ervan.
        I   recognized the shape of the mountain/of.it

IV. Extraction of PP

It appears that certain forms of PP-extraction are indeed possible with relational nouns, but not with non-relational nouns, regardless of the preposition heading the adjunct PP (De Haan 1979). The examples in (157) show that, where the head noun is relational, topicalization of the PP is possible.

(157)   • Test 4A: Topicalization
    a.   Ik heb   de vader   van Jan gezien (en de moeder van Peter).
        I   have the father of Jan   seen   and the mother of Peter
        'I have seen Jan's father (and Peter's mother).'
    a′. Van Jan heb ik de vader gezien.
    b.   Ik heb   de kaft   van het boek gescheurd.
        I   have the cover of the book   torn
        'I have torn the cover of the book.'
    b′. Van dat boek heb   ik de kaft   gescheurd.
        of that book   have I   the cover torn

The same thing holds for relativization and questioning as is shown in, respectively, the primeless and primed examples in (158).

(158)   • Test 4B: Relativization and questioning
    a.   de man van wie ik de vader   heb   gezien
        the man of who I   the father have seen
    a′. Van wie heb jij   de vader   gezien?
        of who   have you the father seen
    b.   het boek waarvan ik de kaft   heb   gescheurd
        the book of.which I   the cover have torn
    b′. Van welk boek heb jij   de kaft   gescheurd?
        of which book have you the cover torn

As illustrated in examples (159) and (160), the *van*-PPs of relational nouns also allow PP-over-V and scrambling.

(159)   • Test 4C: PP-over-V
    a.   Ik heb   de vader   gezien van Jan (en de moeder van Peter).
        I   have the father seen   of Jan   and the mother of Peter
        'I have seen Jan's father (and Peter's mother).'
    b.   Marie heeft de kaft   ontworpen   van dat boek.
        Marie has   the cover designed   of that book
        'Marie designed the cover of that book.'

(160)   • Test 4D: Scrambling
   a.   Ik   heb   van Jan gisteren   de vader gezien (en van Peter de moeder).
        I   have of Jan   yesterday   the father   seen   and of Peter the mother
        'I saw Jan's father yesterday (and Peter's mother).'
   b.   Marie heeft van dat boek vorige week de kaft   ontworpen.
        Marie has   of that book last week   the cover designed
        'Marie designed the cover of that book last week.'

V. Conclusion

Table 3 summarizes the results of the four tests for the arguments of relational nouns. The third column indicates whether the results provide evidence for or against the assumption that we are dealing with complements of the relational noun. The positive results suggest that we may safely conclude that the arguments of relational nouns do indeed behave as complements to the noun. Naturally, the discussion here is restricted to the most general cases. For exceptions to the tests, see the discussion in Section 2.2.1.

Table 3: Complements of relational nouns: outcome of Tests 1-4

Test 1: PP obligatory	+	positive
Test 2: Post-copular position	—	positive
Test 3: R-pronominalization	+	positive
Test 4A: Topicalization	+	positive
Test 4B: Relativization/questioning	+	
Test 4C: PP-over-V	+	
Test 4D: Scrambling	+	

2.2.3. Deverbal nouns

Some nouns seem to behave formally and syntactically like relational nouns, the only difference being that whereas relational nouns are non-derived, these nouns are derived from either verbs or adjectives. The present section is devoted to a discussion of the various types of deverbal nouns; deadjectival nouns are treated in Section 2.2.4. Like relational nouns, deverbal nouns take arguments in the form of a postnominal PP or a prenominal genitive noun phrase/possessive pronoun. These arguments may be said to be inherited from the input verb. The derived noun *maker* 'maker' in (161a), for instance, requires the explicit or implicit reference to an object that has been or is being made, in this case *dit kunstwerk* 'this work of art'. Similarly, the noun *verwoesting* 'destruction' in (161b) requires a reference to the theme of the action, in this case *de stad* 'the city'.

(161) a.   Wie is de maker van dit kunstwerk?
           who is the maker of this work.of.art
      b.   De verwoesting   van de stad veroorzaakte grote paniek.
           the destruction   of the city   caused   great panic

Deverbal nouns can be divided on the basis of their form and their behavior into the four classes given in Table 4. The mentioned affixes are the ones that are most

commonly used in the derivation of the relevant classes, but these classes may also contain items that are derived by means of other affixes; see 1.3 for an overview of the alternative/irregular forms each of these types of nominalization can take.

Table 4: A syntactic classification of deverbal nouns

TYPE OF DEVERBAL NOUN		EXAMPLES	SECTION
Agentive ER-nominalizations		*maker* 'maker' *jager* 'hunter' *bewonderaar* 'admirer'	2.2.3.1
INF-nominalizations	Bare nominal infinitives (BARE-INF)	*maken* 'making' *bewonderen* 'admiring' *jagen* 'hunting'	2.2.3.2
	Nominal Infinitives with a determiner (DET-INF)	*het maken* 'the making' *het bewonderen* 'the admiring' *het jagen* 'the hunting'	
ING-nominalizations		*vernietiging* 'destruction' *mededeling* 'announcement' *bewondering* 'admiration'	2.2.3.3
GE-nominalizations		*gejaag* 'hunting' *gezeur* 'nagging' *getreiter* 'bullying'	2.2.3.4

The sections devoted to the different types of deverbal noun distinguished in Table 4 all have the same overall structure. The main topic of each section is complementation: we will supply a discussion of the form and the syntactic behavior of the complements of deverbal nouns. This discussion is structured according to the type of input verb (intransitive, unaccusative, transitive, etc.) and the number of explicitly expressed arguments of the deverbal noun. Only those verbs that actually can be used as input for the derivation of the noun in question will be discussed; see 1.3.1 for a discussion of the restrictions on the relevant derivational processes.

2.2.3.1. Agentive ER-nominalizations

This section discusses complementation of agentive ER-nouns. Section 2.2.3.1.1 will first show that the internal arguments of the input verb must be realized as a postnominal PP in the °projection of the derived ER-noun, and Section 2.2.3.1.2 will show by means of the four adjunct/complement tests discussed in Section 2.2.1 that these PPs must be seen as arguments of the noun.

2.2.3.1.1. Complementation

This section discusses complementation of the most productive forms of agentive ER-nominalization given in (162). We restrict ourselves to agentive ER-nouns, since we have seen in Section 1.3.1.5.3 that non-agentive ER-nouns do not inherit the arguments of the input verb, and may therefore be considered lexicalized.

(162) • Main types of agentive ER-nouns
   a. Intransitive verb: *zwemmer* 'swimmer'
   b. Transitive verb: *maker* 'maker'
   c. Ditransitive verb: *verteller* 'narrator'
   d. Verb with a prepositional complement: *klager* 'complainer'
   e. Verb with an optional complementive: *schilder* 'painter'

I. ER-nominalization of intransitive verbs

The agent argument of the input verb is not realized as a complement of the deverbal noun, but represented by the suffix *-er* of the noun; the derived verb actually denotes the agent of the input verb. As a result of this, ER-nouns derived from intransitive verbs like *zwemmen* 'to swim', do not select any PP-complement.

II. ER-nominalization of transitive verbs

When the ER-noun is derived from a transitive verb, the theme argument must be present, either explicitly or implicitly. Thus in the examples in (163), the theme arguments, which are realized as *van*-PPs, can be left out only when their referents are contextually recoverable.

(163) a. Jan is de maker   van dit kunstwerk.
          Jan is the maker of this work.of.art
      b. Peter is de organisator   van het toernooi.
          Peter is the organizer   of the tournament
      c. Die ontwikkelaar van software is een kennis van mij.
          that developer   of software   is an acquaintance of me

Theme arguments within the nominal domain typically appear postnominally in the form of a *van*-PP, but [+HUMAN] themes may sometimes also appear prenominally as a possessive pronoun or genitive noun phrase; see Section 5.2.2 for a detailed discussion of the restrictions on this option. Note in passing that the prenominal position is not available for inherited PP-complements with the thematic role of theme, as shown by the (b)-examples in (164).

(164) a. Hij heeft Jan$_{Theme}$ ontdekt.
          he   has   Jan   discovered
      a′. Jans/zijn$_{Theme}$ ontdekker
           Jan's/his   discoverer
      b. Wij geloven in onze leiders$_{Theme}$.
          we   believe in our leaders
      b′. *hun$_{Theme}$ gelovers
           their   believers

That the prenominal elements are indeed the theme arguments can also be shown by the fact that they cannot co-occur with a *van*-PP fulfilling the same function: examples like (165) only allow a possessive interpretation for *Jans* and *mijn* 'my'.

(165) a. *Jans_{Theme} ontdekker van Amerika_{Theme}
        Jan's   discoverer of America
    b. *mijn_{Theme} bewonderaars van Picasso_{Theme}
        my   admirers   of Picasso

Note that simple person nouns behave in precisely the same manner as ER-nouns derived from a transitive verb, provided that the semantic relation between the head noun and its complement is similar to that holding between the verb and its complement. Often these nouns are (near-)synonyms of derived deverbal nouns as is shown for *auteur* 'author' and *schrijver* 'writer' in (166a), and *architect* 'architect' and *ontwerper* 'designer' in (166b).

(166) a. Ik ken   de auteur/schrijver van dit boek.
        I   know the author/writer   of this book
    b. Hij is de architect/ontwerper van dat gebouw.
        he   is the architect/designer   of that building

Since the nouns *auteur* and *architect* in (166) are not derived, these similarities cannot be accounted for in terms of inheritance: we are simply dealing here with relational nouns. The inherent relation between the noun and its related argument therefore finds its origin in the meaning of the noun itself; cf. Section 2.2.2.

III. ER-nominalization of ditransitive verbs

The examples in (167) show that constructions with ditransitive verbs can normally take two forms: one with the recipient appearing as a noun phrase, which normally precedes the theme, and one with the recipient taking the form of an *aan*-PP, which generally follows the theme.

(167) a. Peter schenkt het museum_{Rec} een Van Gogh_{Theme}.
        Peter donates   the museum   a Van Gogh
    a′. Peter schenkt   een Van Gogh_{Theme} aan het museum_{Rec}.
        Peter donates   a Van Gogh   to the museum
    b. Els vertelt haar vrienden_{Rec} sterke verhalen_{Theme}.
        Els tells   her friends   strong stories
        'Els is telling her friends tall stories.'
    b′. Els vertelt sterke verhalen_{Theme} aan haar vrienden_{Rec}.
        Els tells   strong stories   to her friends

The theme argument of the corresponding ER-noun cannot be expressed prenominally in the form of a prenominal possessive pronoun or genitive noun phrase, but appears as an obligatory postnominal *van*-PP. This may be related to the fact that the theme of a ditransitive verb is normally inanimate, but even if the theme is [+HUMAN], as in (168), prenominal realization of the theme is excluded.

(168) a. Peter stelde   Jan aan Marie voor
        Peter introduced Jan to Marie   prt.
        'Peter introduces Jan to Marie.'
    b. *Jans/zijn voorsteller aan Marie
        Jan's/his introducer   to Marie

The recipient argument of the ER-noun is realized as an *aan*-PP, and can normally be left out, just like the recipient in the corresponding verbal construction; in fact, constructions with a realized theme feel somewhat heavy, and there is some preference to not realize the recipient.

(169) a. de schenker   van een Van Gogh$_{Theme}$ $^?$(aan het museum$_{Rec}$)
           the contributor of a Van Gogh   to the museum
      b. de vertelster   van sterke verhalen$_{Theme}$ $^?$(aan haar vrienden$_{Rec}$)
           the teller$_{fem}$ of strong stories   to her friends

Although recipient arguments are typically [+HUMAN], they never appear as a prenominal genitive noun phrase/possessive pronoun. The following constructions, headed by ER-nouns derived from ditransitive verbs, are therefore ungrammatical.

(170) a. *zijn$_{Rec}$ schenker   (van geld$_{Theme}$)
            his   contributor   of money
      b. *zijn$_{Rec}$ vertelster (van sterke verhalen$_{Theme}$)
            his   teller$_{fem}$ of strong stories
      c. *hun$_{Rec}$ betaler van een goed loon$_{Theme}$
            their   payer   of good wages

A potential problem for the claim that recipient arguments must be realized as *aan*-PPs is that the noun *donateur* seems to occur with a recipient expressed by a *van*-PP or a possessive pronoun: *Jan is donateur van onze voetbalclub* 'Jan is contributor to our football club'; *onze donateurs* 'our contributors'. This may, however, only be apparent given that the *van*-PP functions rather as an adjunct with the role of possessor. In fact, the relation is one of pseudo-possession: although it is possible to say *De club heeft donateurs* 'The club has contributors', the verb *hebben* 'to have' cannot be replaced by the lexically more specific verb *bezitten* 'to own', which is possible in prototypical cases of possession: *Jan heeft/bezit een fiets* 'Jans has/owns a bike'. This may also explain why the construction does not pass the second adjunct/complement test (*De donateur is van de voetbalvereniging*) as occurrence of the *van*-PP in postcopular predicative position requires a true possessor relation.

For the sake of completeness it needs to be mentioned that, although at first sight the ditransitive verb *betalen* 'to pay' seems to have the same argument structure as other ditransitive verbs, there is a difference with regard to complementation, which also affects the form of the complement of the derived ER-noun *betaler*. First, the examples in (171) show that, as with all (di-)transitive verbs, passivization is possible with the theme being assigned nominative case, as in (171b), and that the theme can be premodified by the past participle, as in (171c).

(171) a. Het bedrijf   betaalt dit loon   aan de werknemers.
           the company pays   these wages to the employees
      b. Dit loon   wordt (aan) de werknemers betaald.
           these wages   are   to the employees   paid
      c. het (aan de werknemers) betaalde loon
           the to the employees   paid   wages

However, the examples in (172) show that, in the absence of the theme *dit loon* 'these wages', it is also possible to promote the recipient to subject in the passive construction and to have the recipient argument premodified by the participle. In other words, the recipient acts as a regular direct object in (172).

(172) a. Het bedrijf   betaalt de werknemers.
          the company pays   the employees
      b. De werknemers   worden betaald.
          the employees   are   paid
      c. de betaalde werknemers
          the paid employees

The constructions in (172) are perfectly acceptable because the implied theme is fully recoverable: even without further context, the missing theme will be interpreted as the employees' wages. The most likely analysis of the constructions in (171) and (172) is therefore one in which two separate forms of the verb *betalen* are distinguished. The most common form is that of a ditransitive verb, with a theme and a recipient complement, and with the general meaning of "to pay", while alongside there is a less frequent monotransitive form, with only a theme complement, and with the more specific meaning of "paying wages".

  A similar distinction can be discerned with the derived noun *betaler* 'payer' in (173). Example (173a) corresponds in meaning to (171), where the verb is used ditransitively, and the theme and recipient argument are expressed by a *van-* and an *aan*-PP, respectively. Example (173b), on the other hand, corresponds in meaning to (172), where the (apparent) recipient acts as the direct object of the verb, and correspondingly the recipient argument must appear in the form of a *van*-PP; the *aan*-PP is not acceptable in this example.

(173) a. de betaler van het loon (aan de werknemers)
          the payer   of the wages   to the employees
      b. de betaler van/*aan de werknemers
          the payer   of/to the employees

The verb *voeren* 'to feed' behaves in a similar fashion as *betalen*. Accordingly, both the theme and the recipient of the verb can appear in the form of a *van*-PP in the corresponding ER-nominalization, as shown in the primed examples in (174).

(174) a. Jan voert brood aan de eendjes.   a′. de voerder van het brood
          Jan feeds bread   to the ducklings   the feeder of the ducklings
      b. Jan voert de eendjes.   b′. de voerder van/*aan de eendjes
          Jan feed the ducklings   the feeder of the ducklings

IV. ER-nominalization of verbs selecting a PP-theme
Example (175) provides some examples of ER-nouns derived from verbs selecting a PP-theme. Whether or not the presence of the PP is required seems to be determined largely by the behavior of the base verb in this respect: as shown in the primed examples, the verb *lijden* 'to suffer' seems to prefer the presence of a complement, whereas *klagen* 'to complain' can be used very well without one.

(175) a.   De lijder   ^{*?}(aan pleinvrees)   werd door een psychiater behandeld.

(175) a.

De lijder ^{*?}(aan pleinvrees) werd door een psychiater behandeld.
the sufferer from agoraphobia was by a psychiatrist treated
'The sufferer from agoraphobia was treated by a psychiatrist.'

a′. Hij leed gisteren nog ^{*?}(aan pleinvrees).
he suffered yesterday prt from agoraphobia
'He was still suffering from agoraphobia only yesterday.'

b. De klagers (over het oponthoud) werden beleefd te woord gestaan.
the complainers about the delay were politely answered
'The complainers about the long delay were answered politely.'

b′. De reizigers klagen steeds (over het lange oponthoud).
the travelers complain continuously about the long delay
'The travelers are complaining continuously about the long delay.'

The assumption that the presence of the PP-complement is the result of inheritance and as such part of the argument structure of the derived noun is supported by the examples in (176) and (177), where the PPs are adjuncts and not complements of the verb. Since the verb *schilderen* in (176a) is not subcategorized for an instrument-PP, this PP cannot be inherited; example (176b) can therefore only be interpreted as "a painter who does not have any brushes" (in which case the PP is a modifier of the noun), not as "a person who paints without brushes" (where the PP would be an inherited argument).

(176) a. Hij schildert zonder kwasten.
he paints without brushes
b. [#]een schilder zonder kwasten
a painter without brushes

Similarly, the PP *met de trein* 'by train' in (177a) is an adjunct and not a PP-complement of the verb *reizen* 'to travel'; as a result, it cannot appear as the complement of the derived noun *reiziger* 'traveler' in (177b) either.

(177) a. Hij reist met de trein.
he travels with the train
'He travels by train.'
b. *een reiziger met de trein
a traveler with the train

V. ER-nominalization taking a complementive

ER-nominalization is not possible with constructions involving a °complementive. This is illustrated by means of the transitive resultative constructions in example (178). That it is indeed the presence of the predicative adjective that causes the ungrammaticality of the ER-noun is clear from the fact that in (178b) the verb in question can be input to ER-nominalization when the complementive is not present.

(178)   • ER-nouns derived from transitive verbs taking a complementive
a. Els schildert de deur (groen).
Els paints the door green
b. de schilder van de deur *(groen)
the painter of the door green

Example (179) shows that the restriction also applies to intransitive verbs: example (178b) is only acceptable when the predicate is not expressed; the fact that the noun phrase *zijn schoenen* cannot be expressed either in (178b) is due to the fact that it is not an argument of the verb in (178a), but only semantically licensed as the °logical SUBJECT of the complementive; see Section V2.2 for a more detailed discussion of verbs taking a complementive.

(179)   • ER-nouns derived from intransitive verbs taking a complementive
    a.   Jan loopt   (zijn schoenen kapot).
          Jan walks his shoes   worn.out
          'Jan is wearing his shoes out.'
    b.   een loper *(van zijn schoenen kapot)
          a walker   of his shoes   worn.out

VI. Conclusion

This section has discussed the inheritance by agentive ER-nouns of the argument structure of their input verb. Generally speaking, it turns out that the internal arguments of the input verb become complements of the derived noun; the external (agent) argument is not inherited but denoted by the ER-noun itself. This means that, in the case of a transitive base verb, ER-nouns have an argument structure with a slot for a theme argument, which is typically realized as a *van*-PP, or, alternatively, as a possessive pronoun or a genitive noun phrase (with the suffix *-s*) in prenominal position. When the base verb is ditransitive, the recipient argument is (usually optionally) added as a postnominal *aan*-PP. PP-themes can also be inherited, in which case the preposition selected by the input verb is also used in the ER-nominalization. These findings are summarized in Table 5.

Table 5: The form and position of the complements of ER-nominalizations

TYPE OF INPUT VERB	FORM AND POSITION OF THE COMPLEMENT(S)	EXAMPLES
Transitive	ER-noun + *van*-PP$_{Theme}$	*de bewonderaar van Marie* the admirer of Marie
	NP*s*/pronoun$_{Theme}$ + ER-noun	*Maries/haar bewonderaar* Marie's/her admirer
Ditransitive	ER-noun + *van*-PP$_{Theme}$ (+ *aan*-PP$_{Rec}$)	*de gever van het boek* (*aan de kinderen*) the giver of the book to the children
PP-theme	ER-noun + PP$_{Theme}$	*de jager op herten* the hunter of deer

2.2.3.1.2. Application of the complement/adjunct tests

The preceding section has shown that ER-nouns typically combine with PPs that correspond to the arguments of the input verb. However, since in many cases complements and adjuncts are not formally distinguished within the noun phrase, it is conceivable that some of these PPs are adjuncts. This section will therefore apply the four tests that have been proposed in Section 2.2.1 to distinguish complements

and adjuncts within the noun phrase to ER-nominalizations. The results of these tests indicate that the PPs in question should be regarded as complements of the noun.

I. Obligatoriness of PP

Generally speaking, ER-nouns derived from transitive verbs are normally not interpretable without the addition of the inherited theme argument: in (180) the INF-nouns *maker* 'maker' and *bedenker* 'designer' normally require the presence of a theme complement. The double-cross in the primed examples indicates that the theme arguments can be left out in certain contexts, to which we return below.

(180) a. Jan is de maker   van dit kunstwerk.
          Jan is the maker of this work.of.art
     a′. Jan is *een/#de maker.
          Jan is a/the maker
     b.   Peter is de bedenker van dit plan.
          Peter is the designer of this plan
     b′. Peter is *een/#de bedenker.
          Peter is a/the designer

ER-nouns derived from ditransitive verbs inherit both complements of the verb: the noun *schenker* 'donor' in (181) must be related to the theme and the recipient argument in order to be interpretable. Example (181a) shows, however, that just like in the corresponding verbal construction the recipient can often be left implicit. The double-cross in (181b) again indicates that the theme argument can be left out in certain contexts. Example (181c), finally, shows that the theme argument can never be left unexpressed when the recipient is overtly expressed.

(181) a. Els is de schenker van dit grote bedrag (aan onze kerk).
          Els is the donat-or of this large sum   to our church
     b.   Els is *een/#de schenker.
          Els is a/the donat-or
     c.   *Els is de schenker aan onze kerk.

Where the ER-noun is derived from a verb selecting a PP-object, the inherited PP is also obligatory, as illustrated in example (182a&b). An exception is formed by fully lexicalized ER-nouns like *jager* 'hunter' in example (182c).

(182) a. Lijders   *(aan pleinvrees) moeten worden behandeld.
          sufferers from agoraphobia must   be   treated
     b.   Klagers   *(over het lange oponthoud) werden vriendelijk behandeld.
          complainers   about the long delay   were   politely   treated
          'Complainers about the long delay were treated politely.'
     c.   De jagers   (op groot wild) werden door de politie gearresteerd.
          the hunters on big game   were   by the police   arrested
          'The hunters (of big game) were arrested by the police.'

Although the inherited argument must normally be overtly expressed by means of a PP, there are a number of contexts in which the PP-complement can (or even must) be left out. In what follows each of these situations will be briefly discussed.

A. Recoverability from the context

The absence of the argument can be the result of ellipsis. This is possible whenever the referent of the argument can be assumed to be recoverable from the linguistic or non-linguistic context. For example, in (183a) the theme argument of the ER-noun *maker* can be recovered from the preceding sentence and in example (184a) leaving out the *van*-PP will be acceptable when the speaker and the addressee are looking at or discussing a particular painting.

(183) a. Het schilderij wordt daar tentoongesteld. De maker zal aanwezig zijn.
       the painting is   there exhibited   the maker will present be
       'The painting will be exhibited tomorrow. The maker will be present.'

     b. Het toernooi   was een groot succes. De organisator was erg in zijn nopjes.
        the tournament was a big success.   the organizer   was very pleased

     c. Er   is een audioboek van *De avonden*; de verteller is de schrijver zelf.
        there is an audio book of   *De avonden* the teller   is the writer himself

(184) a. Ken jij de maker (van dat schilderij)?
       know you the painter of that painting
       'Do you know the maker (of that painting)?'

     b. Wie is de organisator (van dit toernooi)?
        who is the organizer   of this tournament

B. Generic contexts

Deverbal ER-nouns can occur without an argument when used generically. In that case, there is no specific entity that functions as the theme: although the presence of a theme is still implied, its nature or identity is deemed irrelevant. In (185a), for instance, it is implied that Jan is a giver of something; no indication is given, however, of what this something might be. Likewise, in (185b), the reference is to "whoever oppresses"; the identity of the oppressed is not relevant in the given context.

(185) a. Jan is meer een gever dan een nemer.
       Jan is more a giver   than a taker

     b. Onderdrukkers moeten geboycot worden.
        oppressors   must   boycotted be

C. Habitual contexts

ER-nouns do not take a PP-complement when they are given a habitual interpretation. In this case, the loss of °adicity has probably taken place before the application of ER-nominalization, that is, it is the base verb rather than the ER-noun that has lost its argument. Since in most cases the original, transitive form of the base verb can also be input to the nominalization process, the derived nouns may have to be given two different representations. Examples are verbs like *roken* 'to smoke', *drinken* 'to drink' and *eten* 'to eat', which have both a transitive and a pseudo-intransitive (habitual) form. The transitive verb *roken* in (186a), for instance, denotes an activity and the deverbal noun *roker* in (186a′) has inherited its theme argument. The pseudo-intransitive verb *roken* in (186b), however, has the

meaning "to be in the habit of smoking" and lacks a(n overtly expressed) theme argument; the deverbal noun *roker* in (186b′) can also be assigned this habitual reading provided that there is no *van*-PP present.

(186) a. ROKEN$_V$ (<u>Agent</u>, Theme): Jan rookt altijd sigaren.   [transitive]
            to smoke   Jan smokes always cigars
      a′. ROKER$_N$ (Theme):   Jan is een roker van sigaren.
            smoker   Jan is a smoker of cigars
      b. ROKEN$_V$ (<u>Agent</u>):   Peter rookt.   [pseudo-intransitive]
            to smoke   Peter smokes
      b′. ROKER$_N$:   Peter is een roker.
            smoke   Peter is a smoker

The presence of a restrictive modifier may sometimes facilitate the use of ER-nouns without a theme argument. In most cases, the presence of these modifiers triggers a generic or habitual reading.

(187) a. Jan is een gulle gever.
            Jan is a liberal giver
      b. Marie is een zware roker.
            Marie is a heavy smoker

D . Lexicalized ER-nouns denoting, e.g., a profession or function

Quite a large number of ER-nouns, although originally derived from a transitive verb, are not able to combine with a postnominal *van*-PP. This holds especially for deverbal ER-nouns denoting professions or functions like *bakker* 'baker', *kapper* 'hairdresser', *visser* 'fisher', *verhuizer* 'mover', *naaister* 'seamstress', *schilder* 'painter/decorator', or *aannemer* 'contractor'.

(188) a. Jan bakt   brood.   a′. Jan is bakker   ($^{??}$van brood).
            Jan bakes   bread   Jan is baker   of bread
      b. Marie neemt opdrachten   aan.   b′. Marie is aannemer (*van opdrachten).
            Marie takes   assignments prt.   Marie is contractor   of assignments
      c. Peter kapt Jans haar.   c′. Peter is kapper   (*van Jans haar).
            Peter cuts Jan's hair   Peter is hairdresser   of Jan's hair

The fact that these ER-nouns can no longer be realized with a complement shows that we are not dealing with some form of ellipsis: they are, rather, lexicalized, as a result of which they have lost their argument structure. This is also supported by the fact that they have often gained a specialized meaning and may have lost any direct relation to the base verb. This becomes clear from the fact that sentences (188c&c′) do not have the same meaning. The fact that someone has cut my hair does not make him a hairdresser. Nor does a hairdresser necessarily cut people's hair; he or she may have the qualifications, without actually practicing the profession. Sometimes, however, an ER-noun can either be used as a lexicalized noun or as a derived noun complemented by an inherited argument; this is illustrated by (189) for the ER-noun *vertegenwoordiger* 'salesman'.

(189) a.   Jan is vertegenwoordiger.
            Jan is salesman
            'Jan is a salesman.'
     b.   Jan is de vertegenwoordiger van onze afdeling
            Jan is the representative   of our department

Sometimes, whether a certain ER-noun should be interpreted as a lexicalized or as a derived form depends on the nature of the complement of the *van*-phrase. Despite the fact that the theme argument in (190a) can be either a definite noun phrase (headed by a count noun) or an indefinite phrase (headed by a substance noun), only the former leads to a fully acceptable result: the noun phrase *de bakker van brood* feels as a tautology, which suggests that we are actually dealing with the lexicalized profession noun.

(190) a.   Jan heeft deze broden/brood   gebakken.
            Jan has   these loafs of bread/bread baked
            'Jan has baked this bread.'
     b.   de bakker   van deze broden/$^{??}$brood
            the baker   of these loafs of bread/bread

Some profession nouns are related to transitive verbs that have a pseudo-intransitive (habitual) counterpart. An example is *schilderen* 'to paint' in (191): the transitive form in (191a) simply denotes the action of painting, and has no implications for whether Jan is a decorator or an artist; the intransitive form in (191b), on the other hand, can only mean that Peter is an artist. In contrast to this, the lexicalized ER-noun *schilder* can have both meanings, which is due to the fact that the loss of argument structure has neutralized the difference between the two corresponding verbs.

(191) a.   Jan schildert het huis/een landschap.   [Jan is a decorator/artistic painter]
            Jan paint   the house/a landscape
     b.   Jan schildert   [Jan is an artistic painter]
            Jan paints
     c.   Jan is schilder   [Jan is a decorator/artistic painter]
            Jan is painter

There are also lexicalized ER-nouns derived from ditransitive verbs. This is illustrated in example (192) for the noun *onderwijzer* 'teacher': the theme argument of the input verb cannot be realized as a postnominal *van*-PP. Note that the loss of adicity must have taken place after ER-nominalization, as the input verbs of these nouns do require a theme argument.

(192) a.   Peter onderwijst (de kinderen) wiskunde.
            Peter teaches   the children   mathematics
     b.   *Peter is onderwijzer van wiskunde   (aan deze kinderen).
            Peter is teacher   of mathematics   to these children
            'Peter is a teacher.'

The noun *leraar* 'teacher' behaves more or less like *onderwijzer* 'teacher', but is special in that it can be complemented by means of a nonspecific bare noun expressing the theme argument.

(193) a. Jan leert   (de kinderen) wiskunde.
          Jan teaches the children   mathematics
    b. *Jan is leraar   van wiskunde   (aan deze kinderen).
          Jan is teacher of mathematics to these children
    b′. Jan is leraar wiskunde.
          Jan is teacher mathematics

     The fact that lexicalized ER-nouns cannot be followed by a *van*-PP expressing the theme of the corresponding input verb does not mean that they cannot be modified by a *van*-PP; this is possible if the *van*-PP is interpreted as the possessor and refers to. for example, the baker my parents buy their bread from or even the baker's shop where they buy their bread. That we are dealing with a possessive relation can be supported by the fact that example (194a) is more or less equivalent to (194b); Section 2.2.3.1.1 has shown that recipients can never be realized as a prenominal possessive pronoun or genitive noun phrase. It is also clear from the fact that the *van*-PP can (at least marginally) occur in postcopular position.

(194) a. de bakker   van mijn ouders
          the baker's of my parents
    b. hun/$^?$mijn ouders' bakker
          their/my parents' baker
    c. $^?$Die bakker   is van mijn ouders.
          that baker's is of my parents
          'That is my parents' baker.'

Similarly, although example (195a) will be interpreted as the person teaching Jan a certain subject, we seem again to be dealing with a possessive relation: the proper noun *Jan* may occur as a genitive noun phrase and the PP *van Jan* can occur in postcopular position.

(195) a. de leraar   van Jan$_{\text{Poss}}$/Jans$_{\text{Poss}}$ leraar
          the teacher of Jan/Jan's teacher
    b. Dat is Jans/zijn leraar.
          that is Jan's/his teacher
    c. $^{(?)}$Deze leraar is van Jan$_{\text{Poss}}$.
          this teacher   is of Jan
          'This is Jan's teacher.'

E. Compound ER-nouns (incorporation)

As a general rule, complementation by means of a thematic *van*-PP is not possible once an element has been incorporated into an ER-noun. As will be shown, this is true regardless of the function of this element (as complement or adjunct, theme or non-theme).

1. Incorporation of theme

If a theme argument of an ER-noun has nonspecific reference, it may also be incorporated, in which case it forms a compound with the ER-noun. Examples are such lexicalized forms as *wiskundeleraar* 'math teacher' and *banketbakker* 'confectioner' in (196).

(196) a. wiskundeleraar
            math teacher
       b. banketbakker
            pastry-baker
            'confectioner'

Incorporation of the theme is a very productive mechanism, applying not only to the lexicalized cases in (196) but also to ER-nominalizations in general, and in all these cases, the theme cannot be expressed by means of a *van*-PP. In other words, if a theme argument is incorporated, the syntactic postnominal position is no longer available, which is in keeping with the principle that thematic roles can be assigned only once.

(197) a. televisiekijker   (*van documentaires)
            T.V. watcher   of documentaries
       b. krantenlezer   (*van columns)
            newspaper reader   of columns
       c. marathonloper   (*van lange afstanden)
            marathon runner   of long distances
       d. systeemontwikkelaar (*van software)
            systems developer   of software
       e. aandeelhouder   (*van toegangskaarten)
            stockholder   of admission tickets

These compound nouns may become lexicalized to various degrees, which may be reflected by the fact that some of these compounds can no longer alternate with a construction in which the theme is expressed as an argument. Two examples are given in (198).

(198) a. druktemaker   [cf. *maker van drukte]
            fuss.maker
            'show off/fuss pot'
       b. herrieschopper   [cf. *schopper van herrie]
            row.kicker
            'hellraiser'

Observe that whereas one might argue that the noun *herrieschopper* is straight-forwardly derived from the verb *herrieschoppen* 'to raise hell', this is not readily possible for the noun *druktemaker* given that there is no corresponding verb *drukte-maken* 'to show off', albeit that the second, less common, meaning of "fuss pot" is shared by the idiomatic expression *drukte maken om ...* 'to make a fuss about ...'.

   As in the case of *schilder* in example (176), the postnominal position of ER-nouns with an incorporated theme is not only blocked for theme arguments, but also

for manner and place adjuncts. This is illustrated by the ungrammaticality of the constructions in (199): (199a) cannot be used to refer to the person who makes shoes with a machine, only to the person with a machine; similarly, the relation in (199b) can only hold between the ER-noun as a whole and the PP (a person in California), not between the underlying base verb *kweken* 'grow' and the PP.

(199) a. #de schoenmaker met een machine
          the shoemaker   with this machine
      b. #de boomkweker in Californië
          the tree grower   in California

Apparently, the process of incorporation has the same effect as the lexicalization of ER-nouns like *kapper* 'hairdresser' and *leraar* 'teacher', as illustrated in examples (188) and (193): in both cases the postnominal position is no longer available for constituents (whether complements or adjuncts) that enter into a semantic relation with the base verb. This is not surprising given that in many cases incorporation of a theme argument results in an ER-noun that denotes a profession or an occupation.

2. Incorporation of other elements

Incorporation of the arguments of ER-nouns is not restricted to theme arguments, but is also possible with other types of constituents. Some examples are given in the table in example (200).

(200) ER-nouns with an incorporated element (non-theme)

BASE VERB	ER-NOMINALIZATION	TYPE OF RELATION
gaan 'to go'	*kerkganger* 'churchgoer'	direction
reizen 'to travel'	*treinreiziger* 'train passenger'	means
tekenen 'to draw'	*sneltekenaar* 'cartoonist'	manner (lit.: fast drawer)
roven 'to rob'	*straatrover* 'street robber'	location
schilderen 'to paint'	*voetschilder* 'foot painter'	instrument
schilderen 'to paint'	*winterschilder* 'winter decorator'	time
schrijven 'to write'	*broodschrijver* 'bread writer'	purpose

As might be expected, the presence of an incorporated adjunct blocks the postnominal realization of an adjunct of the same type. This is illustrated in example (201).

(201) a. *een kerkganger naar onze kerk
           a churchgoer   to our church
      b. *een treinreiziger met de Thalys
           a train passenger with the Thalys
      c. *een winterschilder in januari
           a winter decorator in January

Interestingly, these incorporated adjuncts not only exclude adjuncts of the same type from postnominal position, but also exclude the possibility of postnominal realization of a theme argument. Thus, as shown by example (202), in those cases

where the incorporated constituent is a (manner, location, etc.) adjunct, the syntactic position for the theme is also blocked.

(202) a. *de sneltekenaar van deze portretten
         the fast drawer of these portraits
         'the cartoonist who made these portraits'
    b. *de straatrover van die appels
         a street robber of apples
    c. *de voetschilder van dit landschap
         the foot painter of this landscape
    d. *de winterschilder van deze raamkozijnen
         a winter decorator of window frames
    e. *de broodschrijver van die kinderboeken
         a bread writer   of children's books

Potential counterexamples to the claim that compounds cannot have a theme argument expressed by means of a *van*-PP are compound nouns like *wegbereider* 'pioneer' in (203a). However, example (203a) differs from the ones in (201) and (202) in that the *van*-PP is not the theme of an underlying verb *bereiden* but of the idiomatic verbal expression *de weg bereiden voor* 'prepare the way for'; cf. (203b). It may therefore be that *wegbereider* is the result of nominalization of this complex expression, and that the *van*-PP is inherited from the complex verbal expression.

(203) a. Hij   was een van de wegbereiders van het socialisme.
          he   was one of the pioneers   of the Socialism
          'He was one of the pioneers of Socialism.'
    b. Hij bereidde de weg voor het socialisme.
        he prepared   the way for the Socialism

However, this would run afoul of the fact that the PPs in (203) are headed by different prepositions. We have seen that inheritance of PP-complements preserves the choice of the preposition; cf. the examples in (175). This suggests that we are dealing with a lexicalized compound, which would in fact be the only option for the ER-noun *grondlegger* 'founder' in (204a) given that there is no complex verbal expression that could be the input for this compound; cf. the unacceptability of (204b). The *van*-PP therefore must be a non-inherited theme argument of the lexicalized compound *grondlegger*.

(204) a. Hij   is de grondlegger van de kernfysica.
          he   is the founder   of the nuclear physics
          'He is the founder of nuclear physics.'
    b. *Hij legde de grond   voor de kernfysica.
        he   laid   the ground for the nuclear physics

3. Nonspecific van-*PPs*

Although ER-nouns with incorporated elements normally block the presence of a theme argument, this does not hold for theme arguments with generic or nonspecific reference; the constructions in (205a&b) are perfectly acceptable, provided that the elements *portretten* 'portraits' and *landschappen* 'landscapes' do not refer to

specific objects, but function to specify the kind of cartoonist or foot-painter we are dealing with. In fact, this use of nonspecific postnominal *van*-PPs is not restricted to ER-nouns involving incorporation, but occurs with habitual or professional ER-nouns in general: the *van*-PP in example (205c) does not refer to a particular set of books that Jan has written, but to the type of book he normally writes.

(205) a. een sneltekenaar (van portretten)
     a fast drawer   of portraits
     'a cartoonist specialized in portraits'
  b. een voetschilder (van landschappen)
     a foot painter   of landscapes
     'a foot painter specialized in landscapes'
  c. Jan is een schrijver (van kinderboeken).
     Jan is a writer   of children's books

The fact that the nonspecific postnominal *van*-PPs are not required raises the question of whether they should actually be seen as inherited theme arguments in these cases; it suggests that the ER-nouns have become fully lexicalized and that the *van*-PP functions instead as an adjunct to the head noun. This suggestion seems to be supported by the fact that the PPs in (205) and their specific counterparts differ in behavior. Consider the examples in (206), which show that a regular deverbal ER-noun like *tekenaar* 'drawer' can take a specific theme argument in postnominal position. When the definite article is used, as in (206a), the implication is that Peter was the only artist involved in drawing the portrait; use of the indefinite article in (206b), on the other hand, implies that more artists were involved. Example (206c) shows that, in either case, the *van*-PP can be preposed.

(206) a. Peter is de tekenaar van dit portret.
     Peter is the drawer   of this portrait
     'Peter is the drawer of this portrait.'
  b. Peter is een tekenaar van dit portret.
     Peter is a drawer   of this portrait
     'Peter is one of the drawers of this portrait.'
  c. Van dit portret is Peter een/de tekenaar.
     of this portrait   is Peter a/the drawer

As soon as the ER-noun contains an incorporated element, as in *sneltekenaar* 'cartoonist' in (207a), the use of a specific theme argument becomes impossible. Example (207b) further shows that with a nonspecific theme, the use of the indefinite article no longer forces a reading in which more than one artist is involved, while the use of a definite article is only felicitous when more identifying information is available in the (linguistic or non-linguistic) context. Finally, (207c) shows that the nonspecific *van*-PP cannot be preposed.

(207) a. *Peter is een/de sneltekenaar van dit portret.
     Peter is a/the fast drawer of this portrait
  b. Peter is een/$^{#}$de sneltekenaar van portretten.
     Peter is a/the fast drawer   of portraits
     'Peter is a cartoonist who draws portraits.'

    c. *Van portretten is Peter een/de sneltekenaar.
        of portraits   is Peter a/the fast-drawer

These differences between the constructions in (206) and (207) support the idea that the specific and nonspecific *van*-PPs are different in the sense that we are dealing with inherited arguments in the former, but with adjuncts in the latter case.

II. Occurrence of the PP in postcopular predicative position

According to the second test, only adjunct *van*-PPs can occur in postcopular predicative position; complement PPs in this position lead to unacceptable results. The ungrammaticality of the transitive examples in (208) therefore suggests that the postnominal *van*-PPs of agentive ER-nouns are indeed arguments.

(208) a. de maker   van dit schilderij   a′. *De maker is van dit schilderij.
        the maker of this painting   the maker is of this painting
     b. de schrijver van deze boeken   b′. *De schrijver is van deze boeken.
        the writer   of these books   the writer   is of these books
     c. de ontdekker van Tasmanië   c′. *De ontdekker is van Tasmanië.
        the discoverer of Tasmania   the discoverer is of Tasmania

Application of this test to ER-nominalizations derived from ditransitive verbs yields similar results. Here, too, placement of the *van*-PP in postcopular position is excluded, as exemplified in (209).

(209) a. de gever van het cadeau   a′. *De gever is van het cadeau.
        the giver of the present   the giver is of the present
     b. de schenker   van het geld   b′. *De schenker   is van het geld.
        the contributor of the money   the contributor is of the money
     c. de vertelster van verhalen   c′. *De vertelster is van verhalen.
        the teller   of stories   the teller$_{fem}$ is of stories

III. R-pronominalization

The R-pronominalization test suggests that the *van*-PPs following ER-nouns derived from transitive verbs behave like complements: the examples in (210) show that they allow R-pronominalization.

(210) a. Ik ontmoette gisteren   de maker   van het schilderij/ervan.
        I   met   yesterday the maker of the painting/of.it
     b. De organisator van het toernooi/ervan was erg   in zijn nopjes.
        the organizer   of the tournament/of.it was very pleased
     c. De vertelster van die verhalen/ervan heeft een grote verbeeldingskracht.
        the teller$_{fem}$ of those stories/of.them has   a great power of imagination

Section 2.2.1.4 has shown that using the split version of the pronominal PP normally leads to a marked result. The examples in (211) show, however, that with ER-nouns, use of the split version is often fully acceptable. This may support the suggestion in Subsection IV that many of the apparent cases of extraction of *van*-PP actually involve cases with an independent restrictive adverbial phrase.

(211) a.   Jan is de maker   van dit schilderij.
             Jan is the maker   of this painting
      a′.   Jan is <er> de maker <er> van.
          Jan is there the maker   of
      b.   Peter is de organisator van het toernooi.
          Peter is the organizer of the tournament
      b′.   Peter is <er> de organisator <er>   van.
          Peter is there the organizer   of

Application of R-pronominalization to constructions involving a ditransitive base verb yields similar results: example (212a) is acceptable both with the split and the unsplit pattern, provided that the recipient is not expressed. Example (212b) shows that R-pronominalization is only marginally possible with recipient arguments, and requires that the pronominal PP be unsplit.

(212) a.   Els is <er> de schenker <er> van (*aan de kerk).
          Els is there the giver   of   to the church
          'Santa Claus is the giver of it (not the receiver).'
      b.   Els is <*er> de schenker (van geld) <$^{??}$er> aan.
          Els is there   the donor   of money   to

Application of the R-pronominalization test to inherited PPs with prepositions other than *van* yields somewhat equivocal results. The examples in (213) show that R-pronominalization may lead to marked constructions, although it is certainly not impossible given the right context (that is, one in which the pronominalized part is the discourse topic), especially when the head noun is given contrastive accent. Note that only the constructions with the unsplit form are acceptable.

(213) a.   De politie heeft de jagers   op ons groot wild gearresteerd.
          the police has   the hunter on our big game   arrested
      a′.   De politie <*er> heeft de jagers <$^{??}$er> op gearresteerd.
          the police there has   the hunter   on arrested
      b.   De arts   heeft alle lijders aan deze ziekte behandeld.
          the doctor has   all sufferers from this disease treated
      b′.   De arts   <*er> heeft alle lijders <$^{?}$er> aan   behandeld.
          the doctor there has   all sufferers   from treated
      c.   Veel luisteraars naar dit programma klaagden   over de slechte ontvangst.
          many listeners   to this program   complained about the poor reception
          'Many listeners to this program complained about the poor reception.'
      c′. $^{?}$Veel luisteraars ernaar   klaagden   over de slechte ontvangst.
          many listeners there-to complained about the poor reception
      d.   Klagers   over de slechte ontvangst kregen   een vriendelijk antwoord.
          complainers about the poor reception received a friendly answer
      d′. $^{?}$Alle klagers   erover   kregen   een vriendelijk antwoord.
          all complainers there-about received a friendly answer

    e.   Oprechte gelovers in de wereldvrede   zijn zeldzaam.
          sincere believers   in the world peace   are rare
    e′. ^{??}Oprechte gelovers erin   zijn zeldzaam.
          sincere believers   there-in are   rare

IV. Extraction of PP

The examples in (214) and (215) suggest that PP-extraction of a theme argument is possible with ER-nouns, although the results are somewhat marked. The slightly degraded status that results from extraction is surprising given that the first three tests give a positive result as far as complement status of the *van*-PP is concerned.

(214)   • Test 4A: Topicalization
     a.   Ik heb   de maker van dit schilderij ontmoet.
         I   have the maker of this painting   met
         'I have met the maker of this painting.'
     a′. [?]Van dit schilderij heb ik de maker ontmoet.
     b.   Ik heb   de organisator van dit toernooi   gesproken.
         I   have the organizer of this tournament   talked
         'I have talked to the organizer of this tournament.'
     b′. [?]Van dit toernooi heb ik de organisator gesproken.
     c.   Ik bewonder de vertelster van die sterke verhalen.
         I admire   the teller_{fem}   of these strong stories
     c′. ^{??}Van die sterke verhalen bewonder ik de vertelster.

(215)   • Test 4B: Relativization and questioning
     a.   [?]het schilderij waarvan ik de maker heb ontmoet
         the painting of.which I   the maker have met
     a′. [?]Van welk schilderij heb jij   de maker ontmoet?
         of which painting   have you the maker met
     b.   [?]het toernooi   waarvan ik de organisator gesproken heb
         the tournament of.which I   the organizer talked.to   have
     b′. [?]Van welk toernooi heb jij   de organisator gesproken?
         of which book   have you the organizer talked.to
     c.   ^{??}de sterke verhalen waarvan ik de vertelster bewonder
         the strong stories   of.which I   the teller_{fem} admire
     c′. ^{??}Van welke sterke verhalen bewonder jij   de vertelster?
         of which strong stories   admire   you the teller_{fem}

PP-over-V is fully acceptable when the PP is preceded by an intonation break. This, however, triggers a reading in which the PP is presented as an afterthought. When such an intonation break is lacking, as is normally the case in PP-over-V constructions, the result is marked. The same thing holds for the scrambling examples in (217).

(216)   • Test 4C: PP-over-V

    a.   [?]Ik heb   de maker ontmoet   van dit schilderij.

        I   have the maker met   of this painting

        'I have met the maker of this painting.'

    b.   [?]Ik heb   de organisator gesproken van dit toernooi.

        I   have the organizer talked   of this tournament

        'I have met the organizer of this tournament.'

    c.   [?]dat ik de vertelster bewonder van die sterke verhalen.

        that I   the teller$_{fem}$ admire   of these strong stories

(217)   • Test 4D: Scrambling

    a.   [?]Ik heb   van dit schilderij gisteren   de maker ontmoet.

        I   have of this painting   yesterday the maker met

    b.   [?]Ik heb   van dit toernooi   gisteren   de organisator gesproken.

        I   have of this tournament yesterday the organizer spoken

    c.   ^{??}dat ik van die sterke verhalen de vertelster bewonder.

        that I   of these strong stories the teller$_{fem}$ admire

    Extraction of the theme-argument of an ER-nouns derived from a ditransitive base verb is possible, provided that the recipient is left unexpressed. Extraction of the recipient always leads to a severely degraded result. This is illustrated here for example (218).

(218)   Ik heb   de schenker van dit grote bedrag (aan de kerk) ontmoet.

       I   have the donor   of this large sum   to the church met

       'I have met the donor of this large sum to the church.'

(219)   • Test 4A: Topicalization

    a.   Van dit grote bedrag heb   ik de schenker [?](*aan de kerk) ontmoet.

        of this large sum   have I   the donor   to the church met

    b.   *Aan de kerk heb   ik de schenker van dit grote bedrag ontmoet.

        to the church have I   the donor   of this large sum   met

(220)   • Test 4B: Relativization and questioning

    a.   het grote bedrag waarvan ik de schenker [?](*aan de kerk) heb   ontmoet

        the great sum   of.which I   the donor   to the church have met

    a′. *de kerk   waaraan ik de schenker van dit grote bedrag heb   ontmoet

        the church to.which I   the donor of this large sum   have met

    b.   Van welk groot bedrag heb jij   de schenker [?](*aan de kerk) ontmoet?

        of which great sum   have you the donor   to the church met

    b′. *Aan welke kerk heb jij   de schenker van dit grote bedrag ontmoet?

        to which church have you the donor   of this large sum   met

(221)   • Test 4C: PP-over-V

    a.   Ik heb   de schenker (*aan de kerk) ontmoet van dit grote bedrag.

        I   have the donor   to the church met   of this large sum

    b.   *Ik heb   de schenker van dit grote bedrag ontmoet aan de kerk.

        I   have the donor   of this large sum   met   to the church

(222)   • Test 4D: Scrambling
  a.   Ik heb   van dit grote bedrag de schenker (*aan de kerk) ontmoet.
        I   have of this great sum   the donor   to the church   met
  b.   *Ik heb   aan de kerk   de schenker van dit grote bedrag ontmoet.
        I   have to the church the donor   of this great sum   met

The fact that the presence of a recipient makes the examples ungrammatical may give rise to the conclusion that we are actually not dealing with extraction of a theme-PP from the noun phrase but with independently generated restrictive adverbial phrases: the ungrammaticality of the (a)-examples with a recipient present would then follow from the fact that the noun phrase does not contain a theme argument; cf. the discussion of (181d) in Subsection I.

    Just like in the case of the recipient *aan*-PPs, the PP-extraction tests do not yield the expected results for cases in which the theme complement is headed by a preposition other than the functional preposition *van*. Examples (223) show that topicalization leads to an unacceptable result. The examples in (224) and (225) show that the same thing holds for the other forms of extraction.

(223)   • Test 4A: Topicalization
  a.   De politie heeft de jager   op ons wild   gearresteerd.
        the police has   the hunter on our game arrested
        'The police has arrested the hunter of our big game.'
  a′. *Op ons wild heeft de politie de jager gearresteerd.
  b.   De arts   heeft de lijders   aan deze ziekte behandeld.
        the doctor has   the sufferers to this disease treated
  b′. *Aan deze ziekte heeft de arts de lijders behandeld.

(224)   • Test 4B: Relativization and questioning
  a.   *het wild   waarop   de politie de jager   heeft gearresteerd
        the game where-on the police the hunter has   arrested
  a′. *Op welk wild   heeft de politie de jager   gearresteerd?
        on which game has   the police the hunter arrested
  b.   *de ziekte   waaraan   de arts   de lijders   heeft behandeld
        the disease where-from the doctor the sufferers has   treated
  b′. *Aan welke ziekte   heeft de arts   de lijders   behandeld?
        from which disease has   the doctor the sufferers treated

(225)   • Test 4C&D: PP-over-V and Scrambling
  a.   #De politie heeft de jager   gearresteerd op ons wild.
        the police has   the hunter arrested   on our game
  a′. #De politie heeft op ons wild   de jager   gearresteerd.
        the police has   on our game the hunter arrested
  b.   #De arts   heeft de lijders   behandeld aan deze ziekte.
        the doctor has   the sufferers treated   from this disease
  b′. *De arts   heeft aan deze ziekte de lijders   behandeld.
        the doctor has   from this disease the sufferers treated

In view of these facts, one possible conclusion would be that theme arguments headed by prepositions other than *van* are not complements of the noun, but adjuncts. It is clear, however, that the PPs under discussion behave differently from undisputed adjuncts and more like the PP-complements of the input verb: they are obligatory, headed by the same preposition as the PP selected by the base verb, and their semantic relation to the ER-noun is similar to that between the input verb and its PP-complement. This may lead to the conclusion that the PP-extraction test is in fact not a good test for establishing complement status of the PP, that is, just like adjunct PPs, complement PPs cannot be extracted from noun phrases. This would again lead to the conclusion that the "displaced" *van*-PPs are in fact not arguments of the noun but independent restrictive adverbial phrases; cf. the discussion in Section 2.2.1.5, sub III.

V. Conclusion

Table 6 summarizes the results from this section of the four tests for inherited theme arguments of agentive ER-nouns. The third and fifth columns indicate whether the results provide evidence for or against the assumption that we are dealing with complements.

Table 6: Complements of agentive ER-nominalization: outcome of Tests 1-4

	VAN-PPS		OTHER PPS:	
Test 1: PP obligatory	+	positive	+	positive
Test 2: Post-copular position	—	positive	n.a.	n.a.
Test 3: R-pronominalization	+	positive	?	?
Test 4A: Topicalization	?	positive	—	negative
Test 4B: Relativization/questioning	?		—	
Test 4C: PP-over-V	?		—	
Test 4D: Scrambling	?		—	

The results show that it is justified to regard inherited theme arguments that surface as *van*-PPs as complements of the derived ER-noun. Recipients and theme PPs with prepositions other than functional *van*, however, are more problematic. It is only Test 1 concerning the obligatoriness of the PP that provides unequivocal evidence in favor of complement status of these PPs. Test 2 concerning postcopular placement of *van*-PPs does of course not apply to these cases. The outcome of Test 3 concerning R-pronominalization seems to point in the direction of complement status, but the results are still not entirely convincing. The results of Test 4 are plainly negative.

   Although the results of the test do not unequivocally show that PPs introduced by a preposition other than *van* are complements, we will regard them as such. A first reason for this is that we have seen that Test 4 is perhaps not a good test for distinguishing between adjuncts and complements: seeming cases of extraction may actually involve independent restrictive adverbial phrases. A second reason is that at least the theme PPs clearly function as complements with all of the other forms of deverbal nominalization; cf. Sections 2.2.3.2-2.2.3.4.

2.2.3.2. *INF-nominalizations*

This section discusses complementation of INF-nominalizations, which come in two types: BARE-INF nominalizations like (226a), which are not preceded by a determiner, and DET-INF nominalizations like (226b), which can be introduced by a variety of determiners. Section 1.3.1.2 has shown that there are only few restrictions on INF-nominalization; it is the most productive process of deriving nouns from verbs and accepts virtually any type of input verb.

(226) a.   Wandelen van zieken moet worden aangemoedigd.
          walk   of sick   must be   encouraged
          'Walking of sick people must be encouraged.'
     b.   Het wandelen van zieken moet worden aangemoedigd.
          the walk   of sick   must be   encouraged
          'The walking of sick people must be encouraged.'

This section is organized as follows. Section 2.2.3.2.1 will start by presenting some general principles regarding the complementation of INF-nouns. Section 2.2.3.2.2 will be concerned with complementation of the most common types of INF-nouns. The discussion will be concluded in Section 2.2.3.2.3 by applying the adjunct/complement tests from Section 2.2.1 to the inherited arguments of the verbs that are realized as PPs within the noun phrase in order to show that they indeed function as complements.

2.2.3.2.1. *General principles of INF-nominalization*

This section discusses the characteristics of complementation shared by all types of INF-nouns in order to simplify the discussion of complementation which follows in Section 2.2.3.2.2.

I. Choice of determiner

The examples in (227) show that in DET-INF nominalizations the determiner position can be filled by the definite article *het*, the demonstrative determiner *dit* 'this' or *dat* 'that', or a genitive noun phrase/possessive pronoun. Schoorlemmer (2001) distinguishes two types of INF-nominalization, the plain type in (227a&a′) and the expressive type in (227b).

(227) a.   Het klagen   over het weer   is irritant.
          the   complain about the weather is annoying
          'The complaining about the weather is annoying.'
     a′. ^{??}Mijn vaders/[?]Zijn/^(?)Dit klagen   over het weer   is irritant.
          my father's/his/this   complain about the weather   is annoying
          'My father's/His complaining about the weather is annoying.'
     b.   Dat klagen   over het weer   is irritant.
          that complain about the weather is annoying
          'That/this complaining about the weather is annoying.'

Expressive INF-nominalizations like (227b) often sound more natural than plain INF-nominalizations. They contain the (expressive) expressive demonstrative pronoun *dat* 'that', and are characterized by the fact that they always convey a negative

judgment, which is often reinforced by the use of an attributive adjective expressing frequency and/or value judgment. Some examples are given in (228).

(228) a. Dat eeuwige/voortdurende hoesten van hem werkt me op de zenuwen.
　　　　that eternal/continuous　　　cough of him　　works me on the nerves
　　　　'That eternal/continuous coughing of his gets on my nerves.'
　　　b. Dat afschuwelijke hoesten van hem werkt me op de zenuwen.
　　　　that terrible　　　cough of him　　works me on the nerves
　　　　'That terrible coughing of his gets on my nerves.'

Plain and expressive INF-nominalizations differ in that the latter refer to ongoing events, whereas the former may also refer to past, completed events. This is shown by the contrast given in (229a). Furthermore, the contrast in (229b) shows that certain combinations of prenominal theme-NP and attributive adjective are perfectly acceptable in the expressive type but less so in the plain type.

(229) a. het/*dat nooit meer gebeld hebben van Tanja
　　　　the/that never again called have　　of Tanja
　　　　'Tanja's never having called us again'
　　　b. dat/[??]het afschuwelijke overlast veroorzaken van jou
　　　　that/the terrible　　　trouble cause　　of you
　　　　'that terrible causing of trouble by you.'

Another important difference concerning complementation is that transitive expressive INF-nominalizations can be followed by two *van*-phrases expressing, respectively, the theme and the agent, whereas this is impossible with plain INF-nominalizations. Note that example (230b) is acceptable when the agent is expressed by means of an agentive *door*-phrase.

(230) a. dat eeuwige treiteren van honden$_{Theme}$ van jullie$_{Agent}$
　　　　that eternal pester　of dogs　　　　of you
　　　　'that eternal pestering of dogs by you'
　　　b. het eeuwige treiteren van honden$_{Theme}$ *van/door jullie$_{Agent}$
　　　　the eternal pester　of dogs　　　　of/by　you

In other respects, the two subtypes behave very much as one group, especially in comparison with the category of BARE-INF nominalizations. Since including the distinction between expressive and plain INF-nominalizations in our discussion of INF-nominalizations may cause unnecessary confusion, the subsequent treatment of DET-INF nominalizations will be restricted to one (the most appropriate) form only.

II. The genitive noun phrase/possessive pronoun

Example (227a′), repeated here in slightly different form as (231a), shows that the agent argument can be expressed by means of a genitive noun phrase or possessive pronoun. The examples in (231b&c) show that this is never possible with the theme argument. In this respect, INF-nominalizations differ from many other nominalizations where this is readily possible.

(231) a. $^{??}$Mijn vaders/$^?$Zijn$_{Agent}$ klagen over het weer is irritant.
        my father's/his   complain about the weather is annoying
        'My father's/His complaining about the weather is annoying.'

    b. *Mijn vaders/Zijn$_{Theme}$ behandelen (door de arts) kost veel tijd.
        my father's/his   treat   by the doctor takes much time
        Intended reading: 'My father's treatment by the doctor takes much time.'

    c. *Peters/Zijn$_{Theme}$ voorstellen aan Sinterklaas$_{Recipient}$
        Peter's/his   introduce   to Santa Claus
        Intended reading: 'the introduction of Peter to Santa Claus'

III. Specificity of the postnominal van-*PP and the prenominal NP$_{Theme}$*

The most natural use of BARE-INF nominalizations seems to be a generic one, in the sense that they have a preference for determinerless (generic or nonspecific) arguments. This is especially the case when the postnominal *van*-PP corresponds to the subject of the corresponding verbal construction, that is, when the input verb is intransitive like *wandelen* 'to walk' in (232a) or unaccusative like *opstijgen* 'to take off' in (232b).

(232) a. Wandelen van (*de/*deze) zieken$_{Agent}$ moet worden aangemoedigd.
        walk   of   the/these sick   must be   encouraged
        'Sick people's walking (in the park) ought to be encouraged.'

    b. Opstijgen van (*de/*deze) vliegtuigen$_{Theme}$ maakt te veel lawaai.
        take.off   of   the/these planes   makes too much noise
        'Taking off of (the/these) planes makes too much noise.'

The results are better, although still marked, with the postnominal *van*-PP and the prenominal noun phrase in (233), which correspond to the theme argument/direct object of the corresponding verbal construction. Section 1.3.1.2.2, sub IV, has shown that realization of the theme as a prenominal noun phrase is always preferred with BARE-INF nominalizations, but this is not indicated by the judgments given in (233), which only aim at expressing the effect of adding the relevant determiner. When not directly relevant for the discussion, the effect of the manner of realization of the theme argument in BARE-INF nominalizations is also ignored in the examples given later in this section.

(233) a. Opbergen van ($^?$de/$^?$die/$^?$mijn) mappen$_{Theme}$ kost veel tijd.
        put.away of   the/those/my files   costs much time
        'Putting away of (the/those/my) files took a lot of time.'

    b. ($^?$De/$^?$Die/$^?$Mijn) mappen$_{Theme}$ opbergen kost veel tijd.
        the/those/my   files   put.away costs much time
        'Putting away (the/those/my) files took a lot of time.'

The acceptability of sentences like (233) varies with the degree of genericity. This is shown by the fact illustrated by the examples in (234) that the choice between past and present tense affects the acceptability of the examples, which is of course due to the fact that the present tense makes a generic reading more readily available.

(234) a. Maken   van deze som_Theme *was/[??]is lastig.
          make   of this sum   was/is   difficult
      b. Behandelen van Jan_Theme *kostte/[??]kost veel tijd.
          treat   of Jan   took/takes   much time

The use of a binominal construction involving a kind-noun like *soort/type* in the examples in (235) also improves the result due to the fact that these noun phrases, despite their definiteness, may trigger a generic reading.

(235) a. [?]Maken   van dit soort sommen_Theme is lastig.
          make   of this kind of sums   is difficult
          'Doing this kind of sums is difficult.'
      b. [?]Behandelen van dit type patiënt_Theme kost   veel tijd.
          treat   of this type of patient   takes much time
          'Treating this patient takes a lot of time.'

   The examples in (236) show that DET-INF nominalizations also seem to have a preference for nonspecific arguments that correspond to the subject of the corresponding verbal construction, although the effect is less strong than with BARE-INF nominalizations.

(236) a. Het wandelen van ([?]de/[?]deze) zieken_Agent moet worden aangemoedigd.
          the walk   of   the/these sick   must be   encouraged
          'The walking of the/these sick people ought to be encouraged.'
      b. Het opstijgen van ([??]de/[?]deze) vliegtuigen_Theme maakt te veel lawaai.
          the take.off   of   the/these planes   makes too much noise
          'The taking off of the/these planes makes too much noise.'

When the postverbal *van*-PP corresponds to the object of the corresponding verbal construction, this preference disappears: example (237a) shows that in this case specific and nonspecific arguments give rise to equally acceptable results. However, when the object of the corresponding verbal construction is expressed by means of a prenominal noun phrase, as in (237b), the preference for a nonspecific argument reappears. Section 1.3.1.2.2, sub IV, has shown that realization of the theme as a postnominal *van*-PP is always preferred with DET-INF nominalizations, but this is not indicated by the judgments given in (237), which only aim to express the effect of adding the relevant determiner. When not directly relevant for the discussion, the effect of the manner of realization of the theme in DET-INF nominalizations is also ignored in the examples given later in this section.

(237) a. Het opbergen van (de/die/mijn) mappen_Theme kost   veel tijd.
          the put.away   of   the/those/my files   costs much time
          'This putting away of (the/those/my) files took a lot of time.'
      b. Het ([?]de/[?]die/[?]mijn) mappen_Theme opbergen kost   veel tijd.
          the   the/those/my files   put.away costs much time
          'Putting away (the/those/my) files took a lot of time.'

The examples in (238) show that the degraded status of (237b) is not due to the sequence of two determiners because it also arises with specific noun phrases that

appear without a determiner, like proper nouns. This is illustrated in (238) by means of the proper noun *Peter*.

(238) a.   Het behandelen van patiënten/Peter$_{Theme}$ door de arts$_{Agent}$ kost veel tijd.
        the treat   of patients/Peter   by the doctor   takes much time
        'The treating of patients/Peter by the doctor takes much time.'
     b.   Het patiënten/*Peter$_{Theme}$ behandelen door de arts$_{Agent}$ kost   veel tijd.
        the patients/Peter   treat   by the doctor   takes much time
        'The treating of patients/Peter by the doctor takes much time.'

The specificity effect also arises with INF-nominalizations of ditransitive verbs: (239a&a′) and (239b) show this for respectively the theme and the recipient argument of a BARE-INF nominalization.

(239) a.   Winnaars ($^?$de) prijzen uitreiken is een feestelijke gelegenheid.
        winners   the prizes   present   is a festive occasion
        'Presenting winners with prizes is a festive occasion.'
     a′. ($^{*?}$De) prijzen uitreiken aan de winnaars is een feestelijke gelegenheid.
        the prizes   present   to the winners   is a festive occasion
     b.   ($^{??}$De) winnaars prijzen uitreiken is een feestelijke gelegenheid.
        the winners   prizes   present   is a festive occasion

Examples (240a&a′) and (240b) present the corresponding DET-INF nominalizations, and example (240c) shows that realizing the theme and recipient arguments as specific postnominal PPs gives rise to a fully acceptable result.

(240) a.   Het winnaars ($^{??}$de) prijzen   uitreiken is een feestelijke gelegenheid.
        winners   the prizes   present   is a festive occasion
        'Presenting winners with prizes is a festive occasion.'
     a′. Het (*de) prijzen uitreiken aan de winnaars is een feestelijke gelegenheid.
        the   the prizes   present   to the winners   is a festive occasion
     b.   Het ($^{*?}$de) winnaars prijzen uitreiken is een feestelijke gelegenheid.
        the   the winners   prizes   present   is a festive occasion
     c.   Het uitreiken van de prijzen aan de winnaars is een feestelijke gelegenheid.
        the present   of the prizes   to the winners   is a festive occasion

IV. The agentive door-*phrase*

Another general principle of INF-nominalizations concerns the position of agentive *door*-phrases, which may appear in plain INF-nominalizations derived from transitive and ditransitive verbs that can be passivized. Note that Section 2.2.3.2.2 will show that INF-nominalizations derived from intransitive verbs prefer the realization of the agent as a *van*-PP, despite the fact that intransitive verbs can also be passivized in Dutch. This is illustrated in example (241).

(241) a.   Het lachen van/$^{*?}$door Jan is gênant.
        that laugh of/by Jan   is embarrassing
        'That laughing of Jan is embarrassing.'

    b.   Het treiteren van kleuters door/*van Jan is onaanvaardbaar.
          that bully   of toddlers   by/of Jan   is unacceptable
          'That bullying of toddlers by Jan is unacceptable.'
    c.   Het geven van cadeaus aan kinderen door/*van Sinterklaas is traditie.
          the give   of presents to children   by/of Santa Claus   is tradition
          'The giving of presents to children by Santa Claus is a tradition.'

The agentive *door*-phrase typically occurs postnominally, following all other arguments. However, placement in other positions, either postnominally or prenominally, is also possible. The placement possibilities of the *door*-phrase depend on the form of the INF-nominalization (BARE-INF or DET-INF) and the position of the theme (postnominal or prenominal). Separate subsections will therefore be devoted to (i) DET-INF nominalizations with a postnominal theme, (ii) BARE-INF nominalizations with a postnominal theme, and (iii) DET-INF and BARE-INF nominalizations with the theme in prenominal position. Finally, some attention will be paid to DET-INF nominalizations of causative constructions, as these turn out to be much more tolerant with regard to the placement of the *door*-PP.

A. DET-INF with postnominal theme

Example (242a) provides the typical, unmarked order of constituents in DET-INF nominalizations derived from a transitive verb with a postnominal theme: the *door*-PP follows the nominalized head and the theme argument realized as a *van*-PP. Placing the *door*-PP in some other position within the noun phrase, as in (242b&c), yields a marked result.

(242) a.   Het behandelen van de patiënten_{Theme} door de arts_{Agent} kost veel tijd.
          the treat   of the patients   by the doctor   takes much time
          'The treatment of the patients by the doctor takes a lot of time.'
    b.   *?Het behandelen door de arts_{Agent} van de patiënten_{Theme} kost veel tijd.
    c.   ??Het door de arts_{Agent} behandelen van de patiënten_{Theme} kost veel tijd.

The examples in (243) show, however, that the marked orders may arise under certain conditions. First, (243a) illustrates that the agentive *door*-PP may precede the theme PP when the latter is sufficiently heavy. Second, (243b) shows that placement of the *door*-PP in prenominal position is somewhat better in generic contexts; in formal generic contexts, such as (243b′), it is even fully acceptable.

(243) a.   Het behandelen door de arts_{Agent}   van de patiënt van kamer 114_{Theme}
          the treat   by the doctor   of the patient from room 114
          kost veel tijd.
          takes much time
    b.   ?Het door artsen_{Agent} behandelen van patiënten_{Theme} kost veel tijd.
          the by doctors   treat   of patients   costs much time
    b′. Het door co-assistenten_{Agent} behandelen   van patiënten_{Theme}
          the by interns   treat   of patients
          staat ter discussie.
          stands at discussion
          'The treating of patients by interns is under discussion.'

In the case of a ditransitive example like (244), too, the *door*-PP typically follows the complements of the INF-nominalization, the alternative orders exhibiting a varying degree of unacceptability: the orders in (244a&b) both seem acceptable; the orders in (244c&d) are marginal at best, although they may become slightly more acceptable in generic contexts or in the case of heavy-PP shift.

(244) a.   Het uitreiken van de prijzen$_{Th}$ aan de winnaars$_{Rec}$ door de voorzitter
          the present of the prizes   to the winners   by the chairman
          duurde lang.
          took   long
          'This presenting of the prizes to the winners by the chairman took a long time.'
    b. $^?$Het uitreiken van de prijzen$_{Th}$ door de voorzitter$_{Ag}$ aan de winnaars$_{Rec}$ duurde lang.
    c. $^{*?}$Het uitreiken door de voorzitter$_{Ag}$ van de prijzen$_{Th}$ aan de winnaars$_{Rec}$ duurde lang.
    d. $^{??}$Het door de voorzitter$_{Ag}$ uitreiken van de prijzen$_{Th}$ aan de winnaars$_{Rec}$ duurde lang.

The fact that the *door*-phrase seems to prefer a peripheral position in the INF-nominalization may reflect the fact that agents of nominalized constructions are less closely associated with the head than themes or recipients.

B. BARE-INF with postnominal theme

As was noted in Subsection III above, BARE-INF nominalizations with the theme argument in postnominal position are only acceptable on a generic reading. Even so, word order variation is restricted: only the order in (245a), in which the *door*-phrase follows both the head and the theme argument, is fully acceptable; placing the *door*-phrase between the noun and the theme, as in (245b), yields a bad result even with a heavy theme; placing the *door*-phrase in front of the noun, as in (245c), is entirely impossible.

(245) a.   Behandelen van patiënten   (met hardnekkige kwalen)$_{Th}$ door artsen$_{Ag}$
          treat   of patients   with persistent ailments   by doctors
          kost   veel tijd.
          takes much time
          'The treating of patients by inexperienced doctor takes a lot of time.'
    b. $^{*?}$Behandelen door artsen$_{Ag}$ van patiënten (met hardnekkige kwalen)$_{Th}$ kost veel tijd.
    c.   *Door artsen$_{Ag}$ behandelen van patiënten (met hardnekkige kwalen)$_{Th}$ kost veel tijd.

A similar pattern emerges with BARE-INF nominalizations derived from ditransitive verbs. In (246) we give examples with a normal theme and recipient: (246b&c) show that placing the *door*-phrase in front of the recipient or the theme gives rise to a marginal result, and (246d) shows that placing the *door*-phrase in front of the noun is impossible.

(246) a.   Uitreiken van prijzen$_{Th}$ aan winnaars$_{Rec}$ door voorzitters$_{Ag}$ duurt altijd lang.
          present   of prizes   to winners   by chairmen   takes always long
          'Presenting prizes to winners by chairmen always takes a long time.'
    b. $^?$Uitreiken van prijzen$_{Th}$ door voorzitters$_{Ag}$ aan winnaars$_{Rec}$ duurt altijd lang.
    c. $^{*?}$Uitreiken door voorzitters$_{Ag}$ van prijzen$_{Th}$ aan winnaars$_{Rec}$ duurt altijd lang.
    d.   *Door voorzitters$_{Ag}$ uitreiken van prijzen$_{Th}$ aan winnaars$_{Rec}$ duurt altijd lang.

The examples in (247) show that cases with a heavy theme or a heavy recipient argument do not give rise to better results.

(247) a.   *Uitreiken aan winnaars$_{Rec}$ door voorzitters$_{Ag}$ van prijzen voor de leukste
　　　　present   to winners　　　by chairmen　　of prizes　　for the funniest
　　　　bijdrage$_{Th}$　　duurt altijd　　lang.
　　　　contribution takes always long

　　　b.　$^?$Uitreiken van prijzen$_{Th}$ door voorzitters$_{Ag}$ aan winnaars van internationale
　　　　present of prizes　　　　by chairmen　　to winners　　of international
　　　　wedstrijden$_{Rec}$ duurt altijd　　lang.
　　　　competitions　takes always long

C. DET-INF and BARE-INF with prenominal theme

When the theme appears prenominally as a noun phrase, as in the transitive constructions in (248) and (249), the distribution of the *door*-phrase is severely restricted. It can only occur postnominally, and even this leads to a marked result: the (a)-examples are certainly more marked than the corresponding examples in which the theme is expressed by a postnominal *van*-PP.

(248) a. $^?$Het patiënten$_{Th}$ behandelen door artsen$_{Ag}$ kost veel tijd.
　　　　the patients　　treat　　　by doctors　　takes much time
　　　　'The treating of patients by doctors takes a lot of time.'

　　　b.　*Het door artsen$_{Ag}$ patiënten$_{Th}$ behandelen kost veel tijd.

　　　c.　*Het patiënten$_{Th}$ door artsen$_{Ag}$ behandelen kost veel tijd.

(249) a. $^{??}$Patiënten$_{Th}$ behandelen door artsen$_{Ag}$ kost altijd　veel tijd.
　　　　patients　　treat　　　by doctors　　takes always much time
　　　　'Treating of patients by doctors takes a lot of time.'

　　　b.　*Door artsen$_{Ag}$ patiënten$_{Th}$ behandelen kost altijd veel tijd.

　　　c.　*Patiënten$_{Th}$ door artsen$_{Ag}$ behandelen kost altijd veel tijd.

More or less the same pattern can be observed in the ditransitive constructions in (250) and (251): the (a)-examples show that expressing the *door*-phrase with a prenominal theme is somewhat marked compared to constructions in which the theme is expressed by a postnominal *van*-PP; the (b)-examples show that constructions with both the theme and the *door*-PP in prenominal position are unacceptable; the (c)-examples, finally, show that constructions with all three arguments in prenominal position are degraded, although they are perhaps marginally possible with DET-INFs when the indirect object takes the form of an *aan*-PP.

(250) a. $^{(?)}$Het prijzen$_{Th}$ uitreiken aan winnaars$_{Rec}$ door voorzitters$_{Ag}$ duurt altijd lang.
　　　　the prizes　　present to winners　　by the chairman takes always long
　　　　'The presenting of prizes to winners by the chairman always takes a long time.'

　　　b.　$^{*?}$Het door voorzitters$_{Ag}$ prijzen$_{Th}$ uitreiken aan winnaars$_{Rec}$ duurt altijd lang.

　　　b′.　*Het prijzen$_{Th}$ door voorzitters$_{Ag}$ uitreiken aan winnaars$_{Rec}$ duurt altijd lang.

　　　c.　$^{??}$Het door voorzitters$_{Ag}$ prijzen$_{Th}$ aan winnaars$_{Rec}$ uitreiken duurt altijd lang.

　　　c′.　*Het door voorzitters$_{Ag}$ winnaars$_{Rec}$ prijzen$_{Th}$ uitreiken duurt altijd lang.

(251) a. ^(?)Prijzen_{Th} uitreiken aan winnaars_{Rec} door voorzitters_{Ag} duurt altijd   lang.
         prizes   present   to the winners   by the chairman   takes always long
         'Presenting prizes to winners by chairmen always takes a long time.'
    b. *Door voorzitters_{Ag} prijzen_{Th} uitreiken aan winnaars_{Rec} duurt altijd lang.
    b'. *Prijzen_{Th} door voorzitters_{Ag} uitreiken aan winnaars_{Rec} duurt altijd lang.
    c. *Door voorzitters_{Ag} prijzen_{Th} aan winnaars_{Rec} uitreiken duurt altijd lang.
    c'. *Door voorzitters_{Ag} winnaars_{Rec} prijzen_{Th} uitreiken duurt altijd lang.

D. Det-inf nominalizations of causative constructions

Placement of the *door*-PP in prenominal position is much easier in Det-inf nominalizations derived from a causative verb like *laten* than in the other Inf-nominalizations. This is true regardless of the position of the other arguments (prenominal or postnominal). Examples are given in (252).

(252) a.   Het door artsen laten behandelen van patiënten is erg verstandig.
         the by doctors let   treat   of patients   is very wise
         'Having doctors treat patients is very wise.'
    b.   Het door artsen patiënten laten behandelen is erg verstandig.
         the by doctors patients   let   treat   is very wise

When the verb embedded under the causative verb is ditransitive, essentially the same pattern arises as in the case of the transitive verbs in (252). Example (253a) gives an example in which the theme is realized as a postnominal *van*-PP, and (253b&b') exemplify cases with a prenominal theme.

(253) a.   Het door de voorzitter laten uitreiken van de prijzen aan de winnaars
         the by the chairman   let   present   of the prizes   to the winners
         bleek   geen goed idee.
         proved   no good idea
         'Having the chairman present the prizes to the winners was not a good idea.'
    b.   Het door de voorzitter prijzen laten uitreiken aan de winnaars ...
         the by the chairman   prizes   let   present   to the winners
    b'. Het door de voorzitter prijzen aan de winnaars laten uitreiken ...
         the by the chairman   prizes   to the winners   let   present

The crucial difference with the other cases is that the *door*-phrase in these examples does not correspond to an argument of the nominalized causative verb *laten*, but to the subject of the verbs *behandelen* 'to treat' and *uitreiken* 'present' embedded under the causative verb. Note that the subject of the embedded verb can also be realized in the verbal causative construction, as is shown by (254b): the phrases between angle brackets indicate the alternative realizations of the agent argument of the infinitival clause.

(254) a.   Zij laten <de dokter> de patiënten <door de dokter> behandelen.
         they let   the doctor   the patients   treat
    b.   Zij laten <de voorzitter> de prijzen <door de voorzitter> aan de winnaars
         they let   the chairman   the prizes   to the winner
         uitreiken.
         present
         'They let the chairman present the prizes to the winners.'

The *door*-PP in (252) and (253) must precede the other arguments in prenominal position, which, just like the *door*-PP, are not arguments of the causative verb, but of the verb embedded under it. This is illustrated in the (a)-examples of (255) and (256). In postnominal position the *door*-phrase must follow the theme and preferably precedes the recipient, just as in the verbal construction in (254b). This is illustrated in the (b)-examples of (255) and (256).

(255) a. Het <door artsen> patiënten <$^{??}$door artsen> laten behandelen is erg verstandig.
    b. Het laten behandelen <$^{??}$door artsen> van patiënten <door artsen> is erg verstandig.

(256) a. Het door de voorzitter prijzen aan de winnaars laten uitreiken bleek ...
        the by the chairman prices to the winners let present proved
        'Having the prices being presented to the winners by the chairman was ...'
    a′. *Het prijzen door de voorzitter aan de winnaars laten uitreiken bleek ...
    a′. *Het prijzen aan de winnaars door de voorzitter laten uitreiken bleek ...
    b. $^{??}$Het laten uitreiken door de voorzitter van prijzen aan de winnaars bleek ...
    b′. Het laten uitreiken van prijzen door de voorzitter aan de winnaars bleek ...
    b″. $^{?}$Het laten uitreiken van prijzen aan de winnaars door de voorzitter bleek ...

The examples in (257) show that the agent of the embedded verb can also be realized in the form of a noun phrase. This possibility is related to the fact that the agent can be assigned accusative case in the verbal causative construction: the agentive noun phrases *de dokter* or *de voorzitter* in (254) can only be replaced by the object pronoun *hem* 'him'. In (257), the agent must precede the other arguments in prenominal position: placing the agent after the theme (or the recipient) will give rise to an unacceptable result.

(257) a. Het artsen patiënten laten behandelen is erg verstandig.
        the doctors patients let treat is very wise
        'Having doctors treat patients is very wise.'
    b. Het de voorzitter de prijzen laten uitreiken aan de winnaars bleek ...
        the the chairman the prizes let present to the winners proved
        'Having the chairman present the prizes to the winners was ...'
    b′. Het de voorzitter de prijzen aan de winnaars laten uitreiken bleek ...

Example (258a) finally shows that *door*-PPs are excluded with DET-INF nominalizations when the embedded verb is intransitive. This is clearly related to the fact that their subject cannot be realized as a *door*-phrase in the verbal construction either.

(258) a. *Het <door Peter> laten wachten <door Peter>.
        the by Peter let wait
    b. Jan laat (door) Peter wachten.
        Jan let by Peter wait

2.2.3.2.2. Complementation

The previous section has discussed some general considerations concerning complementation of INF-nominalizations. This section will continue by giving a

more detailed discussion of complementation of the types of INF-nominalizations illustrated in (259). These examples involve BARE-INF nouns; the corresponding examples with DET-INF nouns will be given later in this section.

(259) a. Wandelen van zieken moet worden aangemoedigd.   [intransitive]
           walk   of sick   must   be   encouraged
           'Walking of sick people must be encouraged.'

       b. Vallen kan pijnlijk zijn.   [unaccusative]
           fall   can painful be
           'Falling can be painful.'

       c. Een goede baan   vinden is moeilijk.   [transitive]
           a good job   find   is difficult
           'Finding a good job is difficult.'

       d. Kinderen cadeaus geven is leuk.   [ditransitive]
           children presents give   is nice
           'Giving presents to children is nice.'

       e. Jagen op groot wild roept veel protesten op.   [PP-theme]
           hunt   on big game   calls many protests up
           'Hunting big game evokes a lot of protest.'

       f. De deur rood schilderen bleek   niet zo'n goed idee.   [complementive]
           the door red paint   proved not such a good idea
           'Painting the door red didn't really turn out to be a good idea.'

I. INF-nominalization of intransitive verbs

The agent argument of INF-nominalizations derived from intransitive verbs is normally only optionally expressed. If it is expressed it can take the form of a postnominal *van*-PP, or, in the case of DET-INF nominalizations, the form of a prenominal genitive noun phrase or possessive pronoun.

(260)   • BARE-INF: agentive postnominal *van*-PP
       a. Wandelen (van zieken) moet worden aangemoedigd.
           walk   of sick$_{pl}$ must   be   encouraged
           'Walking of sick people ought to be encouraged.'

       b. Onrustig slapen   (van patiënten) is de oorzaak van het probleem.
           unquiet sleep   of patients   is the cause of the problem
           'Unquiet sleeping (of patients) is the cause of the problem.'

(261)   • DET-INF: agentive postnominal *van*-PP or genitive NP/possessive pronoun
       a. Het wandelen (van zieken) moet worden aangemoedigd.
           the walk   of sick$_{pl}$ must   be   encouraged
           'The walking (of sick people) ought to be encouraged.'

       a'. (Jans/Zijn) wandelen in het park   moet worden aangemoedigd.
           Jan's/His   walk in the park   must   be   encouraged

       b. Het onrustige slapen (van patiënten) is de oorzaak van het probleem.
           the unquiet sleep   of patients   is the cause of the problem
           'The restless sleeping (of patients) is the cause of the problem.'

       b'. (Peters/Zijn) onrustige slapen is de oorzaak van het probleem.
           Peter's/his   unquiet sleep   is the cause of the problem

That both the postnominal *van*-PP and the genitive noun phrase/possessive pronoun indeed express the agent argument of the INF-nouns is shown by the fact illustrated by (262) that they cannot co-occur; like their intransitive verbal base, INF-nouns can assign each semantic function only once.

(262) a. *Jans   wandelen   van de zieken
         Jan's walk   of the sick
    b. *hun onrustige slapen van de patiënten
         their unquiet sleep   of the patients

The agents of the INF-nominalization in the primed examples of (263) cannot appear in the form of a *door*-PP, unlike the agents in the corresponding (impersonal) passive constructions in the primeless examples.

(263) a.   Er   wordt door de zieken   veel   in het park gewandeld.
         there is   by the sick   much in the park walked
         'There is much walking by sick people in the park.'
    a′. *het   wandelen door de zieken   in het park
         the   walk   by the sick people in the park
    b.   Er   werd door de studenten om het grapje gelachen.
         there was   by the students   about the joke laughed
         'The students laughed about the joke.'
    b′. *het lachen door de studenten   om het grapje
         the laugh   by the students   about the joke

II. INF-nominalization of unaccusative verbs

The subject of an unaccusative verb is a theme, which can be expressed by means of a postnominal *van*-PP in the corresponding BARE-INF nominalizations. The result is, however, always marked.

(264)   • BARE-INF: postnominal *van*-PP$_{Theme}$
    a. ??Vallen   van bladeren maakt me neerslachtig.
         fall   of leaves   makes me depressed
         'The falling of leaves depresses me.'
    b. ??(Plotseling)   verschijnen van gasten schikt me niet.
         sudden   appear   guests   suits   me not
         'The sudden appearing of guests doesn't suit me.'

DET-INF nominalizations based on unaccusative verbs can readily be expressed by means of a postnominal *van*-PP. However, it is not possible to realize them prenominally as a genitive noun phrase or possessive pronoun. The unacceptability of (265a′) is not really surprising, since possessive pronouns normally do not refer to inanimate entities. The construction is, however, also marginal when the pronoun refers to a human entity; the marginality of (266b) clearly illustrates this restriction.

(265)   • DET-INF: postnominal [-ANIMATE] *van*-PP$_{Theme}$
    a.   Het vallen van de bladeren maakt me neerslachtig.
         the   fall   of the leaves   makes me depressed
         'The falling of the leaves depresses me.'

    b. *Hun vallen maakt me neerslachtig.
         their falling makes me depressed

(266)   • DET-INF: postnominal [+ANIMATE] *van*-PP$_{Theme}$
    a. Het (plotselinge) verschijnen van die gasten schikte me niet.
         the   sudden   appear   of those guests suited   me not
         'The sudden appearing of those guests didn't suit me.'
    b. $^{??}$Zijn/Jans (plotselinge) verschijnen schikte me niet.
         his/Jans   sudden   appear   suited   me not

Since the input unaccusative verb cannot be passivized, it is not surprising that the preposition *van* can never be replaced by the preposition *door*. This is illustrated for the (a)-examples above in (267).

(267) a. *Het vallen door de bladeren maakt mij neerslachtig.
     a′. *Vallen door de bladeren maakt mij neerslachtig.
     b. *Het (plotselinge) verschijnen door die gasten schikte mij niet.
     b′. *(Plotseling) verschijnen door die gasten schikte mij niet.

III. INF-*nominalization of transitive verbs*

With INF-nominalizations based on transitive verbs, the picture becomes somewhat more complicated. Since cases in which none of the arguments are expressed are only possible under special circumstances, which will be discussed in Section 2.2.3.2.3, we will focus here on the three remaining possibilities: cases in which only the theme is realized, cases in which both the agent and the theme are expressed, and cases in which only the agent is expressed. We will discuss them in the given order.

A. INF-*nominalizations with only the theme argument expressed*

If in a transitive INF-nominalization only one argument is expressed, this argument must be the theme. In BARE-INF nominalizations the theme argument is normally realized as a prenominal noun phrase. Alternatively, it can surface postnominally as a *van*-PP, although this leads to a somewhat marked result (just as in the case of BARE-INF nominalizations derived from unaccusative verbs).

(268)   • BARE-INF: prenominal NP$_{Theme}$; postnominal *van*-PP$_{Theme}$
    a. Sommen$_{Theme}$ maken is saai.
         sums   make   is boring
    a′. $^{?}$Maken van sommen$_{Theme}$ is saai.
         make   of sums   is boring
    b′. Patiënten$_{Theme}$ behandelen kost veel tijd.
         patients   treat   takes much time
    b′. $^{?}$Behandelen van patiënten$_{Theme}$ kost veel tijd.
         treat   of patients   takes much time

The theme argument of a BARE-INF nominalization is preferably nonspecific; using a specific argument in (268) will normally degrade the results; cf. Section 2.2.3.2.1, sub III. Note, however, that this is not a restriction on complementation as such, but

rather due to the semantics of the complete construction. This can be illustrated by the fact that the BARE-INF nominalizations in the primeless examples in (269) are only marked compared to those in (268a&b). Furthermore, they are best in the present tense, which may be due to the fact that this favors a generic interpretation of these sentences. The primed examples in (269), finally, show that a contrastive reading may render such generic sentences even fully acceptable.

(269) a. Deze sommen_Theme maken ?is/??was lastig.
        these sums   make is/was   difficult
    a′. Deze sommen maken is lastiger   dan de afwas doen.
        these sums   make is more difficult than the dishes do
        'Making these sums is more difficult than doing the dishes.'
    b. De koningin_Theme behandelen ?kost/??kostte veel tijd.
        the queen   treat   takes/took   much time
    b′. De koningin_Theme behandelen kost meer tijd dan
        the queen   treat   takes much time than
        een normale patiënt behandelen.
        a regular patient   treat
        'Treating the queen takes more time than treating a regular patient.'

In DET-INF nominalizations the preferred pattern is just the opposite of that in BARE-INF nominalizations: expressing the theme by means of a prenominal noun phrase is possible, but using a postnominal *van*-PP is the preferred way of expressing the theme.

(270)   • DET-INF: postnominal *van*-PP_Theme; prenominal NP_Theme
    a. Het altijd   maar sommen_Theme maken is saai.
        the always PRT sums   make is boring
        'The always making of sums is boring.'
    a′. Het maken van die sommen_Theme is saai.
        the make of those sums   is boring
        'The making of these sums is boring.'
    b. ?Het patiënten_Theme behandelen kost veel tijd.
        the those patients treat   takes much time
        'The treating of (these) patients takes a lot of time.'
    b′. Het behandelen van die patiënten_Theme kost veel tijd.
        the treat   of those patients   takes much time
        'The treating of these patients takes a lot of time.'

Furthermore, example (271) shows that the prenominal theme only allows a generic interpretation; cf. Section 2.2.3.2.1, sub III. The judgments on these examples contrast sharply with those on the DET-INF constructions with a postnominal theme in (270a′&b′).

(271) a. *Het deze sommen_Theme maken was lastig.
        the these sums   make was difficult
    b. *Het de koningin_Theme behandelen maakte hem beroemd.
        the the queen   treat   made him famous

In generic contexts the result of using a prenominal theme gives rise to a less degraded result, but still the use of a postnominal *van*-PP is much preferred.

(272) a.　Het eten van een appeltje　in de pauze　is een goede gewoonte.
　　　　　the eat of an apple$_{dim}$　　in the break is a good habit
　　　　　'The eating of an apple during the break is a good habit.'
　　a′.　$^?$Het een appeltje eten in de pauze is een goede gewoonte.
　　b.　Het opeten van je appeltje　in de pauze　is een goede gewoonte.
　　　　　the eat.up of your apple$_{dim}$　in the break is a good habit
　　　　　'The eating of your apple during the break is a good habit.'
　　b′.　$^?$Het je appeltje opeten in de pauze is een goede gewoonte.

When not directly relevant, the effect of the manner of realization of the theme in INF-nominalizations will be ignored in the examples discussed later in this section; we will simply concentrate on the effect of adding more arguments to the construction.

B. INF-nominalizations with both the agent and the theme argument expressed

Example (273) shows that the agent argument of BARE-INF nouns can be added in the form of a *door*-PP, which must follow the nominalized head and the theme argument realized as a *van*-PP; cf. Section 2.2.3.2.1, sub IV.

(273)　　• BARE-INF: postnominal *van*-PP$_{Theme}$ and *door*-PP$_{Agent}$
　　a.　Treiteren van peuters$_{Theme}$　door grote jongens$_{Agent}$ is onaanvaardbaar.
　　　　　bully　　of toddlers　　　by big boys　　　　　is unacceptable
　　　　　'Bullying of toddlers by big boys is unacceptable.'
　　a′.　*Treiteren door grote jongens$_{Agent}$ van peuters$_{Theme}$ is onaanvaardbaar.
　　b.　Behandelen van dit soort patiënten$_{Theme}$　door onervaren artsen$_{Agent}$
　　　　　treat　　　of this sort of patients　　　by inexperienced doctors
　　　　　kan lang duren.
　　　　　can long take
　　　　　'Treatment of such patients by inexperienced doctors can take a long time.'
　　b′.　*$^?$Behandelen door onervaren artsen$_{Agent}$ van dit soort patiënten$_{Theme}$ kan ...

However, when the theme argument is realized as a prenominal noun phrase, the addition of a *door*-PP gives rise to a degraded result, regardless of the position of the *door*-phrase; the examples in (274) only illustrate the case in which the *door*-phrase appears postnominally.

(274)　　• BARE-INF: prenominal NP$_{Theme}$ and *door*-PP$_{Agent}$
　　a.　$^{??}$Peuters$_{Theme}$　treiteren　door grote jongens$_{Agent}$ is onaanvaardbaar.
　　　　　toddlers　　bully　　by big boys　　　　　is unacceptable
　　b.　$^{??}$Patiënten$_{Theme}$ behandelen　door onervaren artsen$_{Agent}$ kan lang duren.
　　　　　patients　　　treat　　　by inexperienced doctors　can long take

　　　Adding the agent argument in the form of a *door*-PP is also possible with DET-INF nominalizations. Example (275a) shows that this *door*-PP must also follow the nominalized head and the theme argument realized as a *van*-PP; cf. Section 2.2.3.2.1, sub IV.

(275)　　● DET-INF: postnominal *van*-PP~Theme~ and *door*-PP~Agent~
　　　a.　Het treiteren　van peuters~Theme~　door grote jongens~Agent~　is onaanvaardbaar.
　　　　　the bully　　　of toddlers　　　by big boys　　　　　　　is unacceptable
　　　　　'The bullying of toddlers by big boys is unacceptable.'
　　　a′.　*?Het treiteren door grote jongens~Agent~ van peuters~Theme~ is onaanvaardbaar.
　　　b.　Het behandelen　van patiënten~Theme~　door de arts~Agent~　kost　veel tijd.
　　　　　the treat　　　　of patients　　　　　by the doctor　　　takes　much time
　　　　　'The treating of patients by the doctor takes a lot of time.'
　　　b′.　*?Het behandelen door de arts~Agent~ van patiënten~Theme~ kost veel tijd.

As in the case of BARE-INF nominalizations, the addition of a *door*-PP gives rise to a degraded result in cases like (276), in which the theme argument is realized as a prenominal noun phrase. Placing the *door*-phrase in prenominal position seems to deteriorate the examples even further.

(276)　　● DET-INF: prenominal NP~Theme~ and *door*-PP~Agent~
　　　a.　??Het peuters~Theme~ treiteren　door grote jongens~Agent~ is onaanvaardbaar.
　　　　　that toddlers　　bully　　by big boys　　　　　　　is unacceptable
　　　b.　*?Het patiënten~Theme~ behandelen door de arts~Agent~ kost　veel tijd.
　　　　　that patients　　　treat　　　by the doctor　　takes　much time

The agent of DET-INF nominalizations can also take the form of a genitive noun phrase or a possessive pronoun provided that the theme appears as a *van*-PP, as in the primeless examples in (277); when the theme is realized as a prenominal noun phrase, as in the primeless examples, the result is seriously degraded.

(277)　　● BARE-INF: agentive genitive NP/possessive pronoun
　　　a.　Jans/Zijn~Agent~ treiteren　van peuters~Theme~　is onaanvaardbaar.
　　　　　Jan's/his　　　bully　　of toddlers　　　is unacceptable
　　　　　'Jan's bullying of toddlers is unacceptable.'
　　　a′.　*?Jans/Zijn~Agent~ peuters~Theme~ treiteren　is onaanvaardbaar.
　　　　　Jan's/his　　　toddlers　　bully　　is unacceptable
　　　b.　Peters/??Zijn~Agent~ behandelen　van de patiënt~Theme~　kost　veel tijd.
　　　　　Peter's/their　　treat　　of the patient　　　takes　much time
　　　　　'Peter's/Their treatment of the patient takes a lot of time.'
　　　b′.　*?Peters/Hun~Agent~ patiënten~Theme~ behandelen kost　veel tijd.
　　　　　Peter's/their　patient　　　treat　　　takes　much time

C. INF-*nominalizations with only the agent argument expressed*

The examples in (278) show that DET-INF nominalizations with transitive base verbs require the presence of a theme argument, regardless of whether an agent argument is present.

(278) a.　*Het treiteren　(door die grote jongens~Agent~) is onaanvaardbaar.
　　　　　the bully　　by big boys　　　　　　　is unacceptable
　　　b.　*Het behandelen　(door de arts~Agent~) kost　veel tijd.
　　　　　the treat　　　by the doctor　　takes　much time

For some speakers, however, example (278a) improves when the agent is expressed by means of a *van*-PP, as in (279a′). This may be due to the fact that in such cases the verb is derived from the pseudo-intransitive (generic) verb in (279a). When the verb does not readily allow such a generic reading, as is the case with *behandelen* 'to treat' in (279b), the corresponding INF-nominalization is also unacceptable when the theme is not expressed. In what follows we will, for the sake of simplicity, ignore the pseudo-intransitive use of nominalizations.

(279) a.　Die jongens treiteren graag.
　　　　　those boys　bully　　gladly
　　　　　'Those boys like bullying.'
　　　a′.　$^{*?}$Dat treiteren van die jongens$_{Ag}$ is onaanvaardbaar.
　　　　　this bullying of those boys　　is unacceptable
　　　b.　$^{??}$Die arts　behandelt vakkundiger　dan de meesten.
　　　　　that doctor treats　　more.competently than the most
　　　b′.　*Het behandelen van die arts$_{Ag}$ is vakkundiger　dan dat van de meesten.
　　　　　the treating　　of that doctor is more.competent than that of the most

Unlike with DET-INF nominalizations, in BARE-INF nominalizations the theme argument can often be left unexpressed in the presence of an agentive *door*-phrase. The examples in (280) show that this is even possible in the presence of a specific agent argument, although similar constructions with a nonspecific agent are noticeably better. Note that in these sentences the implied theme argument is either generic or contextually determined. With regard to sentence (280b), it also needs to be mentioned that the implied theme argument is not so much the patient, but rather the ailment treated.

(280) a.　Treiteren door ($^{??}$die) grote jongens$_{Agent}$ is onaanvaardbaar.
　　　　　bully　　by those big boys　　　　is unacceptable
　　　　　'Bullying by (those) big boys is unacceptable.'
　　　b.　Behandelen door een/$^{??}$de arts$_{Agent}$ kost veel tijd.
　　　　　treat　　　by a/the doctor　　takes much time
　　　　　'Treatment by a/the doctor takes a lot of time.'

IV. INF-*nominalization of ditransitive verbs*

This subsection considers INF-nominalizations derived from ditransitive verbs like *geven* 'to give', *schenken* 'to donate', *overdragen* 'to hand over', *verschaffen* 'to provide', *uitreiken* 'to present' (verbs of transfer) and *meedelen* 'to announce', *zeggen* 'to say', *beloven* 'to promise', *leren* 'to teach' (verbs of communication). As in the verbal domain, it is possible with INF-nominalizations to express all three arguments. In actual practice, however, such occurrences are very rare. More often one (typically the agent) or two (the agent and the recipient) of the arguments are left unexpressed. We will start by discussing those cases in which only the theme is expressed. This is followed by a discussion of those cases where either the agent or the recipient is expressed. We conclude by giving some examples in which all arguments are realized.

A. Ditransitive INF-nominalizations with the theme argument expressed

The (a)-examples in (281) show that, as in the case of BARE-INF nominalizations derived from transitive verbs, BARE-INF nominalizations derived from ditransitive verbs prefer the theme to be realized as a prenominal noun phrase; realizing the theme as a postnominal *van*-PP is possible but marked. And, again, BARE-INF nominalizations are not acceptable with specific themes. This is shown by the (b)-examples in (281).

(281)　　• BARE-INF: prenominal NP$_{Theme}$; postnominal *van*-PP$_{Theme}$
　　　a.　??Geven van cadeaus　op 5 december　is een oude traditie.
　　　　　give　of presents　　on 5 December　is an old tradition
　　　a′.　Cadeaus　geven　op 5 december　is een oude traditie.
　　　　　presents　give　　on 5 December　is an old tradition
　　　　　'Giving presents on 5 December is an old tradition.'
　　　b.　*Uitreiken　van de prijzen　duurde　lang.
　　　　　present　　of the prizes　took　　long
　　　b′.　*De prijzen　uitreiken　duurde　lang.
　　　　　the prizes　present　took　　long

The examples in (282) show that the theme argument of DET-INF nominalizations preferably takes the form of a *van*-PP following the head; realizing the theme in the form of a noun phrase preceding the head is also acceptable, provided that we are dealing with a generic context; prenominal definite themes give rise to a severely degraded result.

(282)　　• DET-INF: postnominal *van*-PP$_{Theme}$; prenominal NP$_{Theme}$
　　　a.　Dat geven　van cadeaus　op 5 december　is een oude traditie.
　　　　　that give　of presents　　on 5 December　is an old tradition
　　　　　'This giving of presents on 5 December is an old tradition.'
　　　a′.　?Dat cadeaus geven　op 5 december　is een oude traditie.
　　　　　that presents give　　on 5 December　is an old tradition
　　　　　'This giving of presents on 5 December is an old tradition.'
　　　b.　Dat uitreiken　van de prijzen　duurde　lang.
　　　　　that present　of the prizes　took　　long
　　　　　'This presenting of the prizes took a long time.'
　　　b′.　Dat ?(*de) prijzen　uitreiken　duurde　lang.
　　　　　that　the prizes　present　took　　long
　　　　　'This presenting of the prizes took a long time.'

B. INF-nominalizations with the agent and the theme argument expressed

In DET-INF nominalizations, the agent can be expressed as a second argument in the form of a *door*-PP. Example (283a) shows that the agentive *door*-PP follows both the head noun and the postverbal theme argument. When the theme argument takes the form of a prenominal noun phrase, as in (283b), the agentive *door*-PP may occur in postnominal position.

(283)   • DET-INF: NP$_{Theme}$/*van*-PP$_{Theme}$ + postnominal *door*-PP$_{Agent}$
     a.   Dat geven van (de) cadeaus$_{Theme}$ door Sinterklaas$_{Agent}$ is een oude traditie.
         that give   of the presents   by Santa Claus   is an old tradition
         'The/This giving of the presents by Santa Claus is an old tradition.'
     b. $^?$Dat cadeaus$_{Theme}$ geven door Sinterklaas$_{Agent}$ is een oude traditie.
         that presents   give   by Santa Claus   is an old tradition

The examples in (284) show, however, that BARE-INF nominalizations cannot realize the agent, no matter the form of the theme or the word order.

(284)   • BARE-INF: NP$_{Theme}$/*van*-PP$_{Theme}$ + postnominal *door*-PP$_{Agent}$
     a.   *Geven van cadeaus$_{Theme}$ door Sinterklaas$_{Agent}$ is een oude traditie.
         give   of presents   by Santa Claus   is an old tradition
     b.   *Cadeaus$_{Theme}$ geven door Sinterklaas$_{Agent}$ is een oude traditie.
         presents   give   by Santa Claus   is an old tradition

    Although this is less preferred, in DET-INF nominalizations the agent can also be realized by means of a genitive phrase or a possessive pronoun when the theme is realized as a postnominal *van*-PP, as in (285a). This gives rise to a less felicitous result, however, when the theme is realized as a prenominal noun phrase, as in (285b), which may be due to the fact that the intended reading is blocked by the more prominent reading in which the possessive pronoun is construed as the possessor of theme *cadeaus*.

(285)   • DET-INF: Genitive NP/possessive pronoun$_{Agent}$ + Theme
     a. $^?$Zijn geven van (de) cadeaus$_{Theme}$ is een oude traditie.
         his give   of the presents   is an old tradition
         'His giving of the presents by Santa Claus is an old tradition.'
     b. $^#$Zijn cadeaus$_{Theme}$ geven is een oude traditie.
         that presents   give   is an old tradition

C. INF-nominalizations with the theme and the recipient argument expressed

Example (286) shows that in clauses with ditransitive verbs, the recipient either appears as an *aan*-PP following the theme or as a dative noun phrase preceding the theme, as in (286b). The word order is normally as indicated, although placement of the *aan*-PP in front of the theme is possible when the recipient is assigned contrastive accent.

(286) a.   dat Sinterklaas de cadeaus aan de kinderen heeft gegeven.
         that Santa Claus the presents to the children   has   given
         'that Santa Claus has given the presents to the children.'
     b.   dat Sinterklaas de kinderen de cadeaus heeft gegeven.
         that Santa Claus the children the presents has given
         'that Santa Claus has given the children the presents.'

In INF-nominalizations the recipient can also be realized either as a noun phrase or an *aan*-PP: the former must precede the INF-noun, whereas the latter can either precede of follow it. First consider the case of BARE-INF nominalizations. The primeless examples in (287) show that both the theme and the recipient can be

realized as prenominal noun phrases, provided that they are both indefinite. Nevertheless, there seems to be some preference to realize the recipient as an *aan*-PP following the theme, as in the primed examples. Placing the *aan*-PP in front of the theme is possible, provided that it is given contrastive accent.

(287)   • BARE-INF: prenominal NP$_{Theme}$ + NP$_{Rec}$/*aan*-PP$_{Rec}$
  a. $^?$Kinderen$_{Rec}$ cadeaus$_{Theme}$ geven is een oude traditie.
        children   presents   give   is an old tradition
        'Giving presents to children is an old tradition.'
  a′.   Cadeaus$_{Theme}$ < aan kinderen$_{Rec}$> geven <aan kinderen$_{Rec}$> is traditie.
        presents   to children   give   is tradition
        'Giving presents to children is a tradition.'
  b. $^?$Winnaars$_{Rec}$ prijzen$_{Theme}$ uitreiken duurt altijd lang.
        winners   prizes   present   takes always long
        'Presenting prizes to winners always takes a long time.'
  b′.   Prijzen$_{Theme}$ <aan winnaars$_{Rec}$> uitreiken <aan winnaars$_{Rec}$> duurt lang.
        prizes   to winners   present   takes long
        'Presenting prizes to winners always takes a long time.'

When the theme argument is expressed as a postnominal *van*-PP, the recipient cannot be realized as a prenominal noun phrase; the primeless examples in (287) are ungrammatical. The primed examples show that expressing the recipient as an *aan*-PP is possible, provided that it follows the *van*-PP. As usual, examples like (288b′) are marked compared to examples like (287b′) with a prenominal theme.

(288)   • BARE-INF: postnominal *van*-PP$_{Theme}$ + *aan*-PP$_{Rec}$/NP$_{Rec}$
  a.   *Kinderen$_{Rec}$ geven van cadeaus$_{Theme}$ is een oude traditie.
        children   give   of present   is an old tradition
  a′. $^?$Geven van cadeaus$_{Theme}$ aan kinderen$_{Rec}$ is een oude traditie.
        give   of presents   to children   is an old tradition
        'Giving of presents to children is an old tradition.'
  b.   *Winnaars$_{Rec}$ uitreiken van de prijzen$_{Theme}$ duurde lang.
        winners   present   of the prizes   took   long
        'This presenting if the prizes to the winners took a long time.'
  b′.   Uitreiken van prijzen$_{Theme}$ aan de winnaars$_{Rec}$ duurt lang.
        present   of prizes   to the winners   takes long
        'This presenting if the prizes to the winners takes a long time.'

In DET-INF nominalizations, the form of the recipient is related to the form of the theme in the same way as in BARE-INF nominalizations. The examples in (289) show that the recipient must be realized as a postnominal *aan*-PP when the theme is a postnominal *van*-PP. The word order is rigid in this case: the *aan*-PP must follow both the noun and the postnominal *van*-PP.

(289)   • DET-INF: postnominal *van*-PP$_{Theme}$ + *aan*-PP$_{Rec}$/NP$_{Rec}$

    a.   *Dat kinderen$_{Rec}$ geven van cadeaus$_{Theme}$ is een oude traditie.
          that children   give of present   is an old tradition

    a′. Dat geven van cadeaus$_{Theme}$ aan de kinderen$_{Rec}$ is een oude traditie.
          that give   of presents   to the children   is an old tradition
          'This giving of the presents to the children is an old tradition.'

    b.   *Dat winnaars$_{Rec}$ uitreiken van de prijzen$_{Theme}$ duurde lang.
          that winners   present of the prizes   took   long

    b′. Dat uitreiken van de prijzen$_{Theme}$ aan de winnaars$_{Rec}$ duurde lang.
          that present of the prizes   to the winners   took   long
          'This presenting of the prizes to the winners took long.'

If the theme is realized as a prenominal noun phrase, the recipient can be expressed either by means of an *aan*-PP or a prenominal noun phrase. Again, there seems to be some preference for the former. Note that when the *aan*-PP occurs in prenominal position it is normally nonspecific, just like the prenominal theme; this restriction does not hold for the postnominal *aan*-PP. Thus, replacing the nonspecific recipient *aan kinderen* by the specific recipient *aan de kinderen* is readily possible in (290a″), but gives rise to a marked result in (290a′). Finally, note that placing the *aan*-PP in front of the prenominal theme is possible, provided that it is given contrastive accent.

(290)   • DET-INF: prenominal NP$_{Theme}$ + NP$_{Rec}$/*aan*-PP$_{Rec}$

    a. $^{?}$Het kinderen$_{Rec}$ cadeaus$_{Theme}$ geven is een oude traditie.
          the children   presents   give   is an old tradition
          'The giving of presents to children is an old tradition.'

    a′. Het cadeaus$_{Theme}$ aan ($^{?}$de) kinderen$_{Rec}$ geven is een oude traditie.
          the presents   to the children   give   is an old tradition

    a″. Het cadeaus$_{Theme}$ geven aan (de) kinderen$_{Rec}$ is een oude traditie.
          the presents   give   to the children   is an old tradition

    b. $^{?}$Dat winnaars$_{Rec}$ prijzen$_{Theme}$ uitreiken duurt altijd   lang.
          that winners   prizes   present   takes always long
          'that presenting of prizes to winners always takes a long time.'

    b′. Dat prijzen$_{Theme}$ aan ($^{?}$de) winnaars$_{Rec}$ uitreiken duurt lang.
          that prizes   to the winners   present   takes long

    b″. Dat prijzen$_{Theme}$ uitreiken aan (de) winnaars$_{Rec}$ duurt lang.
          that prizes   present   to the winners   takes long

D. Ditransitive INF-nominalizations with all three arguments expressed

When all three arguments are expressed, there are many conceivable combinations, but given the earlier discussion we expect only a few to be acceptable, and even these will rarely be encountered (except perhaps in written, formal language). This is especially true for BARE-INF nominalizations: since we have seen in Subsection B, that agentive *door*-PPs give rise to a severely degraded result in these constructions, we expect expression of all three arguments to be impossible. The examples in (291) show that this expectation is indeed borne out.

(291)   • BARE-INF: not possible to express all three arguments
   a. *Kinderen$_{Rec}$ cadeaus$_{Theme}$ geven door Sinterklaas$_{Agent}$ is een oude traditie.
        children   presents   give   by Santa Claus   is an old tradition
        'The giving of presents to children by Santa Claus is an old tradition.'
   b. *Cadeaus$_{Theme}$ geven aan kinderen$_{Rec}$ door Sinterklaas$_{Agent}$ is ...
        presents   give   to children   by Santa Claus   is ...
   b′. *Geven van cadeaus$_{Theme}$ aan kinderen$_{Rec}$ door Sinterklaas$_{Agent}$ is ...
        give   of presents   to children   by Santa Claus   is ...

This leaves us with DET-INF nominalizations. We have seen in Subsection B
that the *door*-PP must follow the postnominal *van*-PP expressing the theme, and in
Subsection C we have seen that the same thing holds for the *aan*-PP expressing the
recipient. We therefore correctly predict that the same holds for cases where all
arguments are expressed. The examples in (292) show that the preferred order is
indeed the one in which the recipient precedes the agent.

(292)   • DET-INF: postnominal *van*-PP$_{Theme}$ + *aan*-PP$_{Rec}$ + *door*-PP$_{Agent}$
   a. Dat geven van cadeaus$_{Theme}$ aan kinderen$_{Rec}$ door Sinterklaas$_{Agent}$ is ...
        that give   of presents   to children   by Santa Claus   is ...
        'This giving of presents to children by Santa Claus is an old tradition.'
   b. $^{??}$Dat geven van cadeaus$_{Theme}$ door Sinterklaas$_{Agent}$ aan kinderen$_{Rec}$ is ...
        that give   of presents   by Santa Claus   to children   is ...

We have also seen in Subsection C that when the theme is realized as a
prenominal noun phrase, the recipient can be realized either as a (pre- or
postnominal) *aan*-PP or as a prenominal noun phrase. Since the agentive *door*-PP
must be postnominal, this correctly predicts the following orders to be possible. All
examples are somewhat marked, just like the corresponding examples without the
recipient given in Subsection C.

(293)   • DET-INF: prenominal NP$_{Theme}$ + NP$_{Rec}$/*aan*-PP$_{Rec}$ + postnominal *door*-PP$_{Agent}$
   a. $^{?}$Dat kinderen$_{Rec}$ cadeaus$_{Theme}$ geven door Sinterklaas$_{Agent}$ is ...
        that children   presents   give   by Santa Claus   is ...
        'This giving of presents to children by Santa Claus is an old tradition.'
   b. $^{?}$Dat cadeaus$_{Theme}$ geven aan kinderen$_{Rec}$ door Sinterklaas$_{Agent}$ is ...
        that presents   give   to children   by Santa Claus   is ...
        'This giving of presents to children by Santa Claus is an old tradition.'
   b′. $^{?}$Dat cadeaus$_{Theme}$ aan kinderen$_{Rec}$ geven door Sinterklaas$_{Agent}$ is ...
        that presents   to children   give   by Santa Claus   is ...

The examples in (292) and (293) exhaust the options; all other orders lead to a
severe decrease in acceptability. Realizing the agent as a genitive noun phrase or a
possessive pronoun seems possible, although it does gives rise to a somewhat
marked result. The intended reading of (294b&c) seems to be hampered by the
more prominent reading in which the possessive pronoun is construed as the
possessor of the presents/children.

(294)   • DET-INF: Genitive NP/possessive pronoun$_{Agent}$ + Theme + Recipient
  a. $^?$Zijn geven van cadeaus$_{Theme}$ aan kinderen$_{Rec}$ is een oude traditie.
       his ` give   of presents   to children   is an old tradition
       'His giving of presents to children is an old tradition.'
  b. $^\#$Zijn cadeaus$_{Theme}$ <aan kinderen$_{Rec}$> geven <aan kinderen$_{Rec}$> is ...
       his presents   to children   give   is ...
       'His giving presents to children is an old tradition.'
  c. $^\#$Zijn kinderen$_{Rec}$ cadeaus$_{Theme}$ geven is een oude traditie.
       his children   presents   give   is an old tradition
       'His giving presents to children by Santa Claus is an old tradition.'

V. INF-nominalizations of verbs selecting a prepositional argument

This section discusses INF-nominalizations derived from verbs selecting a PP-complement. We start with those cases in which the argument of the PP has the role of theme. This is followed by some cases in which the argument has some other semantic role.

A. INF-nominalizations with a theme PP

INF-nominalizations also inherit PP-themes from their base verb. Examples are such verbs as *zoeken naar* 'to search for' and *jagen op* 'to hunt for', which select their own specific preposition. The inherited PP-themes seem to have the same distribution within the INF-nominalizations as their nominal counterparts. First and foremost, the PP-theme can occur in prenominal position. Second, if it is placed postnominally, it must precede the (optional) agentive *door*-phrase.

(295)   • BARE-INF: PP$_{Theme}$ + postnominal *door*-PP$_{Agent}$
  a.   Op groot wild$_{Theme}$ jagen (door adellijke heren$_{Agent}$) is verachtelijk.
       on big game   hunt   by noble gentlemen   is despicable
       'Hunting of big game by noble gentlemen is despicable.'
  b.   Jagen   op groot wild$_{Theme}$ (door adellijke heren$_{Agent}$) is verachtelijk.
       hunt   on big game   by noble gentlemen   is despicable
       'Hunting of big game by noble gentlemen is despicable.'

(296)   • DET-INF: PP$_{Theme}$ + postnominal *door*-PP$_{Agent}$
  a.   Dat op groot wild$_{Theme}$ jagen (door adellijke heren$_{Agent}$) is verachtelijk.
       that on big game   hunt   by noble gentlemen   is despicable
       'This hunting of big game is despicable.'
  b.   Dat jagen op groot wild$_{Theme}$ (door adellijke heren$_{Agent}$) is verachtelijk.
       that hunt on big game   by noble gentlemen   is despicable
       'This hunting of big game by noble gentlemen is despicable.'

The main difference with INF-nominalizations derived from transitive verbs concerns the selection of the preposition: just like its base verb, the INF-nominalization *jagen* selects an *op*-PP and, consequently, the theme argument does not appear as a *van*-PP. Since the preposition *op* is selected by the noun, it must of course also be present when the PP is in prenominal position.

    In DET-INF nominalizations the agent-PP can sometimes take the form of a *van*-PP, although the result may be considered slightly marked. The availability of this

option may be due to the fact that the theme-PP is not introduced by *van* in these constructions. Note that the construction in (297b), with the theme realized in postnominal position, is ambiguous: the *van*-PP can be interpreted either as an agentive complement of the head noun, or as a possessor of the noun phrase *groot wild* 'big game'. For this reason, the preferred order may be the one given in (297c), where only the agentive reading is available.

(297)   • DET-INF: PP$_{Theme}$ + postnominal *van*-PP$_{Agent}$
   a. $^?$Het op groot wild$_{Theme}$ jagen (van adellijke heren$_{Agent}$) is verachtelijk.
         the on big game   hunt by noble gentlemen   is despicable
         'The hunting of big game by noble gentlemen should be prohibited.'
   b. $^{??}$Het jagen op groot wild$_{Theme}$ (van adellijke heren$_{Agent}$) is verachtelijk.
         the hunt on big game   of noble gentlemen   is despicable
   c. $^?$Het jagen (van adellijke heren$_{Agent}$) op groot wild$_{Theme}$ is verachtelijk.
         the hunt of noble gentlemen   on big game   is despicable

The examples in (298) show that the option of expressing the agent by means of a *van*-PP is not available in BARE-INF constructions. Given that postmodification by means of a *van*-PP is a property of nouns rather than verbs, this contrast might be due to the fact that BARE-INF constructions are more nominal in character than DET-INF constructions; cf. Table 17 in Section 1.3.1.6.

(298)   • BARE-INF: *PP$_{Theme}$ + postnominal *van*-PP$_{Agent}$
   a.   *Op groot wild$_{Theme}$ jagen (van adellijke heren$_{Agent}$) is verachtelijk.
          on big game   hunt by noble gentlemen   is despicable
   b.   *Jagen op groot wild$_{Theme}$ (van adellijke heren$_{Agent}$) is verachtelijk.
          hunt   on big game   of noble gentlemen   is despicable
   c.   *Jagen (van adellijke heren$_{Agent}$) op groot wild$_{Theme}$ is verachtelijk.
          hunt   of noble gentlemen   on big game   is despicable

B. INF-nominalizations with other complement PPs

The verb *aanbevelen* 'recommend' in (299) selects a *voor*-PP as its third argument. As with recipient third arguments realized as *aan*-PPs, INF-nominalizations select the same preposition as the input verb (in this case *voor*). Examples like this differ from those with recipient arguments in that the PP-complement does not alternate with a noun phrase.

(299) a.   dat de commissie (de) bejaarden$_{Th}$ voor de baan heeft aanbevolen.
           that the committee the senior citizens for the job   has   recommended
           'that the committee has recommended (the) elderly people for the job.'
   b.   *dat de commissie de baan (de) bejaarden$_{Rec}$ heeft aanbevolen.
           that the committee the job the senior citizens has   recommended
           'that the committee has recommended the job to (the) elderly people.'

Given that (299b) is unacceptable it does not come as a surprise that the inherited PP-complement must also be realized as a *voor*-PP in the corresponding BARE-INF nominalization. Example (300a) shows that with a prenominal theme the *voor*-PP can be realized either before or after the INF-noun. When the theme is realized as a postnominal *van*-PP, the *voor*-PP must also be postnominal and be placed after the

van-PP (unless it is assigned contrastive accent, in which case it can marginally be placed between the noun and the *van*-PP).

(300)   • BARE-INF: NP/PP_Theme + PP-complement
    a. Bejaarden_Theme <voor deze baan> aanbevelen <voor deze baan> is slim.
        senior citizens for this job recommend is smart
        'Recommending elderly people for this job is not very useful.'
    b. $^?$Aanbevelen van bejaarden_Theme voor deze baan is slim.
        recommend of senior citizens for this job is smart

In DET-INF nominalizations we find more or less the same pattern, although in this case expression of the theme as a postnominal *van*-PP is preferred, as always.

(301)   • DET-INF: NP/PP_Theme + PP-complement
    a. Het aanbevelen van bejaarden_Theme voor deze baan is slim.
        the recommend of senior citizens for this job is smart
        'The recommending of elderly people for this job is smart.'
    b. $^?$Het bejaarden_Theme <voor deze baan> aanbevelen <voor deze baan> is slim.
        the senior citizens for this job recommend is smart
        'The recommending of elderly people for this job is smart.'

VI. INF-nominalizations taking a complementive

INF-nominalizations are the only type of nominalization that readily accepts verbs selecting a °complementive (predicative complement) as their input. Comparison between BARE-INF and DET-INF nominalizations reveals an interesting pattern: whereas DET-INF nominalizations yield the best results when the °logical SUBJECT of the complementive appears as a postnominal *van*-PP, BARE-INF nominalizations require the SUBJECT to appear as a prenominal noun phrase. In addition, we will discuss an interesting difference between adjectival complementives and complementives introduced by the prepositions *tot* 'to' and *als* 'as'.

A. INF-nominalizations taking an adjectival complementive

Example (302) shows that complementives must precede and be adjacent to the verbs in clause-final position.

(302) a. Dat Jan Marie <onaardig> vindt <*onaardig> komt voort uit jaloezie.
        that Jan Marie unkind considers comes prt. from jealousy
        'That Jan doesn't like Marie is the result of jealousy.'
    b. Dat Jan de deuren <rood> schildert <*rood> verbaast ons zeer.
        that Jan the doors red paints surprises us much
        'We are surprised that Jan paints the doors red.'
    c. Dat hij haar ideeën <leuk> vindt <*leuk> is opmerkelijk.
        that he her ideas nice considers is remarkable
        'That he considers her ideas nice is remarkable.'

A similar fact can be found in BARE-INF nominalizations: the primeless examples in (303) show that the complementive immediately precedes the derived noun. Furthermore, the SUBJECT of the predicate must be realized as a prenominal noun

phrase; using a postnominal *van*-PP, as in the primed examples, leads to an unacceptable result (regardless of the actual placement of the complementive).

(303)　● BARE-INF: prenominal NP + prenominal complementive
　　a.　Marie <onaardig> vinden <*onaardig> komt　voort uit jaloezie.
　　　　Marie unkind　consider　　　　　comes prt.　from jealousy
　　　　'Considering Marie unkind is the result of jealousy.'
　　a′.　*Onaardig　vinden van Marie komt voort　uit jaloezie.
　　b.　Deuren <rood> schilderen <*rood>　is een leuke bezigheid.
　　　　doors　red　paint　　　　　　　is a nice pastime
　　　　'Painting the doors red is a nice pastime.'
　　b′.　*Rood schilderen van deuren is een leuke bezigheid.
　　c′.　Haar ideeën　<leuk>　vinden <*leuk>　is opmerkelijk.
　　　　her ideas　　nice　consider　　　is remarkable
　　c′.　*Leuk vinden van haar ideeën is opmerkelijk.

DET-INF nominalizations also require the complementive to be in prenominal position, but differ from BARE-INF nominalizations in that they prefer a postnominal *van*-PP; realizing the SUBJECT as a prenominal noun phrase is at least marginally possible but requires a generic context, as in (304b′).

(304)　● DET-INF: prenominal complementive + postnominal *van*-PP
　　a.　Het <onaardig> vinden　　van Marie komt　voort uit jaloezie.
　　　　the unkind　　consider of Marie　comes prt.　from jealousy
　　a′.　*?Het Marie <onaardig> vinden komt voort uit jaloezie.
　　b.　?Het <rood>　schilderen van deuren　is een leuke bezigheid.
　　　　the　red　　paint　　　of doors　　is a nice pastime
　　b′.　Het deuren <rood> schilderen is een leuke bezigheid.
　　c.　Het <leuk> vinden　　van haar ideeën is opmerkelijk.
　　　　the　nice　consider of her ideas　　is remarkable
　　c′.　*?Het haar ideeën <leuk> vinden is opmerkelijk.

B. INF-nominalizations taking complementives introduced by tot *and* als

Example (305) shows that complementives introduced by a preposition like *tot* or *als* differ from the complementives discussesed in the previous subsection in that they can be placed either before or after the deverbal head.

(305) a.　Dat zij　Jan　<tot voorzitter>　benoemden <tot voorzitter> was verstandig.
　　　　that they Jan　to chairman　elected　　　　　　　　was wise
　　　　'That they elected Jan chairman was wise.'
　　b.　Dat　hij　zijn grootste vijand <als zijn vriend> beschouwt <als zijn vriend>
　　　　that he　his greatest enemy　as his friend　　considers
　　　　is dwaas.
　　　　is foolish
　　　　'That he considered his greatest enemy as his friend is foolish.'

In INF-nominalizations we seem to find the same possibilities: for many speakers the *tot*/*als*-phrase can occur either pre- or postnominally; for some speakers, however, placing the *tot*/*als*-phrase after the nominal infinitive leads to a somewhat

degraded result. In (306), some examples are given of BARE-INF nominalizations; as with the adjectival complementives, the SUBJECT must be realized as a prenominal noun phrase, regardless of the placement of the *tot/als*-phrase.

(306) • BARE-INF: prenominal NP + *tot/als*-phrase

    a. Jan <tot voorzitter> benoemen <$^{%}$tot voorzitter> was een slimme zet.
         Jan to chairman appoint was a smart move
         'Appointing Jan chairman was a smart move.'

    a′. *<Tot voorzitter> benoemen van Jan <tot voorzitter> was een slimme zet.

    b. Je grootste vijand <als je vriend> beschouwen <$^{%}$als je vriend> is dwaas.
         your greatest enemy as your friend consider is foolish
         'Considering your greatest enemy as your friend is not wise.'

    b′. *<Als je vriend> beschouwen van je grootste vijand <als je vriend> is dwaas.

Example (307) provides the corresponding DET-INF nominalizations, and shows that using a postnominal *van*-PP is preferred in non-generic contexts like (307a), whereas it is at least possible to use a prenominal noun phrase in generic contexts like (307b). Note that the postnominal *tot/als*-phrase cannot precede the *van*-PP: *het benoemen tot voorzitter van Jan*; *het beschouwen als je vriend van je grootste vijand*.

(307) a. Het <tot voorzitter> benoemen van Jan <$^{%}$tot voorzitter> was verstandig.
         the to chairman appoint of Jan was wise
         'Appointing Jan chairman was wise.'

    a′. *$^?$Het Jan <tot voorzitter> benoemen <tot voorzitter> was verstandig.

    b. Het <als je vriend> beschouwen van je grootste vijand <$^{%}$als je vriend>
         the as your friend consider of your greatest enemy
         is dwaas.
         is foolish
         'Considering your worst enemy as your friend is not wise.'

    b′. $^?$Het je grootste vijand <als je vriend> beschouwen <als je vriend> is dwaas.

To conclude, note that even those speakers that object to the postnominal placement of the *tot/als*-phrase in the examples above accept it in the case of a more complex *tot/als*-PP. In those cases, the postnominal position is perfectly acceptable, and perhaps even preferable.

(308) a. $^{(?)}$Jan tot voorzitter van de vereniging benoemen is verstandig.
         Jan to chairman of the association appoint is sensible
         'Appointing Jan chairman of the association is sensible.'

    a′. Jan benoemen tot voorzitter van de vereniging is dwaas.

    b. $^{(?)}$Het tot voorzitter van de vereniging benoemen van Jan is verstandig.
         the to chairman of the association appoint of Jan is sensible

    b′. Het benoemen van Jan tot voorzitter van de vereniging is verstandig.

VII. Conclusion

This section has shown that in both DET-INF and BARE-INF nominalizations the arguments of the input verb function are inherited by the derived nominal. It has further investigated how these arguments can be realized in the pertinent INF-nominalizations. Here we will summarize the main findings.

A. INF-*nominalizations derived from intransitive verbs*

The agent argument of intransitive verbs is optionally expressed in the form of a postnominal *van*-PP. Alternatively, the agent can be expressed by means of a genitive noun phrase or possessive pronoun. The most common patterns are therefore as given in (309).

(309) Common patterns of INF-nominalizations derived from intransitive verbs

BARE-INF	N (+ *van*-PP_{Agent})	*wandelen* (*van zieken*)
		'walking of sick people'
DET-INF	DET + N (+ *van*-PP_{Agent})	*het wandelen* (*van de zieken*)
		'the walking (of the sick)'
	(NP*s*/pronoun_{Agent}) + N	(*zijn/Jans*) *wandelen*
		'Jan's walking'

B. INF-*nominalizations derived from monadic unaccusative verbs*

In DET-INF nominalizations, the theme argument of unaccusative verbs is optionally expressed in the form of a postnominal *van*-PP. This option is, however, not readily available in BARE-INF nominalizations. Expressing the theme by means of a genitive noun phrase or possessive pronoun gives rise to a marginal result.

(310) Common patterns of INF-nominalizations derived from unaccusative verbs

BARE-INF	N + *van*-PP_{Theme}	$^{??}$*vallen van bladeren*
		'falling of leaves'
DET-INF	DET + N + *van*-PP_{Theme}	*het vallen van de bladeren*
		'the falling of the leaves'
	NP*s*/pronoun_{Theme} + N	$^{?}$*hun vallen*
		'their falling'

C. INF-*nominalizations derived from monotransitive verbs*

With INF-nominalizations derived from transitive verbs, the theme argument is obligatorily present (when it has specific reference). The theme may precede the derived noun, in which case it is assigned accusative case and appears in the form of a noun phrase, or it may follow the head, in which case it appears as a *van*-PP. The use of a prenominal noun phrase is the preferred option in BARE-INF nominalizations, whereas the use of a postnominal *van*-PP is the preferred option in DET-INF nominalizations. The theme argument of BARE-INF nominalizations is normally nonspecific. This also holds for the prenominal noun phrase (but not the postnominal *van*-PP) in DET-INF nominalizations. The theme argument cannot be expressed by means of a genitive noun phrase or a possessive pronoun.

(311) Common patterns of INF-nominalizations derived from transitive verbs

BARE-INF	NP$_{Theme}$ + N	*patiënten behandelen* 'treating patients'
	N + *van*-PP$_{Theme}$	$^?$*behandelen van patiënten* 'treating of patients'
DET-INF	DET + N + *van*-PP$_{Theme}$	*het treiteren van de kleuters* 'the bullying of the toddlers'
	DET + NP$_{Theme}$ + N	$^?$*het kleuters treiteren* 'the bullying of toddlers'

D. *INF-nominalizations derived from ditransitive verbs*

With INF-nominalizations derived from ditransitive verbs, recipients can be optionally expressed either by means of a prenominal noun phrase or by a (pre- or postnominal) *aan*-PP: the former requires that the theme is also expressed by means of a prenominal noun phrase, whereas the latter can be used both with a prenominal NP-theme and with a postnominal *van*-PP. The prenominal NP-recipient must precede the NP-theme, whereas the *aan*-PP normally follows the theme (regardless of whether the theme is realized as a noun phrase or a *van*-PP). The arguments of BARE-INF nominalizations are normally nonspecific. This also holds for the prenominal noun phrases (but not the postnominal PPs) in DET-INF nominalizations.

(312) Common patterns of INF-nominalizations derived from ditransitive verbs

BARE-INF	(NP$_{Rec}$ +) NP$_{Theme}$ + N	(*kinderen*) *cadeaus geven* 'giving (children) presents'
	NP$_{Theme}$ (+ *aan*-PP$_{Rec}$) + N	*cadeaus* (*aan kinderen*) *geven* 'giving presents (to children)'
	NP$_{Theme}$ + N (+ *aan*-PP$_{Rec}$)	*cadeaus geven* (*aan kinderen*) 'giving presents (to children)'
	N + *van*-PP$_{Theme}$ (+ *aan*-PP$_{Rec}$)	$^?$*geven van cadeaus* (*aan kinderen*) 'giving of the presents (to children)'
DET-INF	DET + N + *van*-PP$_{Theme}$ (+ *aan*-PP$_{Rec}$)	*het geven van de cadeaus* (*aan de kinderen*) 'the giving of the presents (to the children)'
	DET (+ NP$_{Rec}$) + NP$_{Theme}$ + N	$^?$*het* (*kinderen*) *cadeaus geven* 'the giving of presents (to children)'

E. *INF-nominalizations derived from verbs selecting a PP-complement*

INF-nominalizations derived from verbs with a PP-argument take a PP with the same preposition. The PP may appear either pre- or postnominally, just like it can appear pre- or postverbally in the corresponding verbal constructions.

(313) Common patterns of INF-nominalizations derived from verbs with PP-complement

BARE-INF	N + PP$_{Theme}$	*jagen op herten* 'hunting deer'
	PP$_{Theme}$ + N	*op herten jagen* 'hunting deer'
DET-INF	DET + N + PP$_{Theme}$	*het jagen op herten* 'the hunting of deer'
	DET + PP$_{Theme}$ + N	*het op herten jagen* 'the hunting of deer'

F. INF-nominalizations derived from verbs selecting a complementive

INF-nominalizations derived from verbs involving a °complementive reveal an interesting opposition between DET-INF and BARE-INF nominalizations: whereas DET-INF nominalizations prefer the theme argument to appear postnominally in the form of a *van*-PP, BARE-INF nominalizations require the theme argument to appear as a prenominal noun phrase. The complementive must appear prenominally. just as it must be preverbally in the corresponding verbal constructions.

(314) Common patterns of INF-nominalizations derived from verbs with complementive

BARE-INF	NP + PRED + N	*Marie aardig vinden* 'liking Marie'
DET-INF	DET + PRED + N + *van*-PP	*het aardig vinden van Marie* 'liking Marie'
	DET + NP + PRED + N	$^?$*het Marie aardig vinden* 'liking Marie'

G. The distribution of agentive *van-* and *door-phrases*

The form of the agent argument depends on the °adicity of the base verb. If the input verb is intransitive or unaccusative, the agent typically appears postnominally as a *van*-PP; see Subsection A. In all other cases the agent typically appears as an optional *door*-phrase following all other arguments. Agentive *door*-phrases only occur in DET-INF nominalizations: BARE-INF nominalizations with an agentive *door*-phrase are always degraded. In DET-INF nominalizations the agent may also be realized as a genitive noun phrase or possessive pronoun.

(315) Common patterns of INF-nominalizations with an agentive *door*-phrase

BARE-INF	NP + N	*boeken lezen* (**door Jan*) 'reading books'
DET-INF	DET + N + *van*-PP (+ *door*-PP)	*het lezen van boeken door Jan* 'the reading of books by Jan'
	DET + N + *van*-PP + *aan*-PP (+ *door*-PP)	*het geven van boeken aan Marie door Jan* 'the presenting of books to Marie by Jan'

2.2.3.2.3. Application of the complement/adjunct test

The preceding section has shown that INF-nominalizations typically combine with noun phrases or PPs that correspond to the arguments of the input verb. However, since in many cases complements and adjuncts are not formally distinguished within the noun phrase, it is conceivable that some of these PPs are adjuncts. This section will therefore apply the tests provided in Section 2.2.1 for distinguishing between PP-complement and PP-adjuncts to INF-nominalizations to determine the status (as complement or adjunct) of the PPs accompanying these nominalizations. Of course, the tests are not readily applicable to BARE-INF nominalizations, given that this construction prefers realization of the theme as a prenominal noun phrase, which is clearly an argument of the derived noun. The discussion will therefore mainly focus on DET-INF nominalizations. The results of these tests indicate that the PPs in question should be regarded as complements of the noun.

I. Obligatoriness of PP

It is normally assumed that BARE-INF and DET-INF nominalizations both inherit the argument structure of the input verb: they resemble the corresponding verbal constructions with regard to the number of arguments and their thematic functions. Nevertheless, there is an important difference: whereas in the verbal constructions the subject is required, explicit mention of this same element is not required in the nominal constructions. Consequently, the INF-nominalizations in (316), which are derived from an unaccusative or an intransitive verb, do not require the presence of any PP, or may be modified by an adjunct only. Note that leaving out the argument is not semantically innocuous but results in a generic interpretation.

(316) a.   (Dat) vallen (met de fiets) kan erg pijnlijk zijn.
          the   fall   with the bike can very painful be
          'Falling with your bike can be very painful.'
     b.   (Dat) slapen (in een waterbed) is niet gezond.
          that sleep   in a waterbed   is not healthy
          '(This) sleeping in a waterbed is not healthy.'

In INF-nominalizations derived from a transitive verb, the theme must normally be present; dropping the theme argument is only marginally possible when the sentences are given a generic interpretation.

(317) a.   Het verzamelen [*?](van postzegels) kostte hem veel geld.
          the   collect   of stamps   cost   him much money
          'Collecting stamps is costing him a lot of money.'
     b.   [*?](Postzegels) verzamelen kost veel geld.
          stamps   collect   costs much money

Of course when the input verb can be used as a pseudo-intransitive verb like *schrijven* 'to write' or *drinken* 'to drink', the theme does not need to accompany the derived INF-noun. As with the pseudo-intransitive verb, the resulting interpretation of the examples in (318) is that of a habitual activity; cf. section 2.2.3.1 (and see also Groefsema, 1995, for semantic and syntactic constraints on the use of implicit arguments). Note that using DET-INF nominalizations with non-expressive

determiners like *het* normally gives rise to an unacceptable result; the expressive demonstrative determiner *dat* can be used provided that the context permits a pejorative interpretation, as in (318b′).

(318) a. Schrijven is een leuk beroep.   a′. *Het schrijven is een leuk beroep.
         write   is a nice occupation   that/the write   is a nice occupation
         'Writing is a nice occupation.'

     b. Drinken is ongezond.   b′. Dat/*Het drinken is ongezond.
         drink   is unhealthy   that/the drink is unhealthy
         'Drinking is unhealthy.'

The theme is also normally present when the input verb is ditransitive. It can only be left out in obvious (and contrastive) generic statements, like the ones in (319). Again, such constructions are more common with BARE-INF than with DET-INF nominalizations, which is clear from the fact that (319a&b) will become unacceptable when we add the determiner *het* to the INF-nominalizations. Example (319a′) shows, however, that DET-INF nominalizations occasionally also allow the theme to be absent in generic contexts.

(319) a. Geven is beter dan nemen.
         give   is better than take
         'To give is better than to take.'

     a′. Het gaat om   het geven, niet om   het krijgen.
         it   goes about the give   not about the get
         'It's the giving that counts, not the getting.'

     b. Bij hem is het alleen maar beloven, maar nooit eens doen.
         with him is it only   PRT promise but   never PRT   do
         'He is always promising things, but never doing them.'

The (a)-examples in (320) show that, just like in the verbal construction, the recipient need not be expressed. When it is expressed, as in the (b)-examples, dropping the theme argument does not give rise to a generic reading but to an ungrammatical result.

(320) a. Het geven *?(van cadeaus) is altijd   leuk.
         the give   of presents   is always nice

     a′. ??(Cadeautjes) geven is altijd   leuk.
         presents   give   is always nice

     b. Het geven *(van het cadeautje) aan mijn neefje   is leuk.
         the give   of the present   to my nephew$_{dim}$ is nice

     b′. Mijn neefje *(cadeautjes) geven is leuk.
         my nephew   presents   give   is nice

Finally, (321) shows that, when the input verb selects a PP, this PP is also required by the derived INF-nominalization, unless the implied theme is recoverable from the linguistic or non-linguistic context.

(321)   (Het) zoeken *(naar een oplossing) bleef   zonder resultaat.
         the   search   for a solution   remained without result

II. Occurrence of the PP in postcopular predicative position

Example (322) shows that the *van*-PP of DET-INF nominalizations cannot occur in postcopular position. This is, of course, hardly surprising, because *van*-PPs in postcopular position are normally interpreted as possessive elements: states of affairs, the denotation of INF-nominalizations, cannot be possessed.

(322) a. *Het maken is van sommen.
    the   make   is of sums
   b. *Het behandelen is van de patiënten.
     the   treat   is of patients
   c. *Het geven is van de cadeaus (aan de kinderen).
     the   give is of the presents to the children
   d. *Het uitreiken is van de prijzen (aan de winnaars).
     the   present   is of the prizes to the winners

Note that when the input verb takes a PP-complement, this PP-complement can sometimes occur in postcopular position (Barbiers 1995). Examples like these suggest the (possible) attainment of some future state, like father being present or there being a solution, which can be made explicit by adding the addition of the time adverb *nu* 'now' or a particle like *nog* 'still'.

(323) a. Het wachten is nu op vader.
     the wait   is now for father
     'We still have to wait for father.'
   b. Het zoeken is nu nog naar een oplossing.
     the search   is now still for a solution
     'We still have to search for a solution.'

This is, however, not a general property of INF-nominalizations derived from such verbs. For example, verbs denoting a state and a momentary action or an activity give rise to a distinctly odd result, which may be due to the fact that these constructions cannot be used to express the attainment of some *future* state.

(324) a. *Het geloven is nu nog in een vreedzame oplossing.
     the believing is now PRT in a peaceful solution
   b. *Het waarschuwen is nu nog voor zware regenval.
     the warning   is now PRT for heavy rain
   c. *Het jagen is nu nog op reeën.
     the hunt is now PRT on deer

Furthermore, the construction is only possible with the determiner *het*; replacing *het* by some other determiner results in unacceptability. This suggests that the acceptable cases in (323a&b) are more or less idiomatic.

(325) a. *Mijn/Dat wachten is nu op vader.
     my/that wait   is now for father
   b. *Mijn/Dat zoeken is nu nog naar een oplossing.
     my/that search   is now still for a solution

III. R-pronominalization

Example (326) shows that DET-INF nominalizations do allow R-pronominalization. The examples in (326a&b) show that the pronominalized *van*-PPs expressing the inherited theme must also follow the noun, as is of course expected given that such *van*-PPs can only occur postnominally. When the PP is inherited directly from the input verb, placement of the pronominal PP in prenominal position is acceptable, although placement of these PPs in postverbal position seems to be preferred (which is clear from the fact that this is by far the dominant order found on the internet). This is illustrated in (326c&d) by means of INF-nominalizations derived from, respectively, *jagen (op)* 'hunt' and *genieten (van)* 'enjoy'.

(326) a.   Het <*ervan> maken <ervan> is eenvoudig.
         the   there-of make   is simple
         'Making it is simple.'
    b.   Het <*ervan> uitreiken <ervan> aan de winnaarsduurde lang.
         the   there-of present   to the winners   lasted   long
         'Presenting them to the winners took a long time.'
    c.   Het <$^?$erop> jagen <erop> moest verboden worden.
         the there-on hunt   should prohibited be
         'Noble gentlemen's hunting of them should be prohibited.'
    d.   Het <$^?$ervan> genieten <ervan> werd ons onmogelijk gemaakt.
         the   there-of enjoy   was us   impossible made
         'Enjoying it was made impossible for us.'

The examples in (327a&b) show that R-pronominalization is impossible in BARE-INF nominalizations with postnominal *van*-PPs expressing the inherited theme, which is of course related to the fact that these PPs are not much favored in this construction anyway. R-pronominalization of inherited PPs, however, is possible: the examples in (327c&d) differ from the ones in (326c&d) in that they seem to prefer placement of pronominalized PP in prenominal position.

(327) a. *Maken <ervan> is eenvoudig.
    b. *Uitreiken <ervan> aan de winnaars duurde lang.
    c. <Erop> jagen <$^?$erop> moest verboden worden.
    d. <Ervan> genieten <$^?$ervan> werd ons onmogelijk gemaakt.

For completeness' sake, example (328) shows that R-pronominalization is impossible with agents and recipients.

(328) a. het overhandigen van de petitie aan de regering/*eraan
         the hand.over   of the petition to the government/there-to
    b. het schenken van geld   aan de kerk/*eraan
         the donate   of money   to the church/there-to
    c. het opstellen van een programma   door de partij/*erdoor
         the draft   of a program   by the party/there-by

IV. Extraction of PP

Topicalization of the postnominal *van*-PP yields results that are at best questionable, as shown by example (329a) for INF-nominalizations derived from transitive verbs. It seems, however, that the result improves when the extracted PP is heavy and a modal verb is used, as in (329b).

(329)   • Test 4A: Topicalization
    a. *Van fruit wordt het eten altijd   gestimuleerd.
       of fruit   is   the eat   always   encouraged
    b. ^{??}Van vers fruit zou   het eten altijd   gestimuleerd moeten worden.
       of fresh fruit   should the eat   always   encouraged   must   be
       'The eating of fresh fruit should always be encouraged.'

As is shown in (330), INF-nominalizations derived from ditransitive verbs behave more or less on a par with those derived from transitive verbs in (329), the only difference being that the presence of the recipient blocks topicalization completely. The fact that example (330b) with a heavy *van*-PP in clause-initial position is fully ungrammatical when the recipient is present suggests that the preposed *van*-PP is actually not extracted from the noun phrase but generated as an independent restrictive adverbial phrase; if so, the ungrammaticality of (330b) with a recipient would follow from the fact established in Subsection I that overt realization of the recipient *aan*-PP requires that the theme argument also be overtly realized as a *van*-PP; see the discussion of example (320).

(330) a. *Van cadeaus heb   ik het geven (aan kinderen) altijd   leuk gevonden.
       of presents   have I   the give   to children   always nice consider
    b. Van onveilige cadeaus moet   het geven ^{??}(*aan kinderen) verboden worden.
       of unsafe presents   should the give   to children   prohibited be
       'The giving of unsafe presents (to children) must be prohibited.'

As is shown by (331a), a similar blocking effect can be evoked by the agentive *door*-PP. Further, it is interesting to note that the sentence in (331b), without the *door*-phrase, strongly favors a reading in which the *van*-PP is interpreted as the agent and the verb *treiteren* 'to bully' is given a generic reading. Since non-realization of the theme normally has this effect, this might again indicate that the preposed *van*-PP is actually not extracted from the noun phrase but generated as an independent restrictive adverbial phrase.

(331) a. *Van peuters heb   ik het treiteren door grote jongens altijd   veracht.
       of toddlers   have I   the bully   by big boys   always despised
       Intended reading: 'I have always despised the bullying of toddlers by big boys.'
    b. [#]Van peuters_{Theme} heb   ik het treiteren altijd   veracht.
       of toddlers   have I   the bully   always   despised

Relativization and questioning are possible under more or less the same conditions as topicalization, as will become clear by comparing the examples in (332) with those in (329). We will refrain from giving similar examples with ditransitive verbs since relativization and questioning always give an objectionable result, although

we want to note that in this case, too, expression of a recipient *aan*-PP has a deteriorating effect.

(332) • Test 4B: Relativization and questioning
   a. *het fruit waarvan het eten altijd   gestimuleerd wordt
       the kind where-of the eat   always encouraged   is
   a′. ?het soort fruit waarvan het eten altijd   gestimuleerd zou moeten worden
       the kind fruit   where-of the eat   always encouraged should must be
   b. *?Van welk fruit wordt het eten gestimuleerd?
       of which fruit is   the eat encouraged
   b′. ?Van welk soort fruit zou   het eten gestimuleerd moeten worden?
       of which kind fruit   should the eat encouraged   must   be

INF-nominalizations do not readily accept PP-over-V and scrambling. It may perhaps occur in highly contrastive contexts, e.g., when contrastive accent is assigned to the modifier *vers* 'fresh' in the examples in (333).

(333) • Test 4C&D: PP-over-V and Scrambling
   a. Ik heb   het eten aangeraden   *van appels/?van VERS fruit.
       I   have the eat recommended of apples/of fresh fruit
   b. Ik heb   *van appels/??van VERS fruit het eten aangeraden.
       I   have of apples/of fresh fruit   the eat recommended

   For completeness' sake, it can be mentioned that topicalization, relativization and questioning of PPs introduced by prepositions other than *van* is sometimes marginally possible. Some examples are given in (334); examples (334a&c) are best when the PP is given contrastive tress; the fact that (334b) is more marked might be due to the fact that assigning contractive is not possible in this case. PP-over-V and scrambling of these PPs is impossible, which will go unillustrated here.

(334) a. ??Op groot wild zou   het jagen verboden moeten worden.
           on big game   should the hunt prohibited must   be
           'The hunting of big game should be prohibited.'
      b. *?het soort wild   waarop het jagen verboden zou   moeten worden
           the kind of game where-on the hunt prohibited should must   be
      c. ??Op welk soort wild zou   het jagen verboden moeten worden?
           on what kind game should the hunt prohibited must   be

Topicalization, relativization and questioning of a recipient *aan*-PP or an agentive *door*-PP, however, are impossible or at best highly questionable. This is shown in (335) and (336).

(335) a. *?Aan zieke kinderen moet het geven van cadeaus gestimuleerd   worden.
           to sick children   must the give   of presents   encouraged   be
           'To sick children the giving of presents must be encouraged.'
      b. *zieke kinderen   aan wie het geven van cadeaus gestimuleerd moet worden
           the kind children to whom the give   of presents   encouraged must be
      c. *?Aan wie moet het geven van cadeaus gestimuleerd worden?
           to whom must the give   of presents   encouraged be

(336) a. *Door grote jongens zou het treiteren van peuters niet mogen voorkomen.
   by big boys should the bully of toddlers not may prt.-occur

 b. *grote jongens door wie het treiteren van peuters niet zou mogen voorkomen
   big boys by whom the bully of toddlers not should may prt.-occur

 c. *Door welke jongens zou het treiteren van peuters niet mogen voorkomen?
   by which boys should the bully of toddlers not may prt.-occur

V. Conclusion

Table 7 summarizes the results of the four adjunct/complement tests for theme arguments of INF-nominalizations expressed by, respectively, a postnominal *van*-PP and a PP directly inherited from the verb. The third and fifth columns indicate whether the results provide evidence for or against the assumption that we are dealing with complements of the ER-nominalization. The first three tests provide unequivocal evidence for complement status of both *van*-PPs and PPs headed by other prepositions. The results of the PP-extraction tests seem to go against this, but we have seen that these tests are problematic in various respects, and may not be suitable for establishing complement status anyway. We therefore conclude that these themes are arguments of the derived nouns.

Table 7: Theme complements of INF-nominalization: outcome of Tests 1-4

	VAN-PPs		OTHER PPs	
Test 1: PP obligatory	+	positive	+	positive
Test 2: Post-copular position	—	positive	n.a.	n.a.
Test 3: R-pronominalization	+	positive	+	positive
Test 4A: Topicalization	?	negative	?	negative
Test 4B: Relativization/questioning	?		?	
Test 4C: PP-over-V	—		—	
Test 4D: Scrambling	—		—	

For recipient *aan*-PPs and agentive *door*-PPs it is more difficult to establish whether they are arguments of the noun. Only the first test is relevant for them, and it seems that this test provides evidence against assuming argument status: recipients and agents normally need not be expressed. However, given that recipients and agentive *door*-phrases are normally also optional in the verbal constructions, this is not conclusive. We may therefore assume that they have a status similar to the theme, which clearly does behave as an argument.

2.2.3.3. ING-nominalizations

This section discusses complementation of ING-nominalizations. Section 2.2.3.3.1 will consider issues concerning the expression of the arguments of the input verb in the ING-nominalization, and Section 2.2.3.3.2 will apply the adjunct/complement tests from Section 2.2.1 to the inherited arguments of the verbs in order to investigate whether these can be considered complements of the derived nouns.

2.2.3.3.1. Complementation

ING-nominalization is a productive morphological process that accepts most verb types as input. This section will discuss complementation of ING-nominalizations according to the types of input verb; cf. (337). See Section 1.3.1.3.1 for a discussion of irregular ING-nouns like *jacht* 'hunt' in example (337d).

(337)   • Main types of ING-nominalization

    a.   de daling   van de prijzen   [unaccusative verb]
        the falling of the prices

    b.   de ontdekking van Amerika   [transitive verb]
        the discovery of America

    c.   de overhandiging van de petitie aan de burgemeester   [ditransitive verb]
        the handing.over of the petition to the mayor

    d.   de jacht op groot wild   [verb with PP-complement]
        the hunt on big game

    e.   de verkiezing van Jan tot burgemeester   [verb with a complementive]
        the election   of Jan   to mayor

Transitive verbs taking clausal complements also allow ING-nominalization; cf. *de ontdekking dat de aarde rond is* 'the discovery that the earth is round'. A discussion of these clausal complements is given in Section 2.3.

I. ING-nominalizations derived from intransitive verbs

Section 1.3.1.3.4 has shown that intransitive verbs do not to allow ING-nominalization: the verb *huilen* 'to cry', for example, has no corresponding ING-noun **huiling*. This section also discusses the (possibly apparent) counterexample in (338).

(338)   De aarzeling   van de commissie duurde niet lang.
          the hesitation of the committee lasted   not long
          'The hesitation of the committee didn't last long.'

II. ING-nominalizations derived from unaccusative verbs

Unaccusative verbs readily accept ING-nominalization. The examples in (339) show that the theme argument must normally be expressed, and takes the form of a postnominal *van*-PP or a prenominal genitive noun phrase or possessive pronoun. In the latter case the theme argument must be [+HUMAN].

(339) a.   De val   *(van de regering_Theme) kwam niet onverwachts.
         the fall   of the government   came not unexpectedly
         'The fall of the government was not unexpected.'

    a′. Jans/Zijn_Theme val kostte hem de overwinning.
        Jan's/his fall   cost   him the victory

    b.   De komst *(van Jan_Theme) was een aangename verrassing.
         the arrival   of Jan   was a pleasant surprise

    b′. Jans/zijn_Theme komst was een aangename verrassing.
        Jan's/his arrival   was a pleasant surprise

    c.   De daling   *(van de prijzen_Theme) kwam onverwacht.
         the increase   of the prices   came unexpectedly

Leaving the argument unexpressed leads to questionable results even in generic contexts; apparently, it is difficult in such cases to give the unexpressed theme a nonspecific interpretation. This is illustrated in examples (340a&b). That the genitive noun phrase or possessive pronoun in prenominal position and the *van*-PP in postnominal position both express the theme argument of the ING-nominalization is shown by the fact that they cannot co-occur; like their intransitive verbal base, these ING-nominalizations can assign the theme role to only one argument. An example is given in (340c).

(340) a.   ??Een komst is altijd   weer een verrassing.
            an arrival   is always again a surprise
     b.   ?Vernietigingen zijn soms   moeilijk te voorkomen.
          destructions   are sometimes difficult   to prevent
     c. *Zijn komst van Jan was een aangename verrassing.
         his arrival   of Jan   was a pleasant surprise

     There are a limited number of cases in which the theme of the corresponding verb can be realized as an attributive adjective. These occurrences are restricted to relational adjectives of the geographical type (cf. Section A1.3.3), like *Amerikaans* 'American', *Amsterdams* 'of Amsterdam', etc. Such an analysis is, however, by no means undisputed: although relational adjectives differ from other adjectives in that they do not denote a property but express a relation between two entities, this does not mean that in such sentences as (341a&b), the adjective is to be interpreted as denoting the inherited theme argument of the verbs *opkomen* 'to rise' and *bloeien* 'to flourish'; instead, it may be argued that the adjective fulfills the same function as in examples (341a′&b′), where it cannot be seen as an argument of the noun.

(341) a.   de Amerikaanse opkomst in de 20^e eeuw
          the American   rise   in the 20th century
     a′. de Amerikaanse dollar
          the American   dollar
     b.   de Amsterdamse bloei   in de 17^e eeuw
          the Amsterdam   burgeoning in the 17th century
     b′. de Amsterdamse grachten
          the Amsterdam   canals

III. ING-nominalizations derived from transitive verbs

ING-nominalizations based on transitive verbs offer a wider range of possible forms of complementation. Two frequent uses can be distinguished: that in which both arguments are expressed, and that in which only the theme argument is expressed. Let us start with the latter type of construction.

A. ING-nominalizations with the theme argument expressed

If the theme argument is realized (which is always the case, except in occasional generic readings), this argument may surface as a postnominal *van*-PP, as in the primeless examples in (342), or as a prenominal genitive noun phrase or possessive pronoun, as in (342b′): example (342a′) is of course marked due to the fact that

possessive pronouns tend to refer to [+HUMAN] entities when no antecedent is present in the immediately preceding discourse; cf. Section 5.2.2.1.1.

(342) a. De verwoesting   van de stad_Theme eiste   veel slachtoffers.
          the destruction   of the city   claimed many victims
      a′. ??Hun_Theme verwoesting eiste   veel slachtoffers.
          their   destruction   claimed many victims
      b. De behandeling   van de patiënten_Theme kostte veel tijd.
          the treatment   of the patients   took   much time
      b′. Hun_Theme behandeling kostte veel tijd.
          their   treatment   took   much time

Unlike with INF-nominalizations, the theme argument cannot be realized as a prenominal noun phrase, regardless of the specificity of the argument. This is illustrated in (343).

(343) a. *De [(deze) steden]_Theme verwoesting eiste   vele slachtoffers.
           the these cities   destruction   demanded many victims
      b. *De [(die) patiënten]_Theme behandeling kost   veel tijd.
           the those patients   treating   costs much time

However, in the case of a nonspecific theme, incorporation can in certain cases be an alternative form of expression, as shown in example (344).

(344) a. Een goede afvalverwerking is duur.
          a   good   waste disposal   is expensive
          'Proper waste disposal is expensive.'
      b. Een efficiënte klachtenbehandeling is een vereiste.
          an   efficient   complaints handling is a requirement
          'Efficient handling of complaints is a must.'

Occasionally, ING-nouns derived from transitive verbs select their own preposition. In all examples given in (345) the noun selects a preposition other than *van*, whereas the theme of the input verbs has the form of a noun phrase, not of a PP; see also 1.2.2.2.1, sub V, and 2.1.5.

(345) a. Jan bezoekt Peter.   a′. Jans bezoek aan Peter
          Jan visits Peter   Jan's visit to Peter
      b. Jan vertrouwt Marie.   b′. Jans vertrouwen in Marie
          Jan trusts Marie   Jans trust in Marie
      c. Peter haat Els.   c′. Peters haat jegens Els
          Peter hates Els   Peter hatred towards Els

B. ING-nominalizations with both the theme and the agent argument expressed

When both the agent and the theme argument are expressed, a number of (combinations of) forms are possible. Consider the examples in (346). The first option is that of adding the agent argument in the form of a *door*-PP. As in the case of INF-nominalizations, this *door*-PP typically follows both the nominalized head and the theme argument realized as a *van*-PP, as in (346a&b), unless the theme is

very heavy, as in example (346b′). The doubly-primed examples show that prenominal placement of the agentive *door*-PP is excluded.

(346) a.   De verwoesting   van de stad$_{Theme}$ door de Romeinen$_{Agent}$ eiste
      the destruction   of the city   by the Romans   demanded
      veel slachtoffers.
      many victims
      'The destruction of the city by the Romans cost many lives.'
    a′. ??De verwoesting door de Romeinen$_{Agent}$ van de stad$_{Theme}$ eiste veel slachtoffers.
    a″. *De door de Romeinen$_{Agent}$ verwoesting van de stad$_{Theme}$ eiste veel slachtoffers.
    b.   De behandeling   van de patiënten$_{Theme}$ door de arts$_{Agent}$ kostte   veel tijd.
      the treatment   of the patients   by the doctor   cost   much time
      'The treatment of the patients by the doctor took a lot of time.'
    b′. ?De behandeling   door de arts$_{Agent}$ van de patiënt van kamer 114$_{Theme}$
      the treatment   by the doctor   of the patient in room 114
      kostte   veel tijd.
      cost   much time
    b″. *De door onervaren artsen$_{Agent}$ behandeling   van patiënten$_{Theme}$ kostte veel tijd.
      the by inexperienced doctors treatment   of patients   cost much time

The examples in (347a&b) show that the agent can also take the form of a prenominal genitive noun phrase or possessive pronoun, with the theme appearing as a postnominal *van*-PP. Alternatively, it is the theme argument that appears prenominally as a genitive noun phrase or pronoun, with the agent appearing (optionally) as a postnominal *door*-PP. This is illustrated in (347b′): example (347a′) is of course marked due to the fact that possessive pronouns tend to refer to [+HUMAN] entities.

(347) a.   Caesars/Zijn$_{Agent}$ verwoesting van de steden$_{Theme}$ eiste   vele slachtoffers.
      Caesar's/His destruction   of the cities   demanded many victims
      'Caesar's/His destruction of the cities cost many lives.'
    a′. ??Hun$_{Theme}$ verwoesting door de Romeinen$_{Agent}$ eiste   vele slachtoffers.
      their destruction   by the Romans   demanded many victims
      'Their destruction by the Romans cost many lives.'
    b.   Peters/Zijn$_{Agent}$ behandeling van de patiënt$_{Theme}$ kostte   veel tijd.
      Peter's/His treatment   of the patient   cost   much time
      'Peter's/His treatment of the patient took a lot of time.'
    b′. (?)Peters/Hun$_{Theme}$ behandeling door een arts$_{Agent}$ kostte veel tijd.
      Peter's/His treatment   by the doctor   cost   much time
      'Peter's/His treatment by the doctor took a lot of time.'

Just as with the unaccusative verbs, the subject of the corresponding transitive verb can sometimes be realized as a relational adjective, as illustrated in (348a&b), where the geographical adjectives *Amerikaans* 'American' and *Rotterdams* 'of Rotterdam' can be taken to refer to the agents of the input verbs *aanschaffen* 'to purchase' and *aanleggen* 'to construct'. Once again we need to emphasize that such an analysis is by no means undisputed, as the adjectives in question may just as well fulfill the same function as in example (348a′&b′), where they indicate nationality

or origin and where they cannot be given an agentive interpretation. Finally, observe that the adjective cannot be interpreted as the theme, as illustrated in examples (348a″&b″).

(348) a.   de Amerikaanse$_{Agent}$ aanschaf van de F-16
         the American   purchase of the F-16
    a′. de Amerikaanse dollar
       the American   dollar
    a″. *de Amerikaanse$_{Theme}$ belediging door Engeland
       the American   insult   by England
    b. de Rotterdamse$_{Agent}$ aanpak van de verpaupering van de armere wijken
       the Rotterdam   approach of the deterioration   of the poorer quarters
       'Rotterdam's way of dealing with the deterioration of the poorer quarters'
    b′. de Rotterdamse haven
       the Rotterdam harbor
    b″. *de Rotterdamse$_{Theme}$ overschaduwing door Amsterdam
       the Rotterdam   eclipse   by Amsterdam

The examples in (346)-(348) confirm that, in non-generic contexts, ING-nominalizations derived from transitive base verbs normally require the presence of the theme; the presence of an agent argument makes no difference in this respect. The examples in (349) show that the various elements denoting the participants in the state of affairs (*van*-PP, *door*-PP, genitive noun phrase or possessive pronoun) are indeed to be interpreted as arguments: there is room for only two arguments, that is, like their transitive verbal base, these INF-nominalizations have the adicity 2.

(349) a. *Hun verwoesting van de steden door de Romeinen eiste vele slachtoffers.
       their destruction of the cities   by the Romans   demanded many victims
    b. *Zijn behandeling van de patiënten door de arts kostte veel tijd.
       his treatment   of the patients   by the doctor cost   much time

As a general rule, it is impossible in non-generic contexts to express the agent without expressing the theme. This is possible, however, when the theme is recoverable from the context; example (350a) is not only acceptable as a generic statement, but also when we know who must undergo the intended treatment. Other apparent exceptions are constructions like (350b), where it is always possible to leave out the theme (and the agent); these constructions should not be considered ING-nominalizations, however, given that the head noun does not denote the event but the object produced by the action expressed by the base verb (and created by the agent). These constructions are dealt with in Section 2.2.5.

(350) a. Behandeling door/$^{??}$van een arts$_{Agent}$ is veel duurder.
       treatment   by/of   a doctor   is much more.expensive
       'Treatment by a doctor is much more expensive.'
    b. Ik heb een tekening van Rembrandt$_{Agent}$ gekocht.
       I have a drawing   by Rembrandt   bought
       'I have bought a drawing by Rembrandt.'

IV. ING-nominalizations derived from ditransitive verbs

This subsection considers triadic ING-nominalization constructions, that is, ING-nominalizations derived from ditransitive verbs of transfer like *uitreiken* 'to present', *overdragen* 'to transfer/hand over', *overhandigen* 'to hand over/deliver', and *verschaffen* 'to provide'. As with INF-nominalizations, it is possible for ING-nominalizations to occur with all three arguments. In actual practice, however, such occurrences are very rare. More often one (typically the agent) or two (agent and recipient) of the arguments are left unexpressed. In non-generic contexts, the presence of the theme argument is required, whereas in generic statements like (351), the theme can be left unexpressed. Below, we consider those cases in which one or more arguments do appear.

(351) a.   Een overdracht kost   altijd   veel tijd.
           a transfer   costs always   much time
           'A transfer always takes much time.'
      b.   Uitreikingen zijn altijd   feestelijke aangelegenheden.
           presentations are   always festive   occasions

A. ING-nominalizations with the theme argument expressed

The sentences in (352) are examples of ING-nominalizations based on ditransitive verbs in which only the theme argument is expressed. This argument preferably takes the form of a postnominal *van*-PP, but, in case of a [+HUMAN] theme, a prenominal possessive pronoun or genitive noun phrase can also be used.

(352) a.   De overdracht van de gevangenen$_{Theme}$ verliep snel.
           the transfer   of the prisoners   passed   quickly
           'The transfer of the prisoner passed of without any problems.'
      a′. Hun$_{Theme}$ overdracht verliep   zonder problemen.
           their transfer   passed   without problems
      b.   De uitreiking   van de prijzen$_{Theme}$ duurde lang.
           the presentation of the prizes   lasted long

B. ING-nominalizations with the agent and the theme argument expressed

Agent arguments take the form of a *door*-PP. In the unmarked case, the *door*-phrase follows both the nominal head and the theme argument, as in (353a&b). Reversing the order of theme and agent is normally impossible: examples like (353a′&b′) are at best marginally acceptable with contrastive accent on the theme. In generic sentences like (353a″&b″), the result of reversing the order seems more acceptable.

(353) a.   De overdracht van de gevangenen$_{Theme}$ door de bewakers$_{Agent}$ verliep snel.
           the transfer   of the prisoners   by the guards   passed quickly
      a′. ??De overdracht door de bewakers$_{Agent}$ van de gevangenen$_{Theme}$ verliep snel.
      a″. ?Overdrachten   door onervaren bewakers$_{Agent}$ van gevaarlijke gevangenen$_{Theme}$
           transfers   by inexperienced guards   of dangerous prisoners
           dienen te worden vermeden.
           should to be   avoided

    b.   De uitreiking   van de prijzen_{Theme} door de voorzitter_{Agent} duurde lang.
          the presentation   of the prizes   by the chairman   lasted   long
    b′. ^{??}De uitreiking door de voorzitter_{Agent} van de prijzen_{Theme} duurde lang.
    b″. [?]Uitreikingen door voorzitters_{Agent} van grote prijzen_{Theme} duren altijd lang.
          presentations by chairmen   of prestigious prizes   last always long

As shown by examples (354a&b), the agent can also appear as a possessive pronoun
or a genitive noun phrase. In all these cases, the theme argument takes the form of a
postnominal *van*-PP. In the case of a [+HUMAN] theme, the theme may also take the
form of a possessive pronoun, in which case the agent appears postnominally as a
door-PP, as shown by example (354c).

(354) a.   Hun/Jan en Peters_{Agent} overdracht van de gevangenen_{Theme} verliep snel.
          their/Jan and Peter's transfer   of the prisoners   passed   quickly
    b.   Zijn/Jans_{Agent} uitreiking   van de prijzen_{Theme} duurde lang.
          his/Jan's   presentation of the prizes   lasted   long
    c.   [?]Hun_{Theme} overdracht door de bewakers_{Agent} verliep snel.
          their   transfer   by the guards   passed   quickly

C. ING-nominalizations with the theme and the recipient argument expressed

Alternatively, it may be the recipient argument that co-occurs with the theme
argument. As is shown in the primeless examples in (355), the recipient always
takes the form of a postnominal *aan*-PP following the theme. The primed examples
show that the order with the recipient *aan*-PP preceding the theme is degraded, even
in the doubly-primed, generic examples.

(355) a.   De overdracht van de gevangenen_{Theme} aan de politie_{Rec} verliep snel.
          the transfer   of the prisoners   to the police   passed   quickly
    a′. ^{??}De overdracht aan de politie_{Rec} van de gevangenen_{Theme} verliep snel.
    a″. ^{??}Overdrachten aan jonge politieagenten_{Rec} van gevaarlijke gevangenen_{Theme}
          transfers   to young policemen   of dangerous prisoners
          dienen te worden vermeden.
          ought to be   avoided
    b.   De uitreiking   van de prijzen_{Theme} aan de winnaars_{Rec} duurde lang.
          the presentation   of the prizes   to the winners   lasted   long
    b′. ^{??}De uitreiking aan de winnaars_{Rec} van de prijzen_{Theme} duurde lang.
    b″. ^{??}Uitreikingen aan winnaars_{Rec} van grote prijzen_{Theme} duren altijd   lang.
          presentations to winners   of prestigious prizes last   always   long

The examples in (356a&b) show that the recipient argument cannot appear as a
prenominal possessive pronoun or genitive noun phrase. This position can only be
taken by the theme with the recipient appearing as an *aan*-PP in postnominal
position, as in (356c).

(356) a.   *Hun/Peters_{Rec} overdracht van de gevangenen_{Theme} verliep snel.
          their/Peter's transfer   of the prisoners   passed quickly
    b.   *Hun/Peters_{Rec} uitreiking   van de prijzen_{Theme} duurde lang.
          their/Peter's   presentation of the prizes   lasted   long
    c.   Hun/Peters_{Theme} overdracht aan de politie_{Rec} verliep snel.
          their/Peter's   transfer   to the police   passed   quickly

D. *ING-nominalizations with all three arguments expressed*

ING-nominalizations with all three arguments expressed are forced and will rarely be encountered. When all arguments appear as postnominal PPs, the preferred order seems to be that in which the theme (as a *van*-PP) is closest to the head, followed by the recipient *aan*-PP and the agentive *door*-PP, as in (357a). Reversing the order of recipient and agent, as in (357b), seems possible, which may be related to the fact that the *aan*-PP may undergo PP-over-V in the corresponding verbal construction. Reversing the order of theme and recipient, as in (357c), gives rise to a marginal result. The three other logically possible orders are unacceptable to various degrees, with the possible exception of the generic counterpart of example (357c): [?]*Overdrachten door onervaren bewakers van gevaarlijke gevangenen aan jonge politieagenten.*

(357) a. de overdracht van de gevangenen$_{Theme}$ aan de politie$_{Rec}$ door de bewakers$_{Agent}$
the transfer   of the prisoners   to the police   by the guards
   b. [(?)]de overdracht van de gevangenen$_{Theme}$ door de bewakers$_{Agent}$ aan de politie$_{Rec}$
   c. [?]de overdracht aan de politie$_{Rec}$ van de gevangenen$_{Theme}$ door de bewakers$_{Agent}$
   d. [*?]de overdracht aan de politie$_{Rec}$ door de bewakers$_{Agent}$ van de gevangenen$_{Theme}$
   e. [??]de overdracht door de bewakers$_{Agent}$ van de gevangenen$_{Theme}$ aan de politie$_{Rec}$
   f. *de overdracht door de bewakers$_{Agent}$ aan de politie$_{Rec}$ van de gevangenen$_{Theme}$

The examples in (358a&b) show that both the theme and the agent argument can take the form of a possessive pronoun or genitive noun phrase. With a prenominal theme the postnominal recipient- and agent-PP again seem to be able to appear in either order, whereas in the case of a prenominal agent it is clearly preferred that the theme-PP precedes the recipient. The unacceptability of (358c) shows again that a recipient argument cannot appear as a prenominal possessive pronoun or genitive noun phrase; cf. example (356).

(358) a. hun/Peters$_{Theme}$ overdracht aan de politie$_{Rec}$ door de bewakers$_{Agent}$
their/Peter's   transfer   to the police   by the guards
   a′. [(?)]hun/Peters$_{Theme}$ overdracht door de bewakers$_{Agent}$ aan de politie$_{Rec}$
   b. hun/Peters$_{Agent}$ overdracht van de gevangenen$_{Theme}$ aan de politie$_{Rec}$
their/Peter's   transfer   of the prisoners   to the police
   b′. [??]hun/Peters$_{Agent}$ overdracht aan de politie$_{Rec}$ van de gevangenen$_{Theme}$
   c. *hun/Peters$_{Rec}$ overdracht van de gevangenen$_{Theme}$ door de bewakers$_{Agent}$
their/Peter's   transfer   of the prisoners   by the guards

V. *ING-nominalizations derived from verbs with prepositional arguments*

ING-nominalizations can also inherit PP-arguments from base verbs like *jagen op* 'to hunt for', which select their own specific preposition. In all cases, the ING-nominalization inherits the preposition selected by the input verb: in the examples in (359) the theme does not appear as a *van*-PP, but as a PP headed by *op*. These examples also show that it is easier to place the agentive *door*-phrase in front of the inherited PP-complement than to place it in front of a theme that is realized as a postnominal *van*-PP; cf. (346). Possibly, this is related to the fact that these PP-complements may undergo PP-over-V in the corresponding verbal construction.

(359) a. De jacht   op groot wild_{Theme} door adellijke heren_{Agent} is verachtelijk.
          the hunt   on big game   by noble gentlemen   is despicable
          'The hunting of big game by the nobility is despicable.'
     b. De jacht door adellijke heren_{Agent} op groot wild_{Theme} is verachtelijk.

Another difference between these ING-nominalizations and those derived from transitive verbs is illustrated in the examples in (360), which show that in dyadic constructions involving inheritance of a PP argument, only the agent argument can appear as a possessive pronoun or genitive noun phrase, which suggests that the selected preposition must be overtly realized.

(360) a. Hun/Jans_{Agent} jacht op groot wild_{Theme} is verachtelijk.
          their   hunt on big game   is despicable
     b. *Hun/Jans_{Theme} jacht door adellijke heren_{Agent} is verachtelijk.
          their   hunt   by noble gentlemen   is despicable

     The inherited PP-argument need not be a theme; in the nominalization of the verb *aanbevelen voor* 'to recommend for' in (361), for example, it involves a third argument of the verb (which we may conveniently assign the thematic role goal) that is preceded by the preposition *voor* instead of *aan*. The (a)-examples show that the theme argument preferably precedes the goal argument, and the (b)-examples illustrate again that it is easier to place an agentive *door*-PP like *door de commissie* 'by the committee' in front of an inherited PP-complement than in front of a theme realized as a postnominal *van*-PP. The order in (361c) order in (361c), which combines the two dispreferred orders in (361a′) and (361b″), seems impossible.

(361) a. De aanbeveling   van Jan_{Theme}   voor die baan_{Goal} werd genegeerd.
          the recommendation of Jan   for the job   was ignored
     a′. ??De aanbeveling voor de baan_{Goal} van Jan_{Th} werd genegeerd.
     b. De aanbeveling van Jan_{Th} voor de baan_{Goal} door de commissie_{Ag} werd genegeerd.
     b′. De aanbeveling van Jan_{Th} door de commissie_{Ag} voor de baan_{Goal} werd genegeerd.
     b″. ??De aanbeveling door de commissie_{Agt} van Jan_{Th} voor de baan_{Goal} werd genegeerd.
     c. *De aanbeveling door de commissie_{Ag} voor de baan_{Goal} van Jan_{Th} werd genegeerd.

The examples in (362) show that also in this case either the agent or the theme argument of the ING-nominalization can appear prenominally as a genitive noun phrase or a possessive pronoun, whereas the goal argument must appear as a postnominal PP.

(362) a. zijn/Peters_{Theme} aanbeveling   voor de baan door de commissie_{Agent}
          his   recommendation for the job   by the committee
     b. hun/Jan en Peters_{Agent} aanbeveling   van Jan_{Theme} voor de baan
          their/Jan and Peter's recommendation of Jan   for the job

VI. *ING-nominalizations derived from verbs taking a complementive*

Unlike INF-nominalizations, ING-nominalizations do not normally accept as input verbs selecting an adjectival complementive (predicative complement). This is illustrated by the primed examples in (363), which show that these constructions are unacceptable regardless of whether the predicate is post- or prenominal.

(363) a.   Jan is   dood gevallen.
            Jan has dead dropped
            'Jan dropped dead.'
    a′. *De <dood> val van Jan <dood> schokte ons.
           the dead   fall of Jan   horrified us
    b.   De regering   heeft het gebied veilig verklaard.
           the government has   the area   safe   declared
           'The government has declared the area safe.'
    b′. *De <veilig> verklaring   van het gebied <veilig> (door de regering)
           the   safe   declaration of the area   by the government
           verraste ons.
           surprised us

Exceptions to the rule that verbs taking an adjectival complementive cannot be the input of ING-nominalization are *heiligverklaring* 'canonization/beatification' and *goedkeuring* 'approval'. This may be related to the fact that in these examples the adjective and the verb are more or less fixed collocations; the adjectives may therefore be interpreted like a kind of verbal particle, which can likewise be part of ING-nominalizations: cf. *onderdompeling* 'immersion', which is derived from the particle verb *onder dompelen* 'immerse'.

    When the complementive is introduced by a preposition like *tot* 'to' or *als* 'as', ING-nominalization is also possible. This is illustrated in examples (364a&b). In such constructions the complementive can only occur postnominally; placing it in prenominal position results in ungrammaticality.

(364) a.   De benoeming   van Jan tot voorzitter was verstandig.
            the appointment of Jan   to chairman was wise
            'Jan's appointment to chairman was wise.'
    b.   De kroning   van Karel V tot keizer> was een historische gebeurtenis.
            the crowning of Charles V to emperor was a historical event
            'The crowning of Charles V as emperor was a historical event.'
    c.   Peters   karakterisering   van ons voorstel als fantasieloos was onterecht.
            Peter's characterization of our proposal   as unimaginative was not justified
    d.   Haar omschrijving van de reis als boeiend   was ironisch   bedoeld.
            her   description   of the trip as fascinating was ironically meant
           'Her description of the trip as fascinating was meant ironically.'

VII. Conclusion

The preceding sections have been concerned with the most important aspects of complementation of ING-nominalization, in particular the form and position of the various arguments and their relation to the nominalized head. Let us summarize the main points. In unaccusative ING-nominalizations, the theme argument is obligatorily present and typically appears postnominally as a *van*-PP. The theme argument of dyadic ING-nominalizations is also obligatory (when they have specific reference). This theme argument can be realized as a postnominal *van*-PP, in which case it is preferably placed adjacent to the head, or as a prenominal genitive noun phrase or possessive pronoun. The presence of the agent, on the other hand, is

optional. In triadic ING-nominalizations, themes are typically expressed, while recipients and agents are often omitted. If the latter are expressed, they are realized as *aan-* and *door*-PPs, respectively, and follow the theme in postnominal position. The agent preferably follows both theme and recipient. In all cases, the theme and agent argument may also take the form of a prenominal genitive noun phrase or a possessive pronoun, provided that they are [+HUMAN].

Schematically, the above can be represented as in Table 8, which gives us the basic patterns of ING-nominalizations. This table does not include ING-nominalizations derived from verbs taking a PP-complement or a complementive introduced by *als/tot*, which are also inherited by the nominalization.

Table 8: The form and position of the complements of ING-nominalizations

TYPE OF VERB	PATTERN	EXAMPLES
Unaccusative	N+ *van*-PP$_{Theme}$	(339)
	NP*s*/pronoun$_{Theme}$ + N	(339′)
Transitive	N + *van*-PP$_{Theme}$ (+ *door*-PP$_{Agent}$)	(342)/(346)
	NP*s*/pronoun$_{Theme}$ + N (+ *door*-PP$_{Agent}$)	(342′)/(347′)
	NP*s*/pronoun$_{Agent}$ + N + *van*-PP$_{Theme}$	(347)
Ditransitive	N + *van*-PP$_{Theme}$ (+ *aan*-PP$_{Rec}$) (+ *door*-PP$_{Agent}$)	(352)/(353)/ (355)/(357)
	NP*s*/pronoun$_{Theme}$ + N (+ *aan*-PP$_{Rec}$) (+ *door*-PP$_{Agent}$)	(352′)/(354c)/ (358a)
	NP*s*/pronoun$_{Agent}$ + *van*-PP$_{Theme}$ (+ aan-PP$_{Rec}$)	(354a&b)/(358b)

2.2.3.3.2. *Application of the complement/adjunct tests*

The preceding section has shown that ING-nouns typically combine with PPs that correspond to the arguments of the input verb. However, since in many cases complements and adjuncts are not formally distinguished within the noun phrase, it is conceivable that some of these PPs are adjuncts. This section will therefore apply the four tests that have been proposed in Section 2.2.1 to distinguish complements and adjuncts within the noun phrase to ING-nominalizations. The results of these tests confirm our assumption that the inherited arguments of ING-nominalizations are complements rather than adjuncts of the derived noun.

I. *Obligatoriness of PP*

ING-nominalizations can be seen as inheriting the argument structure of the input verb, with the nominal construction resembling the verbal construction as regards the number of arguments and their thematic functions. However, whereas the arguments of verbs must normally be explicitly expressed, this is not equally true of the inherited arguments of the corresponding ING-nouns. When the ING-nominalization is derived from a transitive verb, as in (365a), the theme must be present, whereas the agent can quite felicitously be left out. When the input verb is ditransitive, the recipient need not be expressed either, as shown by (365b).

(365) a. de vernietiging *(van de stad$_{Theme}$) (door het leger$_{Agent}$)
      the destruction   of the city   by the army

    b. de overhandiging *(van de petitie$_{Theme}$) (aan de minister$_{Rec}$) (door Jan$_{Agent}$)
      the handing-over   of the petition   to the minister   by Jan

Observe that, if they are left out, the presence of the agent and recipient arguments is still implied and must be recoverable or inferable from the context. Under such circumstances, it may even be possible to leave out the theme, although this is much more likely to lead to a marked result. The examples in (366) show that ING-nominalizations derived from verbs selecting a PP-complement essentially pattern with those derived from (di-)transitive verbs; the theme argument must be realized.

(366) a. de jacht *(op groot wild$_{Theme}$) (door aristocraten$_{Agent}$)
      the hunt   on big game   by aristocrats
      'the hunting of big game by aristocrats'

    b. de aanbeveling   *(van Jan$_{Theme}$) (voor de baan$_{Goal}$) (door de commissie$_{Agent}$)
      the recommendation   of Jan   for the job   by the committee
      'the recommendation of Jan for the job by the committee'

II. Occurrence of the PP in predicative postcopular position

The examples in (367a-c) show that the *van*-PP of ING-nominalizations cannot occur in postcopular position. This is, of course, hardly surprising, as *van*-PPs in postcopular position are normally interpreted as possessive elements, whereas states of affairs, the denotation of ING-nominalizations, cannot be possessed. For completeness' sake, the examples in (367c&d) show that PPs introduced by some preposition other than *van* cannot be used in this position either.

(367) a. *De daling is van de prijzen.   [unaccusative verb]
      the fall   is of the prices

    b. *De behandeling is van de patiënt.   [transitive verb]
      the treatment   is of the patient

    c. *De overdracht is van de gevangenen (aan de politie).   [ditransitive verb]
      the transfer   is of the prisoners   to the police

    d. *De jacht is op groot wild.   [verb with a PP-complement]
      the hunt   is on big game

III. R-pronominalization

The acceptability of the examples in (368) shows that ING-nominalizations allow R-pronominalization of theme arguments.

(368) a. De daling ervan   veroorzaakte veel paniek.
      the fall   of them caused   much panic
      'Their fall caused a lot of panic.'

    b. De verwoesting ervan   heb ik niet meegemaakt.
      the destruction   there-of have I   not prt.-experienced
      'I haven't witnessed its destruction.'

c. De uitreiking   ervan   vond pas   's avonds   plaats.
    the presentation there-of took only in the evening place
    'Its presentation didn't take place until the evening.'
d. De jacht erop   is verboden.
    the hunt there-on is forbidden

R-pronominalization of agents or recipients, on the other hand, is excluded, which is illustrated by the unacceptability of the examples in (369).

(369) a. *De aanbeveling van Jan   <ervoor> had geen succes.
           the recommendation of Jan   there-for had no success
      b. *De verwoesting van de stad erdoor   kostte vele levens.
           the destruction   of the city   there-by cost   many lives

IV. Extraction of PP

The PP-extraction test yields results that are far from unequivocal. The acceptability of these sentences depends on the ease with which a contrastive interpretation can be construed. Nevertheless, there appear to be differences in acceptability which neither context nor difference in verb type or number of arguments can account for.

A. Topicalization

As can be seen from the examples in (370), topicalization of the *van*-PP is marked.

(370) a. ??Van de koffieprijs   veroorzaakte de daling veel paniek.
              of the coffee price   caused   the fall   much panic
              'The fall of the coffee price caused a lot of panic.'
      b. ??Van deze patiënt heb ik de behandeling met aandacht gevolgd.
              of this patient   have I   the treatment   with attention followed
              'I have closely followed the treatment of this patient.'
      c. ??Van de prijzen vond   de uitreiking   gisteren   plaats.
              of the prizes   found the presentation yesterday place
              'The presentation of the prizes took place yesterday.'

The result is generally completely excluded when an agentive *door*-phrase, or, in the case of a ditransitive construction, a second PP-complement is expressed. This is illustrated by the examples in (371).

(371) a. *Van Peter heb   ik de vervanging   door Els uitgesteld.
            of Peter   have I   the replacement by Els   postponed
      b. *Van de prijzen vond   de uitreiking   aan de winnaars gisteren   plaats.
            of the prizes   found the presentation to the winners   yesterday place

Given that realization of a *door*-phrase or a second PP-complement normally requires that the theme argument be overtly expressed as well, the ungrammaticality of the examples in (371) suggests that extraction is excluded. This would imply that we are not dealing with extraction from the noun phrase in (370) either, but with movement of an independent restrictive adverbial phrases. If so, this means that the relative acceptability of the examples in (370) may be due to the fact that the restrictive adverbial phrase makes the theme argument of the noun contextually

recoverable, and thus licenses it to remain unexpressed. In short, examples like (370c) can be analyzed in a way similar to the fully acceptable example in (372) in which the *bij*-PP clearly does not function as a theme argument of the noun phrase.

(372)   Bij deze patiënt heb ik de behandeling met aandacht gevolgd.
              with this patient have I   the treatment   with attention followed
              'With this patient I have followed the treatment closely.'

The examples in (373) illustrate that topicalization of PP-themes headed by prepositions other than *van* again also gives rise to equivocal results. Whereas a case like (373a) seems at least marginally possible, the result in (373b) is highly questionable.

(373) a. [?]Op (de/deze) herten is de jacht gelukkig   verboden.
              on the/these deer   is the hunt fortunately   prohibited
              'The hunting of (the/these) deer has fortunately been prohibited.'
       b. *Aan deze drug heeft de verslaving al   veel slachtoffers geëist.
              to this drug   has   the addiction   already many victims   demanded

     Extraction of non-theme PPs is always impossible: (374) shows that neither the extraction of the agent, nor that of a recipient PP or some other (goal-like) third argument leads to acceptable results.

(374) a. *Door de Romeinen heb   ik de verwoesting van de stad niet meegemaakt.
              by the Romans   have I   the destruction of the city   not   experienced
       b. *Aan de politie verliep de overdacht van de gevangenen zonder problemen.
              to the police   passed   the transfer   to the prisoners   without problems
       c. *Voor deze baan had de aanbeveling   van Jan geen succes.
              for this job   had the recommendation   of Jan   no success

     For completeness' sake, note that topicalization of the (non-theme) PP-argument in ditransitive constructions seems possible in cases like (375), in which the *van*-PP refers to the agent, not the theme. However, the semantics of the example makes perfectly clear that the *voor*-PP functions as a constituent independent of the noun, as will be clear from the English rendering.

(375)   Voor deze baan heeft de commissie de aanbeveling van Jan_{Agent} genegeerd.
              for this job   has   the committee the recommendation by Jan ignored
              'As for this job, the committee has ignored the recommendation by Jan.'

B. Relativization and questioning

Relativization and questioning of the PP-complement yield a somewhat better result than topicalization. In (376), this is illustrated for *van*-PPs in (di-)transitive constructions.

(376) a. ^(?)Dit is de patiënt   waarvan de zuster de behandeling goed   bijhoudt.
              this is the patients where-of the nurse the treatment   closely prt.-follows
              'This is the patient whose treatment the nurse closely follows.'
       a′. Van welke patiënt houdt   de zuster de behandeling goed   bij?
              of which patient   follows the nurse the treatment   closely prt

b.　?Dit　zijn de prijzen waarvan de uitreiking　　nu　plaats vindt.
　　these are the prizes where-of the presentation now place takes
　　'These are the prizes of which the presentation will take place now.'

b′.　Van welke prijzen vindt de uitreiking　　?(??aan de winnaars) nu　plaats?
　　of which prizes　　takes the presentation　　to the winners　now place

The examples in (377) show that he result is generally completely excluded when an agentive *door*-phrase, or, in the case of a ditransitive construction, a second PP-complement is expressed. This again suggests that extraction from a noun phrase is prohibited, so that the examples in (376) may not involve extraction from the noun phrase either, but movement of an independent restrictive adverbial phrase. In (378) we show the same for theme-PPs introduced by some other preposition.

(377) a.　*de jongen van wie ik de vervanging　　door Els heb　uitgesteld
　　　　of Peter　of whom I　the replacement by Els　have postponed

a′.　*Van wie heb　jij　de vervanging　　door Els uitgesteld.
　　　　of who　have you the replacement　by Els　postponed

b.　*de prijzen waarvan de uitreiking　　aan de winnaars nu　plaatsvindt
　　　　the prizes of-which the presentation　to the winners　now takes.place

b′.　*Van welke prijzen vindt de uitreiking　　aan de winnaars nu　plaats.
　　　　of which prizes　　takes the presentation　to the winners　now place

(378) a.　het wild　waarop　we de jacht ?(*door adellijke heren) willen　verbieden
　　　　the game where-on we the hunt　by noble gentlemen　want　prohibit
　　　　'the kind of game of which we want to prohibit the hunting'

b.　Op welk wild　willen we de jacht ?(*door adellijke heren) verbieden?
　　　　on which game want　we the hunt　by noble gentlemen prohibit
　　　　'Of which game do we want to prohibit the hunting?'

C. PP-over-V and Scrambling

As with INF-nominalizations, PP-over-V often leads to highly questionable results; as shown in (379), results seem best for ING-nominalizations derived from unaccusative verbs.

(379)　　• Test 4C: PP-over-V

a.　(?)Ik heb　de aankomst bijgewoond　van Sinterklaas.
　　　　I　have　the arrival　prt.-attended of Santa Claus
　　　　'I have been present at the arrival of Santa Claus.'

b.　?Ik heb　de behandeling gevolgd　van deze patiënt.
　　　　I　have the treatment　followed of these patient

c.　??De regering　heeft de jacht verboden　op groot wild.
　　　　the government has　the hunt prohibited　on big game

d.　??Ik heb　de uitreiking　(aan de winnaars) bijgewoond　van de prijzen.
　　　　I　have the presentation　to the winners　prt.-attended of the prizes

The acceptability of the examples in (380) shows that scrambling seems at least marginally possible; all of the resulting sentences are, however, highly contrastive. This is true for all theme PPs, regardless of the preposition used or the type of construction (dyadic/triadic) in question.

(380)   • Test 4D: Scrambling
  a. ??Ik heb   van Sinterklaas de aankomst bijgewoond.
       I   have of Santa Claus   the arrival   prt.-attended
  b. Ik heb   van deze patiënt de behandeling gevolgd.
       I   have of these patient   the treatment   followed
  c. ??De regering   heeft op groot wild de jacht verboden.
       the government has   on big game   the hunt prohibited
  d. Ik heb   van de prijzen de uitreiking   ??(*?aan de winnaars) bijgewoond.
       I   have of the prizes   the presentation   to the winners   prt.-attended

With non-theme complement PPs, neither PP-over-V nor scrambling is possible. This is illustrated in example (381).

(381) a. *Ik heb de uitreiking   van de prijzen bijgewoond aan de winnaars.
           I   have the presentation of the prizes   prt.-attended to the winners
  a′. *Ik heb aan de winnaars de uitreiking van de prijzen bijgewoond.
  b. *Ik heb de behandeling van de patiënt nauwkeurig gevolgd door de arts.
       I   have the treatment   of the patient closely   followed by the doctor
  b′. *Ik heb door de arts de behandeling van de patiënt nauwkeurig gevolgd.

V. Conclusion

Table 9 summarizes the results from this section of the four tests for inherited theme arguments of ING-nouns. The third and fifth columns indicate whether the results provide evidence for or against the assumption that we are dealing with complements. The first three tests provide unequivocal evidence for complement status both of *van*-PPs and theme-PPs headed by other prepositions. The results of the PP-extraction tests seem to go against this, but we have seen that these tests are problematic in various respects, and may not be suitable for establishing complement status anyway. We therefore conclude that the theme functions as an argument of the derived noun.

Table 9: Theme complements of ING-nominalization: outcome of Tests 1-4

	VAN-PPs		OTHER PPs	
Test 1: PP obligatory	+	positive	+	positive
Test 2: Post-copular position	—	positive	n.a.	n.a
Test 3: R-pronominalization	+	positive	+	positive
Test 4A: Topicalization	?	both positive	?	both positive
Test 4B: Relativization/questioning	+/?	and negative	+/?	and negative
Test 4C: PP-over-V	—		—	
Test 4D: Scrambling	?		??	

For recipient *aan*-PPs and agentive *door*-PPs it is more difficult to establish whether they are arguments of the noun. Only the first test is relevant for them, and it seems that this test provides evidence against assuming argument status: recipients and agents normally need not be expressed. However, given that recipients and agentive *door*-phrases are normally also optional in the verbal constructions, this is not conclusive. We will therefore assume that they have a similar status as the theme, which clearly does behave as an argument.

2.2.3.4. GE-nominalizations

This section discusses complementation of GE-nominalizations. Section 2.2.3.4.1 will consider issues concerning the expression of the arguments of the input verb in the GE-nominalization and Section 2.2.3.4.2 will apply the adjunct/complement tests from Section 2.2.1 to the inherited arguments of the verbs in order to investigate whether these can indeed be considered complements of the derived nouns.

2.2.3.4.1. Complementation

This section will discuss complementation of the derived GE-noun types shown in (382). Transitive verbs taking clausal complements also allow GE-nominalization: *het geroep dat hij de beste is* 'calling that he is the best'. These clausal complements are discussed in Section 2.3.

(382)　　•Main types of GE-nominalization
　　a.　het gegiechel　van de leerlingen　　　　　　　　　[intransitive verb]
　　　　the giggling　　of the students
　　b.　het getreiter　van kinderen　　　　　　　　　　　[transitive verb]
　　　　the bullying　　of children
　　c.　het gegeef van cadeaus　aan kinderen　　　　　　[ditransitive verb]
　　　　the giving　of presents　　to children
　　d.　het gejaag　op groot wild　　　　　　　[verbs with a PP-complement]
　　　　the hunting　on big game
　　e.　??dat　gekarakteriseer van zijn werk　als banaal　[verbs with a complementive]
　　　　that　characterizing of his work　　as banal

I. GE-nominalizations derived from intransitive verbs

Example (383a) shows that the agent argument of an intransitive GE-nominalization appears postnominally as a *van*-PP; the use of an agentive *door*-phrase is highly questionable. The agent can also appear prenominally in the form of a possessive pronoun or genitive noun phrase, as in (383b). That the postnominal *van*-PP and the prenominal genitive form both express the agent argument is shown by the fact illustrated in (383c) that they cannot co-occur. The agent is normally obligatorily present: only in generic sentence like (383d) can it be left unexpressed; see Section 2.2.1.2, sub IIA, for implicit arguments.

(383) a.　Het gegiechel　van/*?door de leerlingen_{Agent} verstoorde　de les.
　　　　the giggling　　of/by the students　　　　　disrupted　　the class
　　b.　Hun/Maries gegiechel　verstoorde de les.
　　　　their/Marie's giggling　disrupted　the class
　　c.　*Hun gegiechel　van de meisjes　verstoorde de les.
　　　　their giggling　of the girls　　disrupted　the class
　　d.　Zulk gegiechel　is altijd　erg irritant.
　　　　such giggling　is always very irritating

In some cases the agent can be expressed by means of an attributively used relational adjective of the geographical type, like *Amerikaans* 'American' and *Russisch* 'Russian' in (384); cf. Section A1.3.3. This does not, however, mean that

this adjective is to be interpreted as the inherited agent argument of the verbs *huichelen* 'to feign' and *blunderen* 'to blunder'; it may simply have the non-agentive interpretation as in, e.g., *de Amerikaanse dollar* 'the American dollar', and allow the agent argument to remain unexpressed by making it contextually recoverable.

(384) a.   dat   Amerikaanse gehuichel
          that American   feigning
          'this American hypocrisy'
     b.   dat   Russische geblunder
          that Russian   blundering

II. GE-nominalizations derived from unaccusative verbs

Unaccusative verbs cannot be used as input for GE-nominalization; cf. Section 1.3.1.4.4.

III. GE-nominalizations derived from monotransitive verbs

Where the GE-nominalization is based on a transitive verb, three situations can be distinguished: one in which only the theme argument is expressed, one in which both arguments are expressed, and one in which only the agent is expressed.

A. GE-nominalizations with only the theme argument expressed

The agentive *door*-PP can readily be left unexpressed. The examples in (385) show that in this case the theme argument may surface as a postnominal *van*-PP.

(385) a.   Aan het gediscrimineer   van ouderen$_{Theme}$ moet een einde komen.
          to the discriminating   of elderly   must an end   come
          'The discriminating against elderly people should be stopped.'
     b.   Dat getreiter van Jan$_{Theme}$ is onaanvaardbaar.
          that bullying of Jan   is unacceptable

GE-nominalizations differ from INF-nominalizations in that they do not allow their theme argument to appear pronominally as a noun phrase, and from ING-nominalizations in that they cannot take their theme argument in the form of a possessive pronoun or genitive noun phrase. These characteristics are illustrated in, respectively, (386) and (387).

(386) a. *Hun$_{Theme}$ gediscrimineer moet stoppen.
        their discriminating   must stop
     b. *Jans$_{Theme}$ getreiter is onaanvaardbaar.
        Jan's bullying   is unacceptable

(387) a. *Het (deze) kinderen$_{Theme}$ getreiter is onaanvaardbaar.
        the these children   bullying is unacceptable
     b. *Dat boeken$_{Theme}$ gekopieer is illegaal.
        that books   copying   is illegal

In the case of a nonspecific theme, incorporation may sometimes be the preferred form of expression, as in example (388) with the incorporated theme *boe* 'boo'.

(388) a.   Een luid boe-geroep klonk   door de zaal.
           a loud boo-shouting sounded   through the room
           'A loud booing sounded through the room.'
    b. $^?$Een luid geroep   van "boe" klonk   door de zaal.
           a loud shouting   of boo   sounded   through the room

B. GE-nominalizations with both the agent and the theme argument expressed

There are two ways of simultaneously expressing the agent and the theme argument. The first option is illustrated by (389) and involves adding the agent in the form of a postnominal *door*-PP. This *door*-PP typically follows the *van*-PP, although (389b′) shows that extraction of heavy theme PPs is possible.

(389) a.   Het getreiter van peuters$_{Theme}$ door grote jongens$_{Agent}$ is onaanvaardbaar.
           the bullying   of toddlers   by big boys   is unacceptable
    a′. $^{*?}$Het getreiter door grote jongens$_{Agent}$ van peuters$_{Theme}$ is onaanvaardbaar.
    b.   Dat gekopieer van deze boeken$_{Theme}$ door studenten$_{Agent}$ is illegaal.
           that copying   of these books   by students   is illegal
    b′. Dat gekopieer door studenten$_{Ag}$ van die boeken op de leeslijst$_{Th}$ is illegaal.
           that copying   by students   of the books on the reading list is illegal
           'This copying by students of the books that are on the reading list is illegal.'

The second option is illustrated by the examples in (390a&b) and involves the addition of the agent in the form of a genitive noun phrase or a possessive pronoun. We have already seen that the theme argument cannot be realized in this way, as is illustrated again by the unacceptability of the primed examples.

(390) a.   Jans/Zijn$_{Agent}$ getreiter   van de kinderen$_{Theme}$ is onaanvaardbaar.
           Jan's/his   bullying of the children   is unacceptable
    a′. *Hun$_{Theme}$ getreiter   door Jan$_{Agent}$ is onaanvaardbaar.
           their   bullying by Jan   is unacceptable
    b.   Peters$_{Agent}$ gediscrimineer van ouderen$_{Theme}$ moet stoppen.
           Peter's   discriminating of elderly   must stop
           'Peter's discriminating against elderly people should be stopped.'
    b′. *Hun$_{Theme}$ gediscrimineer door Peter$_{Agent}$ moet stoppen.
           their   discriminating by Peter   must stop

The fact illustrated by (391) that the postnominal *door*-PP and the prenominal genitive noun phrase or possessive pronoun cannot be used simultaneously shows that they indeed both refer to the agent argument of the input verb.

(391) a.   *Hun getreiter   van peuters$_{Theme}$ door grote jongens$_{Agent}$ is onaanvaardbaar.
           their bullying   of toddlers   by big boys   is unacceptable
    b.   *Zijn gediscrimineer van ouderen$_{Theme}$ door Peter moet stoppen.
           his   discriminating of elderly   by Peter   must stop

    Transitive verbs that denote a telic, homogeneous action (accomplishments) are normally not allowed as input for GE-nominalization. Examples that show this are given in (392): that the verbs *schrijven* 'write' and *repeteren* 'rehearse' in the

primeless examples are indeed accomplishments is clear from the fact that adding an adverbial phrase of frequency like *elke dag* gives rise to a marked result at best.

(392) a.   Hij   schrijft   het boek   (*elke dag).
            he   writes   the book   every day
       a′. *zijn geschrijf   van dat boek_Theme
            his   writing   of that book
       b.   Zij repeteren het toneelstuk (ᵗelke dag).
            the rehearse   the play   every day
       b′. *hun   gerepeteer van dat toneelstuk_Theme
            their   rehearsing of that play

The verbs *schrijven* and *repeteren* can also be used as activity verbs denoting a non-telic action, in which case the theme argument appears as a PP. The verbal construction then refers to an instance out of a series of related events, which is clear from the fact that in these cases an adverbial phrase of frequency can be used, and now GE-nominalization is possible.

(393) a.   Hij   schrijft   (elke dag)   aan het boek_Theme.
            he   writes   every day   on the book
       a′. zijn geschrijf   aan dat boek_Theme
            his   writing   to that book
            'his working on that book'
       b.   Zij   repeteren   (elke dag)   op dat toneelstuk_Theme.
            their   rehearsing every day   on that play
       b′. hun   gerepeteer op dat toneelstuk_Theme
            their   rehearsing on that play

The transitive form of the verb *schrijven* is also non-telic when it takes a nonspecific theme, as in (394a). GE-nominalization with expression of the theme as a *van*-PP is possible in this case.

(394) a.   Hij   schrijft   goedkope romannetjes.
            he   writes   cheap romances
       b.   Het geschrijf   van goedkope romannetjes_Theme   was onbevredigend.
            the writing   of cheap romances   was unsatisfactory

As in the case of GE-nouns derived from intransitive verbs, the agent can occasionally be expressed by a relational adjective, as in (395a&b), where geographical adjectives such as *Nederlands* 'Dutch' and *Frans* 'French' refer to the agent of the input verb. Again, this does not imply that the adjective must be interpreted as the inherited agent argument of the input verb; it may have the same non-agentive interpretation as in, e.g., *het Nederlandse parlement* 'the Dutch parliament', and allow the agent argument to remain unexpressed by making it contextually recoverable. Observe that the relational adjective cannot express the semantic role of theme; cf. (395b′).

(395) a.   het Nederlandse_{Agent} geloos   van giftig afval in de Maas
       the Dutch   dumping of toxic waste   in the Maas
    b.   het Franse_{Agent} gekleineer van Nederland
       the French   belittling of the.Netherlands
    b′. *het Nederlandse_{Theme} gekleineer door Frankrijk
       the Dutch   belittling   by France

C. GE-nominalizations with only the agent argument expressed

The theme normally can only be left unexpressed in generic contexts. This means that GE-nominalization of the form *het getreiter van NP* may be ambiguous between a reading in which the *van*-PP has the role of the theme and a reading in which this PP has the role of agent; cf. (396). Taken out of context, the default interpretation is the one with the *van*-PP as the theme. The theme can of course also be left out when the input verb can be used as a pseudo-intransitive. This illustrated in (397).

(396) a.   Het getreiter van die kleine kinderen_{Theme} is onaanvaardbaar.
       the bullying   of those little children   is unacceptable
    b.   Het getreiter van die grote jongens_{Agent} is kinderachtig.
       the bullying   of those big boys   is childish

(397) a.   Jan rookt
       Jan smokes
    b.   dat gerook   van Jan_{Agent} irriteert me.
       that smoking   of Jan   annoys me

IV. GE-nominalizations derived from ditransitive verbs

The number of triadic GE-nominalizations is fairly restricted, as many ditransitive verbs (like *uitreiken* 'to present', *overdragen* 'to transfer/hand over', *overhandigen* 'to hand over/deliver' and *verschaffen* 'to provide') are prefixed and as such excluded from GE-nominalization: **geuitgereik*; **geoverdraag*; **geoverhandig*. However, GE-nouns can be derived from ditransitive verbs like *geven* 'to give', *doneren* 'to donate' etc. It is possible for such GE-nominalizations to occur with all three arguments expressed, although such occurrences are very rare in actual practice. More often one (typically the agent) or two (agent and recipient) of the arguments are left unexpressed; in generic contexts none of the arguments need be expressed, as, for instance, in example (398). Below, we will consider those cases in which at least one argument appears.

(398)   Al dat gedoneer is natuurlijk   bijzonder goed voor ons imago.
       all this donating is naturally   extremely good for our image

A. GE-nominalizations with the theme argument expressed

The theme argument of GE-nominalizations based on ditransitive verbs can only take the form of a postnominal *van*-PP; as in the case of GE-nominalizations derived from transitive verbs, the prenominal position is not available for themes; cf. example (390).

(399) a.   Het gegeef van cadeaus$_{Theme}$ op 5 december is een leuke traditie.
          the giving of presents   on 5 December is an old tradition
     b.   Dat gedoneer van grote bedragen$_{Theme}$ is een dure gewoonte.
          that donating of large sums   is an expensive habit

*B. G*E*-nominalizations with the agent and the theme argument expressed*

The examples in (400a&b) show that the agent argument can be added either in the form of a postnominal *door*-PP or in the form of a prenominal genitive noun phrase or possessive pronoun. The theme argument always takes the form of a postnominal *van*-PP. The agentive *door*-PP normally follows the theme; it can only occur between the head noun and theme argument with a "heavy" theme PP; cf. (400a′).

(400) a. ?Het gedoneer van grote bedragen$_{Theme}$ door multinationals$_{Agent}$
          the donating of large sums   by multinationals
          is   onderzocht.
          has-been examined
     a′. Het gedoneer door multinationals$_{Agent}$ van bedragen boven
          the donating   by multinationals   of sums over
          de €100.000$_{Theme}$ is onderzocht.
          the €100,000   has-been examined
     b.   Peters/Zijn$_{Agent}$ gedoneer van grote bedragen$_{Theme}$ is   onderzocht.
          Peters/his   donating of large sums   has.been examined

*C. G*E*-nominalizations with the theme and the recipient argument expressed*

The recipient argument always takes the form of a postnominal *aan*-PP, which normally follows the theme; the reverse order in (401b), with the recipient *aan*-PP preceding the theme, is only possible with "heavy" theme arguments.

(401) a. Het gedoneer van grote bedragen$_{Th}$ aan goede doelen$_{Rec}$ is onderzocht.
          the donating of large sums   to good ends   has.been examined
          'The donating of large sums to good causes will be examined.'
     b.   Het gedoneer aan goede doelen$_{Rec}$ van bedragen boven de €100.000$_{Theme}$
          the donating   to good ends   of sums over the €100,000
          is   onderzocht.
          has-been examined

*D. G*E*-nominalizations with all three arguments expressed*

It is possible to express all three arguments, although the result is rather forced and will rarely be encountered even in formal language use. Example (402) gives all the relevant constructions in order of decreasing acceptability: the preferred order is that in which the theme is closest to the head, followed by the recipient and the agent, as in (402a); reversing the order of recipient and agent, as in (402b), is possible; reversing the order of theme and recipient, as in (402c), gives rise to a marked result; all other orders are severely degraded.

(402) a.   het gedoneer van grote bedragen~Theme~ aan goede doelen~Rec~ door multinationals~Agent~
        the donating of large sums   to good ends   by multinationals
        'the donating of large sums to good causes by multinationals'
    b.   het gedoneer van grote bedragen~Theme~ door multinationals~Agent~ aan goede doelen~Rec~
    c.   ??het gedoneer aan goede doelen~Rec~ van grote bedragen~Theme~ door multinationals~Agent~
    d.   *het gedoneer aan goede doelen~Rec~ door multinationals~Agent~ van grote bedragen~Theme~
    e.   *het gedoneer door multinationals~Agent~ van grote bedragen~Theme~ aan goede doelen~Rec~
    f.   *het gedoneer door multinationals~Agent~ aan goede doelen~Rec~ van grote bedragen~Theme~

As shown in example (403), the agent (but not the theme or recipient) can also take the form of a prenominal genitive noun phrase or possessive pronoun.

(403) a.   hun/Unilevers~Agent~ gedoneer van grote bedragen~Theme~ aan goede doelen~Rec~
        their/Unilever's   donating of large sums   to good ends
        'their/Unilever's donating of large sums to good causes'
    b.   *hun~Theme~ gedoneer aan goede doelen~Rec~ door multinationals~Agent~
        their   donating to good ends   by multinationals
    c.   *hun~Rec~ gedoneer van grote bedragen~Theme~ door multinationals~Agent~
        their   donating of large sums   by multinationals

V. GE-*nominalizations of verbs with prepositional arguments*

GE-nominalizations can also inherit PP-themes from verbs like *jagen op* 'to hunt for' and *zoeken naar* 'to search for'. This is shown for the GE-noun *gejaag* in (404a), which inherits the preposition selected by the base verb *jagen*. The agent can be realized postnominally either as a *door-* or as a *van*-PP, and prenominally as a genitive noun phrase or possessive pronoun. The agent can also be expressed by means of a relational adjective like *Noors* 'Norwegian'.

(404) a.   Het gejaag op groot wild~Theme~ door/van adellijke heren~Agent~ is verachtelijk.
        the hunting on big game   by/of noble gentlemen   is despicable
        'The hunting of big game by aristocrats ought to be prohibited.'
    b.   Hun~Agent~ gejaag op groot wild~Theme~ is verachtelijk.
        their   hunting on big game   is despicable
    c.   Het Noorse   gejaag op walvissen~Theme~ is verachtelijk.
        the Norwegian hunting on whales   is despicable

VI. GE-*nominalizations of verbs taking a complementive*

Like ING-nominalizations, GE-nominalizations do not accept as input constructions involving a °complementive adjective. This is illustrated by the examples in (405), which show that these constructions are unacceptable regardless of the position (post- or prenominal) of the predicate.

(405) a.   De regering   acht   inmenging   ongewenst.
        the government deems intervention undesirable
    a′.   *Het <ongewenst> geacht   van inmenging <ongewenst> verraste ons niet.
        the   undesirable   deeming of intervention   surprised us not

b.   Zij   noemt   alle mensen dom.
    she   calls   all people   stupid

b′.   *Haar <dom> genoem van alle mensen <dom> lost   niets   op.
    her   stupid   calling   of all people   solves nothing prt.

When the complementive is introduced by a preposition like *tot* or *als*, the GE-nominalization is marked but still more or less acceptable when the complementive occurs postnominally. This is illustrated in examples (406a&b).

(406) a.   Het <*tot keizer> gekroon   van mensen <$^?$tot keizer> is uit de tijd.
       the   to emperor   crowning of people   is out the time
       'The crowning of people emperor is out-of-date.'

    b.   Peters <*als geniaal> gekarakteriseer   van haar werk <$^{??}$als geniaal>
       Peter's   as brilliant   characterization   of her work
       begint   me te vervelen.
       begins   me to bore
       'Peter's characterization of her work as brilliant is getting on my nerves.'

VII. Conclusion

This section has discussed the form and distribution of the various arguments of GE-nominalizations. Just like with INF- and ING-nominalizations, the theme argument is normally obligatory; it must appear as a postnominal *van*-PP, preferably in the position immediately adjacent to the head. Recipients may (but need not) be expressed as a postnominal *aan*-PP, which typically follows the theme. The agent can also be expressed by means of a postnominal PP, which typically follows the theme and the recipient, if present. The form of the agentive PP depends on the type of input verb: when the input verb is intransitive the agent is obligatorily realized as a *van*-PP; when the input verb is (di-)transitive, it is realized as a *door*-PP; when the input verb takes a PP-complement, the agent can be expressed by either a *van*- or a *door*-PP. The agent can also appear in the form of a genitive noun phrase or possessive pronoun, provided that it has a [+HUMAN] referent. Table 10 summarizes the discussion of GE-nominalizations derived from intransitive, transitive and ditransitive verbs.

Table 10: The form and position of the complements of GE-nominalizations

TYPE OF VERB	PATTERN	EXAMPLES
INTRANSITIVE	N + *van*-PP$_{Agent}$	(383a)
	NP*s*/pronoun$_{Agent}$ + N	(383b)
TRANSITIVE	N + *van*-PP$_{Theme}$ (+ *door*-PP$_{Agent}$)	(385)/(389)
	* NP*s*/pronoun$_{Theme}$ + N (+ *door*-PP$_{Agent}$)	(386)/(390′)
	NP*s*/pronoun$_{Agent}$ + N + *van*-PP$_{Theme}$	(390)
DITRANSITIVE	N + *van*-PP$_{Theme}$ (+ *aan*-PP$_{Rec}$) (+ *door*-PP$_{Agent}$)	(399)/(400)/ (401a)/(402)
	*NP*s*/pronoun$_{Theme}$ + N (+ *aan*-PP$_{Rec}$) (+ *door*-PP$_{Agent}$)	(403b)
	NP*s*/pronoun$_{Agent}$ + *van*-PP$_{Theme}$ (+ aan-PP$_{Rec}$)	(403a)

When we compare this table to Table 8, which gives the basic patterns of ING-nominalizations, we see two important differences. First, the monadic verbs are unaccusative in the case of ING- but intransitive in the case of GE-nominalizations. Second, prenominal realization of the theme as a possessive pronoun or genitive noun phrase is possible with ING- but not with GE-nominalizations.

2.2.3.4.2. *Application of the complement/adjunct tests*

The preceding section has shown that GE-nouns typically combine with PPs that correspond to the arguments of the input verb. However, since in many cases complements and adjuncts are not formally distinguished within the noun phrase, it is conceivable that some of these PPs are adjuncts. This section will therefore apply the four tests that have been proposed in Section 2.2.1 to distinguish complements and adjuncts within the noun phrase to GE-nominalizations. We will see that the results of these tests confirm our assumption that the inherited arguments of GE-nominalizations are complements rather than adjuncts of the head.

I. *Obligatoriness of PP*

GE-nominalizations can be seen as inheriting the argument structure of the input verb, with the nominal construction resembling the verbal construction as regards the number of arguments and their thematic functions. However, whereas the arguments of verbs must be explicitly expressed, this is not equally true of the inherited arguments of the corresponding GE-nouns. When the base verb is intransitive, the agent is normally expressed, but it can still be left implicit when it is somehow implied, as in the primed examples of (407); in (407b′), for example, it is clear from the context that the giggling was done by people attending the class.

(407) a.   Jan keek   naar het gewandel *(van de patiënten).
          Jan looked at the strolling   of the patients
          'Jan watched the strolling of the patients.'
      a′. Jan keek   naar het gewandel in het park.
          Jan looked at the strolling   in the park
          'Jan watched the strolling (of the patients) in the park.'
      b.   De docent   ergerde   zich aan het gegiechel *(van de meisjes).
          the teacher annoyed REFL at the giggling   of the girls
          'The teacher was annoyed by the giggling of the girls.'
      b′. De docent   ergerde   zich aan het gegiechel tijdens de les.
          the teacher annoyed REFL at the giggling   during the lesson
          'The teacher was annoyed by the giggling during the lesson.'

Example (408a) shows that in GE-nominalizations derived from a transitive verb the theme argument must normally be present, whereas the agent can quite felicitously be left out. However, when the theme is somehow implied, it need not be expressed: in (408b), for example, it is clear from the context that at least one student in the class is being bullied by some other person(s) in the class, and this makes it possible to leave the theme implicit.

(408) a. Peter maakte een einde aan het getreiter *(van de kinderen) (door Jan).
　　　 Peter made   an end   to the bullying   of the children   by Jan
　　　 'Peter put a stop to the/Jan's bullying of the children.'
　　 b. Peter maakte een einde aan het getreiter in de klas.
　　　 Peter made   an end   to the bullying   in the class
　　　 'Peter put a stop to the bullying in the class.'

If the input verb is ditransitive, as in (409), the recipient may normally also be left unexpressed, just as in the corresponding verbal construction. Observe that, if they are left out, the presence of the agent and recipient arguments is still implied and must be recoverable or inferable from the context.

(409)　　De economische crisis beëindigde het gedoneer *(van grote bedragen)
　　　　the economic crisis   stopped   the donating   of large sums
　　　　(aan goede doelen) (door multinationals).
　　　　to good ends   by multinationals
　　　　'The crisis stopped the donating of large sums to good causes by multinationals.'

GE-nominalizations derived from verbs selecting a PP-complement pattern with those derived from transitive verbs; the PP-theme can only be left out when it can be recoverable or inferable from the context. This is illustrated in (410).

(410) a. De regering   verbood   het gejaag *(op groot wild) (door amateurs).
　　　 the government prohibited the hunting   on big game   by amateurs
　　　 'The government prohibited the hunting of big game by amateurs.'
　　 b. De regering   verbood   het gejaag in de buurt van de bebouwde kom.
　　　 the government prohibited the hunting nearby built-up areas
　　　 'The government prohibited the hunting nearby built-up areas.'

In short, it seems that the arguments of the GE-nouns can only be left out when they are recoverable or inferable from the context. If this is not possible, leaving out these arguments is likely to lead to marked results, unless the construction in question is generic; see Section 2.2.1.2 for these and other exceptions.

II. Occurrence of the PP in postcopular predicative position

The examples in (411) show that the *van*-PPs that can be found in GE-nominalizations cannot occur in postcopular position. This is, of course, hardly surprising, as *van*-PPs in postcopular position are interpreted as possessive elements and states of affairs, the denotation of GE-nominalizations, cannot be possessed. This is also true for inherited PP-arguments, as illustrated in example (411f).

(411) a. *Het gewandel is van patiënten.　　　　　　　　　　　[agent]
　　　　 het strolling   is of the patients
　　 b. #Het gegiechel is van de meisjes.　　　　　　　　　　　[agent]
　　　　 the giggling   is of the girls
　　 c. *Het getreiter   is van de kinderen.　　　　　　　　　　　[theme]
　　　　 that bullying   is of the children
　　 d. *Het gekopieer is van dure boeken.　　　　　　　　　　　[theme]
　　　　 the copying   is of the books

    e.   *Het gedoneer is van geld (aan goede doelen).   [theme & recipient]
         the donating   is of money to good ends
    f.   *Het gejaag   is op groot wild.   [PP-theme]
         the hunting   is on big game

Note that constructions like (411b), in which the GE-noun is derived from a verb of sound emission, are acceptable under a slightly different interpretation, namely one in which the postcopular *van*-PP provides the source of the sound in question, in which case we are no longer dealing with arguments of the GE-nominalization, but with modifiers (the same thing is suggested by the English renderings). The examples in (412) show that in construction like these the verb *zijn* can be replaced by the verb *komen (van).*

(412) a.   Het gegiechel dat je nu hoort   is/komt   van de meisjes in B103.
          the giggling   that you now hear is of /comes   from the girls in B103
          'The giggling you hear now is made by the girls in B103.'
     b.   Het gebonk dat je nu hoort   is/komt   van de motoren.
          the pounding that you now hear is of/comes from the engines
          'The pounding you hear now is made by the engines.'

III. R-pronominalization

Example (413a) shows that R-pronominalization of the theme of a GE-noun derived from a transitive verb gives rise to a fully acceptable result. R-pronominalization of the theme argument of a GE-noun derived from a ditransitive verb seems somewhat marked but is acceptable, and the same thing holds for R-pronominalization of theme arguments headed by prepositions other than *van*.

(413) a.   Het gekopieer ervan   kost   veel tijd.
          the   copying   there-of costs much time
          'Their copying takes a lot of time.'
     b.   [?]Het gedoneer ervan   aan goede doelen moet gestimuleerd worden.
          the donating there-of to good ends   must stimulated   be
     c.   ^{??}Het gejaag   erop   is verboden.
          the   hunting there-on is prohibited

When the *van*-PP expresses the agent, R-pronominalization gives rise to a marked result, which may be due to the fact that agents are typically [+ANIMATE]; PPs with animate noun phrases do not much favor R-pronominalization. R-pronominalization of agentive *door*-PPs or *aan*-PPs expressing a recipient gives rise to a completely unacceptable result.

(414) a.   ^{??}Het gewandel ervan   is erg gezond.
          the walking   there-of is very healthy
     b.   *Het gebijt van kleine kinderen erdoor zou   strafbaar   moeten zijn.
          the   biting of little children   thereby should punishable must   be
     c.   *Het gedoneer van grote bedragen eraan   moet   gestimuleerd worden.
          the   donatingof large sums   there-to should stimulated   be

R-pronominalization is possible with inherited subjects of verbs of sound-emission, provided at least that they are preceded by the article *het* 'the'; the result with the expressive demonstrative *dat* seems degraded. It is not clear, however, what we can conclude from this given that our discussion of the examples in (417) and (421) below suggests that GE-nouns derived from these verbs have a special status.

(415) a.　Het/*Dat geblaf　van dat soort hondjes/ervan　kan heel hinderlijk　zijn.
　　　　　　the/that   barking of that sort dogs_dim/there-of can very irritating   be
　　　　　　'The barking of that kind of dog/it can be very irritating.'

　　　　b.　Het/*Dat gezoem van de wekker/ervan　　　is amper te horen.
　　　　　　the/that   buzzing of this alarm clock/there-of is hardly to hear
　　　　　　'The buzzing of this alarm clock/it can hardly be heard.'

IV. Extraction of PP

The PP-extraction tests yield results that are far from unequivocal. The acceptability of extraction often depends on the ease with which a contrastive interpretation can be construed, and on the type of base verb.

A. Topicalization

Application of the topicalization test gives rise to mixed results. First of all, the acceptability of these sentences depends on the ease with which a contrastive interpretation can be construed. This may suggest that the topicalized phrase is actually not an argument of the clause, but an independently generated restrictive adverbial phrase.

(416) a.　?Van die patiënten heb　ik het gewandel nauwlettend gadeslagen.
　　　　　　of those patients   have I   the strolling   closely   prt.-followed
　　　　　　'I have closely followed the strolling of those patients.'

　　　　b.　??Van deze peuters vind ik   het getreiter (door Jan) onaanvaardbaar.
　　　　　　of these toddlers   find I   the bullying   by Jan   unacceptable
　　　　　　'I consider Jan's bullying of these toddlers unacceptable.'

　　　　c.　*Van die dure boeken   is het gekopieer (door studenten) begrijpelijk.
　　　　　　of those expensive books is the copying   by students   understandable
　　　　　　'The copying of those expensive books by students is understandable.'

　　　　d.　*Van dergelijke bedragen is het gedoneer (aan goede doelen) een dure hobby.
　　　　　　of such sums   is the donating to good ends   an expensive hobby
　　　　　　'The donating (to good causes) of such sums is an expensive habit.'

　　　　e.　??Op deze dieren   neem het gejaag   steeds   meer af.
　　　　　　on these animals takes the hunting every time more prt.
　　　　　　'The hunting of these animals is diminishing more and more.'

Moreover, in the case of GE-nominalizations derived from verbs of sound-emission, preposing of the agentive *van*-PP is more acceptable than the GE-nominalizations derived from other intransitive verbs. This will become clear by comparing example (416a) to those in (417). The meanings of these examples strongly suggest that we actually are dealing with a restrictive adverbial phrase. It is further interesting to note that examples like those in (417) become considerably worse when the definite article *het* is replaced by the expressive demonstrative *dat* 'that', which is normally

preferred with GE-nominalizations carrying a negative meaning aspect. This might be due to the fact that GE-nominalizations with expressive *dat* are less referential than those with the article *het*.

(417) a.   Van het jongetje kunnen we het/*?dat gestotter   haast niet verstaan.
      of the boy$_{dim}$ can   we the/that   stuttering almost not hear
      'They could hardly hear the stuttering of the little boy.'

    b.   Van dat soort hondjes kan het/*dat geblaf   heel hinderlijk zijn.
      of that sort dogs$_{dim}$ can the/that   barking very irritating   be
      'The barking of that kind of dog can be very irritating.'

    c.   Van deze wekker   kun je   het/*?dat gezoem haast niet horen.
      of this alarm clock can you   the/that buzzing almost not hear
      'You can hardly hear the buzzing of this alarm clock.'

    d.   Van deze klokken is het/*dat gelui   in heel Amsterdam   te horen.
      of these bells   is the/that chiming in whole Amsterdam to hear
      'The chiming of these bells can be heard all over Amsterdam.'

The examples in (418) show that extraction of non-theme PPs is never possible: neither extraction of the agent nor of the recipient PP leads to acceptable results.

(418) a. *Door grote jongens heb   ik het getreiter van peuters altijd
      by big boys   have I   the bullying of toddlers always
      kinderachtig gevonden.
      childish   found

    b. *Aan goede doelen is het gedoneer van grote bedragen (door multinationals)
      to good ends   is the donating of large sums   by internationals
      een dure gewoonte.
      an expensive habit

Observe, however, that with the agent expressed by means of a *van*-PP instead of a *door*-PP, it seems quite acceptable for the agent to appear in initial position, especially when it contains a focus particle, like *ook* 'also' or *zelfs* 'even'. This would be compatible with the suggestion in Section 2.2.1.5, sub IIA, that restrictive focus creates a more tolerant environment for topicalization. Alternatively, it may be the case that we are dealing here with an independent restrictive adverbial phrase, which would be supported by the fact that agentive *van*-PPs normally cannot co-occur with *van*-phrases expressing the theme: an analysis in which the *van*-PPs in clause-initial position originates within the noun phrase is therefore not very likely.

(419)   Ook/Zelfs van Jan heb   ik het getreiter van peuters nooit geaccepteerd.
      also/even of Jan   have I   the bullying of toddlers never accepted
      'Of Jan too/Even of Jan I have never accepted the bullying of toddlers.'

B. Relativization and questioning

Relativization and questioning of the PP-complement yields results comparable to those of topicalization. This is illustrated in example (420) for some of the constructions discussed in (416).

(420) a. [?]de patiënten van wie het gewandel nauwlettend werd gadegeslagen
the patients of who the strolling closely was observed
'the patients whose strolling was closely observed'

a′. [?]Van welke patiënten werd het gewandel nauwlettend gadegeslagen?
of which patients was the strolling closely observed
'Of which patients was the strolling closely observed?'

b. *de bedragen waarvan het gedoneer een dure gewoonte is
the sums where-of the donating an expensive habit is

b′. *Van welke bedragen is het gedoneer een dure gewoonte?
of which sums is the donating an expensive habit

c. ^{??}het soort wild waarop het gejaag verboden zou moeten worden
the sort wild where-on the hunting prohibited should must be
'the kind of wild the hunting of which should be prohibited'

c′. ^{??}Op welk soort wild zou het gejaag verboden moeten worden?
on which sort wild should the hunting prohibited must be
'Of which sort of game should the hunting be prohibited?'

Again, GE-nominalizations based on verbs of sound emission, like *geblaf* 'barking'
in (421), at least superficially seem to be most flexible with regard to preposing of
the theme argument. But, as in (417), it is very likely that we actually are dealing
here with a (restrictive) adverbial phrase.

(421) a. het soort hondjes waarvan het geblaf heel hinderlijk kan zijn
the sort of dog where-of the barking very irritating can be
'the kind of dog the barking of which can be very irritating'

b. Van welk soort hondjes kan het geblaf heel hinderlijk zijn?
of which sort dog can the barking very irritating be
'Of which kind of dog can the barking be very irritating?'

C. PP-over-V and Scrambling

The examples in (422) show that, as with INF- and ING-nominalizations, PP-over-V
leads to unacceptable results. Example (422a′) shows that this also holds for *van*-
PPs that seemingly express the agent of GE-nominalizations based on verbs of sound
emission. This is not really surprising given that restrictive adverbial phrases
normally cannot follow the verbs in clause-final position either.

(422) • Test 4C: PP-over-V

a. *Ik heb het gewandel nauwlettend gadegeslagen van deze patiënten.
I have the strolling closely observed of these patients

a′. ^{??}Ik heb het geblaf altijd hinderlijk gevonden van dit soort hondjes.
I have the barking always annoying found of this sort dogs
'I have always considered the barking of these dogs very annoying.'

b. ^{*?}De regering zou het gejaag moeten verbieden op dat soort wild.
the government should the hunting must prohibit on that sort game

c. [?]Men zou het gedoneer moeten stimuleren van dat soort bedragen.
one should the donating must stimulate of that sort sums
'The donating of this kind of sums ought to be stimulated.'

The acceptability of the examples in (423) shows that scrambling is possible for agentive *van*-PPs and all theme PPs, regardless of the preposition used or the type of construction (dyadic/triadic) in question. All resulting sentences are, however, highly contrastive, which may suggest that they all involve a restrictive adverbial phrase rather than an extracted argument of the noun.

(423)　　　● Test 4D: Scrambling
　　　a.　Ik heb van deze patiënten het gewandel nauwlettend gadegeslagen.
　　　　　I have of these patients the strolling closely observed
　　　　　'It is of these patients that I have closely observed the strolling.'
　　　a′.　Ik heb van dit soort hondjes het geblaf altijd hinderlijk gevonden.
　　　　　I have of this sort dogs the barking always annoying found
　　　　　'It is of this kind of dog that I have always considered the barking annoying.'
　　　b.　De regering zou op dat soort wild het gejaag moeten verbieden.
　　　　　the government should on that sort game the hunting must prohibit
　　　　　'It is on this kind of game that the government should prohibit the hunting.'
　　　c.　Men zou van dat soort bedragen het gedoneer moeten stimuleren.
　　　　　one should of that sort sums the donating must stimulate
　　　　　'It is of this kind of sums that the donating ought to be stimulated.'

With agentive *door*-PPs and other non-theme PP arguments, both PP-over-V and scrambling are clearly impossible, as illustrated by the unacceptability of the examples in (424).

(424) a.　*Men moet het gedoneer (door multinationals) stimuleren aan goede doelen.
　　　　　one must the donating by multinationals stimulate to good ends
　　　a′.　*Men moet aan goede doelen het gedoneer (door multinationals) stimuleren.
　　　b.　*Men moet dat gekopieer van dure boeken verbieden door studenten.
　　　　　one must that copying of expensive books prohibit by students
　　　b′.　*Men moet door studenten dat gekopieer van dure boeken verbieden.

V. Conclusion

Table 11 summarizes the results of the four tests for inherited theme arguments of GE-nouns. The third and fifth columns indicate whether the results provide evidence for or against the assumption that we are dealing with complements. The first three tests provide unequivocal evidence for complement status both of the *van*-PPs and theme-PPs headed by other prepositions. There is a marked difference in behavior between *van*-PPs and PPs headed by other prepositions with respect to the possibility of extraction: the conclusion that inherited theme PPs function as complements receives, at best, weak support from the extraction facts. However, since we have seen that the PP-extraction tests are problematic in various respects, and may not be suitable for establishing complement status of PPs, it seems we can still safely conclude that both types of theme-PP function as an argument of the derived noun.

Table 11: Theme complements of GE-nominalization: outcome of Tests 1-4

	VAN-PPs		OTHER PPs	
Test 1: PP obligatory	+	positive	+	positive
Test 2: Post-copular position	—	positive	n.a.	n.a.
Test 3: R-pronominalization	+	positive	+	positive
Test 4A: Topicalization	??	?	??	?/negative
Test 4B: Relativization/questioning	??		??	
Test 4C: PP-over-V	??		—	
Test 4D: Scrambling	?		?	

For recipient *aan*-PPs and agentive *door*-PPs it is more difficult to establish whether they are arguments of the noun. Only the first test is relevant for them, and it seems that this test provides evidence against assuming argument status: recipients and agents normally need not be expressed. However, given that recipients and agentive *door*-phrases are normally also optional in verbal constructions, this is not conclusive. We will therefore assume that they have a similar status as the theme, which clearly does behave as an argument.

2.2.3.5. Deverbal nouns: summary

This section briefly repeats the main findings concerning the form and position of the inherited arguments of the deverbal nouns. For a full overview of the most common patterns, see the summaries in the concluding subsections of Sections 2.2.3.1.1, 2.2.3.2.2, 2.2.3.3.1, and 2.2.3.4.1.

I. Nominalizations derived from intransitive verbs

Table (425) shows that the agent argument of nominalizations derived from an intransitive verb is optionally realized as a postnominal *van*-PP or, when the agent is [+HUMAN], a prenominal genitive noun phrase or possessive pronoun. The only exceptions are ER- and BARE-INF nouns: ER-nouns do not take an agentive argument, which is due to the fact that the agent is represented by the suffix –*er*, and with BARE-INF nouns expression of the agent seems to give rise to a marginal result at best. The table does not include ING-nouns given that ING-nominalizations do not accept intransitive verbs as input.

(425) Realization of the agent in nominalizations derived from intransitive verbs

	PATTERN	EXAMPLE	TRANSLATION
ER	N	*wandelaar*	walker
DET-INF	DET + N + *van*-PP	*het lachen van Jan*	the laughing by Jan
	NP*s*/pronoun + N	*Jans lachen*	Jans laughing
BARE-INF	N ($^{??}$ + *van*-PP)	*lachen* ($^{??}$*van Jan*)	laughing (by Jan)
GE	N + *van*-PP	*het gelach van Jan*	the laughter of Jan
	NP*s*/pronoun + N	*Jans gelach*	Jan's laughter

II. Nominalizations derived from unaccusative verbs

Example (426) shows that the agent argument of nominalizations derived from an unaccusative verb is optionally realized as a postnominal *van*-PP or, when the agent is [+HUMAN], a prenominal genitive noun phrase or possessive pronoun. With BARE-INF nouns expression of the theme seems to give rise to a marginal result at best. The table does not include ER- and GE-nominalizations given that these nominalization do not accept unaccusative verbs as input.

(426) Realization of the theme in nominalizations derived from unaccusative verbs

	PATTERN	UNACCUSATIVE	TRANSLATION
DET-INF	DET + N + *van*-PP	*het vallen van kinderen*	the falling of children
	NP*s*/pronoun + N	[?]*hun vallen*	their falling
BARE-INF	N (^{??} + *van*-PP)	*vallen* (^{??}*van kinderen*)	falling (of children)
ING	N + *van*-PP	*de komst van Jan*	the coming of Jan
	NP*s*/pronoun + N	*Jans komst*	Jan's coming

III. Nominalizations derived from transitive verbs

In nominalizations derived from a (di-)transitive verb, the theme argument is normally obligatorily realized as a postnominal *van*-PP or a prenominal genitive noun phrase/possessive pronoun. The GE-nominalization, however, are somewhat special in that they do not allow the theme to be realized as a prenominal genitive noun phrase/possessive pronoun, and the INF-nominalizations are special in allowing the theme to appear as a prenominal accusative noun phrase.

(427) Realization of the theme in nominalizations derived from transitive verbs

	PATTERN	EXAMPLE	TRANSLATION
ER	N + *van*-PP	*de leider van de kinderen*	the leader of the children
	NP*s*/pronoun + N	*hun leider*	their leader
DET-INF	DET + N + *van*-PP	*het vernietigen van de stad*	the destruction of the city
	DET + NP + N	[?]*het steden vernietigen*	the destruction of cities
BARE-INF	N + *van*-PP	[?]*vernietigen van steden*	destroying cities
	NP + N	*steden vernietigen*	destroying cities
ING	N + *van*-PP	*de behandeling van Jan*	the treatment of Jan
	NP*s*/pronoun + N	*Jans behandeling*	Jan's treatment
GE	N + *van*-PP	*het getreiter van kinderen*	the bullying of children

The agent cannot be expressed with ER- and BARE-INF nouns, just as we have seen for the nominalizations derived from intransitive verbs. In the other cases, the agent is normally optional. It can be realized as a postnominal *door*-PP following the theme, or as a prenominal genitive noun phrase or possessive pronoun. The fact that in many cases, both the theme and the agent can be realized as a prenominal genitive noun phrase or possessive pronoun may lead to ambiguity.

IV. Nominalizations derived from ditransitive verbs

As far as the theme and agent argument are concerned, these nominalizations behave just like those derived from a transitive verb. The recipient argument is always optional and is realized as a postnominal *aan*-PP that preferably follows the theme. The INF-nominalizations are again special in allowing the recipient to appear as a prenominal dative noun phrase, and also in allowing the *aan*-PP to appear in prenominal position. Cases in which all three arguments of a triadic nominalization are realized are rare.

V. Nominalizations derived from verbs with a PP-complement

In nominalizations derived from verbs with a PP-complement, the complement is also inherited and preceded by the same preposition as in the verbal construction. Normally the PP occurs in postnominal position, except in the case of INF-nominalizations, which allow the PP to occur both pre- and postnominally.

VI. Nominalizations derived from verbs with a complementive

Verbs taking a °complementive normally cannot be nominalized, except when the complementive is an *als/tot*-phrase; the complementives are then normally realized in postnominal position. Again INF-nominalizations behave differently: they behave like verbs in that they allow other types of complementives, which must appear prenominally; predicative *als/tot*-phrases can occur both pre- and postnominally.

2.2.4. Deadjectival nouns

The input for a deadjectival noun is always a set-denoting adjective, that is, a predicate denoting some property that can be predicated of or attributed to some entity; cf. A1.3.2. For example, the deadjectival noun *verlegenheid* 'shyness' in (428) takes the set-denoting adjective *verlegen* as its input. This adjective denotes the property of being shy, which can be predicated of the subject *Jan* in *Jan is verlegen* 'Jan is shy' or be attributed to the referent of the complete noun phrase *de verlegen jongen* 'the shy boy'. The deadjectival noun *verlegenheid* 'shyness' also denotes a property, but differs from the adjective in that this property is not primarily assigned to some specific entity, but denotes an abstract entity. As a result, it can head a noun phrase that can function as an argument of some other predicate, which is clear from the fact that the noun phrase *Jans verlegenheid* 'Jan's shyness' functions as the subject of the clause in (428).

(428)   Jan   verlegenheid bezorgt hem veel last.
          Jan's shyness   gives   him much trouble
          'Jan's shyness gives him a lot of trouble.'

Example (428) also shows that the argument of the adjective can be realized within the noun phrase, which suggests that the deadjectival noun inherits the argument structure of the adjective. This will be the main topic of this section: Section 2.2.4.1 will consider issues concerning the expression of the arguments of different types of input adjectives and Section 2.2.4.2 will apply the adjunct/complement tests from Section 2.2.1 to the inherited arguments of the adjective in order to investigate whether these can be considered complements of the derived nouns.

2.2.4.1. Complementation

The arguments of the input adjective can also be expressed within the noun phrase headed by the deadjectival noun. Three cases can be distinguished: the derived adjective may be monadic, dyadic or triadic. In (429) examples are given of each case. In what follows, we will discuss the three types in turn.

(429)   • Deadjectival nouns
   a.   Jans   verlegenheid   [monadic]
         Jan's shyness
   b.   Peters   gehoorzaamheid aan het gezag   [dyadic]
         Peter's   obedience   to the authority
   c.   zijn/$^?$Jans boosheid op Marie over die opmerking   [triadic]
         his/Jan's   crossness on Marie about that remark

I. Nouns derived from monadic adjectives

Monadic adjectives are adjectives that take a single argument, which we have assumed in Section 1.3.2.2 to be assigned the thematic role of REFERENT. The adjective is predicated of this argument (henceforth we will ignore the attributive use of adjectives, unless it has something to tell us), as is illustrated for the monadic adjectives *verlegen* 'shy' and *hoog* 'high' in (430a&b).

(430) a.   Jan$_{Ref}$ is verlegen.
            Jan   is shy
      b.   De toren$_{Ref}$ is hoog.
            the tower   is high

The examples in (431) show that the Ref-argument can also be expressed within noun phrases headed by a deadjectival noun. It can either be expressed as a post-nominal *van*-PP or as a prenominal possessive pronoun or genitive noun phrase. As always, the latter option is restricted to proper nouns and a restricted set of [+HUMAN] nouns.

(431) a.   Zijn/Jans verlegenheid bezorgt hem veel last.
            his/Jan's shyness   gives   him much trouble
      a′.   De verlegenheid van die jongen bezorgt hem veel last.
            the shyness   of that boy   gives   him much trouble
      b.   De hoogte van de toren is indrukwekkend.
            the height of the tower   is impressive

The marginal status of the primeless examples in (432) show that, As with deverbal nouns, the referent argument is normally obligatory, although there are two exceptions. First, leaving out the argument is possible in generic statements like (432a′). Second, the argument need not be expressed when it is recoverable from the (extra-)linguistic context; example (432b) would be fully acceptable in a conversation about a particular tower.

(432) a. *?De verlegenheid is ziekelijk.
　　　　the shyness　　　is pathologic
　　a′. Verlegenheid is geen slechte eigenschap.
　　　　shyness　　　　is no bad quality
　　b. ??De hoogte is niet bekend.
　　　　the height　is not known
　　b′. De hoogte is groter dan de breedte.
　　　　the height is bigger than the width

II. Nouns derived from dyadic adjectives

Dyadic adjectives are adjectives that take two arguments, one of which is assigned the thematic role of referent. The second argument can be syntactically expressed in several ways, but we will restrict ourselves here to dyadic adjectives like *gehecht* 'attached' and *ingenomen* 'pleased' in (433) that take a theme argument in the form of a postadjectival PP since adjectives that take a genitive or dative NP-complement cannot be the input for nominalization; cf. Section 1.3.2.3.

(433) a. Jan is gehecht　*(aan zijn hond).
　　　　Jan is attached　　to his dog
　　b. Peter is ingenomen *(met het voorstel).
　　　　Peter is pleased　　　with the proposal

The examples in (434) show that the derived noun inherits both arguments; as in the case of the monadic nouns the referent argument can be expressed either by a postverbal *van*-PP, or as a prenominal possessive pronoun or genitive noun phrase. The second argument of the adjective is obligatorily in the nominal constructions in (434), and must follow the Ref-argument when the latter occurs as a postnominal *van*-PP. It is important to observe that the second argument takes the same form as in the corresponding adjectival construction.

(434) a. de gehechtheid van Jan$_{Ref}$ *(aan zijn hond)
　　　　the attachment　of Jan　　　to his dog
　　a′. Jans$_{Ref}$ gehechtheid　*(aan zijn hond)
　　　　Jan's　attachment　　　to his dog
　　b. de ingenomenheid van Peter *(met het voorstel)
　　　　the satisfaction　　of Peter　　with the proposal
　　b′. Peters$_{Ref}$ ingenomenheid *(met het voorstel)
　　　　Peter's　satisfaction　　　with the proposal

The examples in (435) show that with some adjectives the second argument is optional. It is therefore not surprising that the same thing holds for the nominalizations of these cases: it simply shows that the optionality or obligatoriness of the complement is among the features inherited by the deadjectival noun. Note that the Ref-argument cannot normally be left out: this is only possible in generic contexts or when it is recoverable from the context, but this will go unillustrated here.

(435) a.   Jan$_{Ref}$ is verliefd (op Marie$_{Theme}$).
           Jan   is in love   on Marie
           'Jan's in love with Marie.'
     b.   Jans$_{Ref}$ verliefdheid (op Marie$_{Theme}$)
           Jan's   infatuation   on Marie
     b′.   de verliefdheid van Jan$_{Ref}$ (op Marie$_{Theme}$)
           the infatuation of Jan   on Marie

     It seems that there is a difference in productivity of the nominalization process between the two cases. The examples in (436) show that it is easy to find examples of adjectives with an obligatory second argument that cannot be nominalized. This is, however, harder with adjectives with an optional second argument; the examples in (437) illustrate the high degree of productivity in this case.

(436) a.   Marie is gebrand *(op succes).
           Marie is eager   on success
           'Marie is eager for success.'
     a′. *Maries$_{Ref}$ gebrandheid (op succes)
          Marie's   eagerness   on success
     b.   Zij   is bestand *(tegen stress).
           she is resistant   against stress
           'She is stress-resistant.'
     b′. *haar$_{Ref}$ bestandheid (tegen stress)
          her   resistance   against stress

(437) a.   Marie is nieuwsgierig (naar de uitslag).
           Marie is curious   to the results
           'Marie is curious to know the results.'
     a′. Maries$_{Ref}$ nieuwsgierigheid (naar de uitslag).
          Marie's   curiosity   to the results
     b.   Wij zijn afhankelijk (van het weer).
           we   are dependent   of the weather
     b′. onze$_{Ref}$ afhankelijkheid (van het weer)
          our   dependency   of the weather
     c.   Zij is gevoelig (voor zulke dingen).
           she is sensitive   to such things
     c′. haar$_{Ref}$ gevoeligheid (voor zulke dingen)
          her   sensitivity   for such things
     d.   Peter$_{Ref}$is gehoorzaam (aan het gezag).
           Peter   is obedient   to the authority
     d′. Peters$_{Ref}$gehoorzaamheid (aan het gezag)
          Peter's obedience   to the authority

     The primeless examples in (438) show that the complements of attributively used adjectives must appear in pre-adjectival position; see Section A5.3 for discussion. A comparable position is, however, not available with deadjectival nouns; as shown in the primed examples in (438), these PPs can only be placed in postnominal position.

(438) a. de <op zijn vrouw> verliefde <*op zijn vrouw> man
          the on his wife   in love   man
          'the man (who is) in love with his wife'
    a'. zijn$_{Ref}$ <*op zijn vrouw> verliefdheid <op zijn vrouw>
         his   on his wife   infatuation
    b. de <aan het gezag> gehoorzame <*aan het gezag> jongen
        the to the authority obedient   boy
        'the boy (who is) obedient to the authorities'
    b'. zijn$_{Ref}$ <*aan het gezag> gehoorzaamheid <aan het gezag>
        his   to the authority   obedience
    c. de <aan zijn hond> gehechte <*aan zijn hond> jongen
        the to his dog   attached   boy
    c'. zijn$_{Ref}$ <*aan zijn hond> gehechtheid <aan zijn hond>
        his   to his dog   attachment

    Among the adjectives taking an optional prepositional complement, there are some cases where the presence or absence of the complement leads to syntactic differences with regard to the pluralization of the °logical SUBJECT of the adjective; see also Chapter A2. An example is given in (439): where the subject appears in the singular, as in (439a), the PP-complement must be present; if the subject appears in the plural, as in (439b), the PP is optionally present.

(439) a. De mens   is nauw verwant *(aan de chimpansee).
        the human is closely related   to the chimpanzee
        'Man is closely related to the chimpanzee.'
    b. De mens en de chimpansee   zijn nauw verwant (aan elkaar).
        the human and the chimpanzee are closely related to each.other
        'Man and chimpanzee are closely related (to each other).'

The adjectives in both constructions can be the input for nominalizations; interestingly, however, the nominal counterpart of the construction in (439a) selects a different preposition (*met* 'with' instead of *aan* 'to'), while in the case of (439b) the plural subject now appears as PP-complement with the preposition *tussen* 'between'. The relevant examples are given in (440).

(440) a. de verwantschap van de mens met de chimpansee
        the relationship   of the human with the chimpanzee
    a'. onze verwantschap met de chimpansee
        our relationship   with the chimpanzee
    b. de verwantschap tussen de mens en de chimpansee
        the relationship   between the human and the chimpanzee

III. Nouns derived from triadic adjectives

Occasionally, adjectives can occur with three arguments, that is, with a Ref-argument and two PP-complements. An example is given in (441a). The (b)-examples show that nouns derived from these adjectives can inherit all three arguments, albeit that the result may be somewhat marked. Again, the Ref-argument may appear prenominally as a genitive noun phrase/possessive pronoun or

postnominally as a *van*-PP. The second and third argument must occur postnominally in the same form and in the same order as in the original adjectival construction. Furthermore, they must follow the Ref-argument when the latter occurs as a postnominal *van*-PP. This means that any reordering of the PPs in (441b&b′) will have a degraded result.

(441) a.   Jan is boos   op Marie over die opmerking.
            Jan is angry on Marie   about that remark
            'Jan is angry with Marie because of that remark.'
     b.   Jans/Zijn$_{Ref}$ boosheid op Marie over die opmerking
            Jan's/his   crossness on Marie about that remark
     b′. de boosheid   van Jan$_{Ref}$ op Marie over die opmerking
            the crossness of Jan   on Marie about that remark

Since the complements of triadic adjectives are not always obligatorily expressed, it does not come as a surprise that the same thing is true of the complements of the derived noun; one might say that the optionality of the complement belongs to the features inherited from the adjective. Thus, the constructions in (442) are fully acceptable with the possible exception of (442a′), which for unclear reasons seems to be slightly degraded. Recall that the Ref-argument normally cannot be left out.

(442) a.   Jans$_{Ref}$ boosheid op Marie
            Jan's   crossness on Marie
     a′. $^?$de boosheid   van Jan$_{Ref}$ op Marie
            the crossness of Jan   on Marie
     b.   Jans$_{Ref}$ boosheid over die opmerking
            Jan's   crossness about that remark
     b′. de boosheid   van Jan$_{Ref}$ over die opmerking
            the crossness of Jan   about that remark
     c.   Jans$_{Ref}$ boosheid/de boosheid van Jan
            Jan   crossness/the crossness of Jans

IV. Conclusion

The inherited Ref-argument of deadjectival nouns must be realized either as a prenominal genitive noun phrase or possessive pronoun, or as a postnominal *van*-PP. The PP-complements of the base adjective are also inherited: they appear postnominally in the same form and order as the complements of the base adjective. Whether these PP-complements can be left implicit also depends on the properties of the base adjective.

(443) Complementation of monadic deadjectival nouns

Monadic	NP*s*/pronoun$_{Ref}$ + N	N + *van*-PP$_{Ref}$
Dyadic	NP*s*/pronoun$_{Ref}$ + N (+ PP$_{Theme}$)	N + *van*-PP$_{Ref}$ (+ PP$_{Theme}$)
Triadic	NP*s*/pronoun$_{Ref}$ + N (+ PP) (+PP)	N + *van*-PP$_{Ref}$ (+ PP) (+PP)

2.2.4.2. Application of the complement/adjunct tests

In many cases, PP-complements and PP-adjuncts are not formally distinguished within the noun phrase. It is therefore not impossible that what we called complements above are actually adjuncts. This section will therefore apply the tests provided in Section 2.2.1 to distinguish between complement PPs and adjunct PPs to deadjectival nouns. The conclusion that we will draw from this exercise is that we are indeed correct in assuming that the PPs discussed in this section are complements of the noun.

I. Obligatoriness of PP

Section 2.2.4.1 has already shown that the Ref-argument must normally be expressed: it can only be left implicit in generic contexts or when it is recoverable from the (extra-)linguistic context. We illustrate the obligatoriness of the Ref-argument again by means of a noun derived from the monadic adjective *vruchtbaar*.

(444) a.   Deze aarde$_{Ref}$ is vruchtbaar.
            this soil   is fertile
      b.   de   vruchtbaarheid   *(van de aarde$_{Ref}$)
            the fertility   of the soil

The obligatoriness of the PP-complements to nouns derived from dyadic adjectives depends on whether they are obligatory in the corresponding adjectival construction. In other words, the optionality or obligatoriness of the complement of the adjective is inherited by the deadjectival noun. The primed examples illustrate again that the Ref-argument can only be left implicit when it is recoverable: in (445a′) the use of the possessive pronoun *zijn* evokes the idea that the Ref-argument is the owner of the dog, and consequently leaving it implicit is allowed; in (445b′) such a clue is lacking, and leaving out the Ref-argument gives rise to a degraded result.

(445) a.   Jan$_{Ref}$ is gehecht   *(aan zijn hond).
            Jan   is attached   to his dog
      a′.   Jans$_{Ref}$/de   gehechtheid   *(aan zijn hond)
            Jan's   attachment   to his dog
      b.   Jan$_{Ref}$ is verliefd   (op Marie).
            Jan   is in love   on Marie
            'Jan is in love with Marie.'
      b′.   Jans$_{Ref}$/*de   verliefdheid   (op Marie)
            Jan's   infatuation   on Marie
            'Jan's infatuation with Marie'

Finally, as illustrated in example (446), triadic deadjectival nouns do not require the presence of all three arguments, which is a property inherited from the input adjective. Again, the Ref-argument is normally required.

(446) a. Jans boosheid op Marie over die opmerking
           Jan's crossness on Marie about that remark
     b. Jans boosheid op Marie
     c. Jans boosheid over die opmerking
     d. Jans boosheid

II. Occurrence of PP in postcopular predicative position

Example (447) shows that the Ref-argument of a deadjectival noun cannot occur in postcopular position. This is not surprising, as *van*-PPs in postcopular position are interpreted as possessive elements, and properties, the denotation of deadjectival nouns, cannot be possessed.

(447) a. *De verlegenheid is van Jan.
            the shyness   is of Jan
     b. *De gehoorzaamheid is van Peter.
            the obedience   is of Peter
     c. De boosheid is van Jan.
          the crossness is of Jan

For completeness' sake, the examples in (448) show that it is equally impossible to place the second or third argument of dyadic and triadic constructions in postcopular position.

(448) a. *Jans/De   ingenomenheid is met het voorstel.
            Jan's/the satisfaction   is with the proposal
     b. *Jans/De boosheid is over de opmerking.
            Jan's/the crossness is about the remark
     c. *Jans/De boosheid is op Marie
            Jan's/the crossness is on Marie

III. R-pronominalization

The examples in (449a-c) again show that Ref-arguments behave like complements: they allow R-pronominalization. Note that example (449d) shows that the result is much worse with adjectives that take a [+HUMAN] complement: *de boosheid van Jan* 'Jan's crossness', which is of course due to the fact that R-pronominalization is always marked when the PP contains a [+HUMAN] noun phrase.

(449) a. de hoogte ervan   b. de bekendheid   ervan
          the height there-of   the known-ness   there-of
          'its height'   'its fame'
     c. de stabiliteit ervan   d. *de boosheid ervan
          the stability   there-of   the crossness   there-of
          'its stability'   'his crossness'

     Example (450) shows that R-pronominalization is also possible with the second argument of the corresponding dyadic adjective.

(450) a.   Jans   tevredenheid erover
             Jan's satisfaction   there-about
             'Jan's satisfaction with it'
      b.   [?]Maries nieuwsgierigheid ernaar
             Marie's curiosity   there-to
             'Marie's curiosity to know it'

The examples in (451a&b) show that the same thing holds for the second and third argument of triadic constructions, although there are additional restrictions. Example (451a) shows that R-pronominalization of the *over*-PP leads to a perfect result provided that the *op*-PP is left implicit. Similarly, example (451b) shows that R-pronominalization of the *op*-PP is significantly better when the *over*-PP is not expressed. The fact that the result is still marked without the presence of a second complement is due to the fact that this argument is typically interpreted as [+HUMAN], and as such does not readily allow R-pronominalization; if, however, the argument can be interpreted as referring to some institution (like the government), the example becomes more or less acceptable. Example (451c), finally, shows that pronominalization of both complements at the same time is entirely impossible.

(451) a.   Jans   boosheid daarover   (^{??}op Marie)
             Jan's crossness there-about   on Marie
             'Jan's crossness about it'
      b.   Jans   boosheid daarop   ^{??}(*over die beslissing)
             Jan's crossness there-on   about that decision
             'Jan crossness with it'
      c. *Jans boosheid daarop   daarover
             Jan's crossness there-on there-about

The results in (451) are not surprising given that we find the same pattern in the corresponding adjectival construction in (452). We have used the strong form *daar* + *P* instead of the weak form er + *P* since this makes it easer to use the unsplit pattern in the adjectival construction; the judgments do not change when we use the weak form.

(452) a.   Jan is boos daarover (^{*?}op Marie)
      b.   Jan is boos daarop [?](*over die beslissing)
      c. *Jan is boos daarop daarover

IV. Extraction of PP

The PP-extraction test yields results that are far from unequivocal, although on the whole the results can be characterized as rather bad. In what follows, we will consider the possibility of topicalization, relativization and questioning, and PP-over-V and scrambling.

A. Topicalization

Examples (453a&b) show that extraction of the Ref-argument *van*-PP in monadic constructions seems to yield results that range from marked to fully acceptable.

However, we cannot rule out the possibility that we are actually dealing with an independent restrictive adverbial phrase; in both cases the *van*-PP seems to require some emphasis, which suggests that we are dealing with cases of contrastive or restrictive focus; cf. Section 2.2.1.5, sub IIA. That something like this is indeed the case is especially clear for example (453a), where the *van*-PP can also be used when the Ref-argument is expressed by means of a possessive pronoun; this unambiguously shows that the *van*-PP is not extracted from the noun phrase. We cannot show this in the same way for example (453b) given that using a possessive pronoun is not a favored option with [-ANIMATE] entities; however, the acceptability of example (453b′) clearly shows that we cannot dismiss the possibility that the *van*-PP in (453b) functions as a restrictive adverbial phrase.

(453) a. ??Van die jongen begrijp   ik de verlegenheid niet.
            of that boy   understand I   the shyness   not
      a′. Van die jongen begrijp   ik zijn_Ref verlegenheid niet.
            of that boy   understand I   his shyness   not
      b.   Van deze toren moeten we de hoogte nog meten.
            of this tower   must   we the height still measure
      b′. Van deze kerk moeten we de hoogte van de toren nog meten.
            of this church must   we the height of the tower still measure

The same can be observed with extraction of the Ref-argument of the dyadic constructions, which yield more or less acceptable results when they are given some emphasis. Again, adding the Ref-argument as a possessive pronoun improves the results considerably.

(454) a. ??Van die jongen begrijp   ik de verliefdheid op Marie niet.
            of that boy   understand I   the infatuation on Marie not
            'That boy's infatuation with Marie I do not understand.'
      a′. Van die jongen begrijp   ik zijn_Ref verliefdheid op Marie niet.
            of that boy   understand I   his infatuation   on Marie not
      b.   ??Van Marie begrijp   ik de nieuwsgierigheid naar de uitslag wel.
            of Marie   understand I   the curiosity   to the results   PRT
            'Marie's curiosity to know the results I can quite understand.'
      b′. Van Marie begrijp   ik haar nieuwsgierigheid naar de uitslag wel.
            of Marie   understand I   her curiosity   to the results   PRT
      c.   *?Van Peter verbaasde ons de ingenomenheid met het voorstel.
            of Peter   surprised   us   the satisfaction   with the proposal
            'Peter's satisfaction with the proposal surprised us.'
      c′. Van Peter verbaasde ons zijn ingenomenheid met het voorstel.
            of Peter   surprised   us   his satisfaction   with the proposal

The fact that adding the Ref-argument in the form of a *van*-PP improves the result suggests that the markedness of the primeless examples should not be attributed to extraction, but to the fact that the Ref-argument is left implicit. This suggests that extraction of the Ref-argument from the noun phrase is impossible. The examples in (455) clearly show that extraction of the PP-complements of dyadic constructions is impossible.

(455) a. *Op Marie begrijp ik Jans verliefdheid niet.
      on Marie understand I Jan's infatuation not

    b. *Naar de uitslag begrijp ik Maries nieuwsgierigheid wel.
       to the results understand I Marie's curiosity PRT

    c. *Met dit voorstel verbaasde ons Peters ingenomenheid.
       with this proposal surprised us Peter's satisfaction

For completeness' sake the examples in (456) show that the we find essentially the same facts in the case of a triadic deadjectival noun like *boosheid*. The (a)-examples show that having a preposed *van*-PP gives the best result when the Ref-argument is expressed as a possessive pronoun; the examples in (456b&c) show that extraction of the PP-complement is completely impossible.

(456) a. ??Van Jan begrijp ik de boosheid (op Marie) (over die opmerking) wel.
       of Jan understand I the crossness on Marie about that remark PRT

    a′. Van Jan begrijp ik zijn boosheid (op Marie) (over die opmerking) wel.
       of Jan understand I his crossness on Marie about that remark PRT

    b. *Op Marie begrijp ik Jans boosheid (over die opmerking) wel.
       on Marie understand I Jan's crossness about that remark PRT

    c. *Over die opmerking begrijp ik Jans boosheid (op Marie) wel.
       about that remark understand I Jan's crossness on Marie PRT

B. Relativization and questioning

At first sight, relativization and questioning of *van*-PPs corresponding to the Ref-argument of the base adjective seem to yield more or less acceptable results. The discussion on topicalization above shows, however, that we must be careful in concluding that the preposed *van*-PP is an argument of the noun: we might also be dealing with independent adverbial phrases. Note that adding the Ref-argument as a possessive pronoun does not improve the result in (457a&a′).

(457) a. de jongen waarvan ?de/*?zijn_Ref verlegenheid zo opvalt
      the boy where-of the/his shyness so strikes
      'the boy whose shyness is so striking'

    a′. ?Van welke jongen valt ?de/*?zijn_Ref verlegenheid het meest op?
       of which boy strikes the/his shyness the most prt.
       'Of which boy is the shyness most striking?'

    b. de toren waarvan de hoogte nog gemeten moet worden
      the tower where-of the height still measured must be
      'the building whose height must still be measured'

    b′. Van welke toren moet de hoogte nog gemeten worden?
      of which tower must the height still measured be
      'Of which building must the height still be measured?'

Relativization and questioning of arguments headed by prepositions other than *van* are not acceptable, as is shown by (458); the (b)-examples may perhaps slightly improve the result when the PP *op Marie* is dropped, but still remain quite awkward in that case.

(458) a. *de jongen op wie ik de verliefdheid van Marie niet begrijp
        the boy on who I the infatuation of Marie not understand
    a′. *Op welke jongen begrijp jij de verliefdheid van Marie niet?
         on which boy understand you the infatuation of Marie not
    b. *de opmerking waarover ik Jans boosheid (op Marie) wel begrijp
         the remark where-about I Jan's crossness on Marie PRT understand
    b′. *Over welke opmerking begrijp jij Jans boosheid (op Marie) wel?
         about which remark understand you Jan's crossness on Marie PRT
    c. *de vrouw waarop ik Jans boosheid (over die opmerking) wel begrijp
         the woman where-on I Jan's crossness about that remark PRT understand
    c′. *Op wie begrijp jij Jans boosheid (over die opmerking) wel?
         on who understand you Jan's crossness about that remark PRT

C. PP-over-V and scrambling

As with INF- and ING-nominalizations, PP-over-V leads to unacceptable results. The unacceptability of the examples in (459) shows that this holds both for the Ref-argument expressed by a *van*-PP and for the second (or third) argument of the deadjectival noun.

(459) • Test 4C: PP-over-V
    a. *?Ik heb de beleefdheid altijd zeer gewaardeerd van die jongen.
       I have the politeness always very appreciated of that boy
    b. *?Ik heb de hoogte nooit geweten van dat gebouw.
       I have the height never known of that building
    c. *Ik heb Jans verliefdheid nooit begrepen op Marie.
       I have Jan's infatuation never understood on Marie
    d. *Ik heb Peters boosheid nooit begrepen over die opmerking.
       I have Peter's crossness never understood about that remark

The acceptability of examples (460a&b) suggests that scrambling of the *van*-PP corresponding with the Ref-argument of the base adjective is possible, but, again, we may also be dealing with a construction with an independent adverbial phrase; this is especially clear for example (460a) given that expressing the Ref-argument as a possessive pronoun is allowed. The examples in (460c&d) show that scrambling of PPs headed by prepositions other than *van* is clearly excluded.

(460) • Test 4D: Scrambling
    a. ?Ik heb van die jongen de beleefdheid altijd zeer gewaardeerd.
       I have of that boy the politeness always very appreciated
    a′. ?Ik heb van die jongen zijn$_{Ref}$ beleefdheid altijd zeer gewaardeerd.
         I have of that boy his politeness always very appreciated
    b. Ik heb van dat gebouw de hoogte nooit geweten.
       I have of that building the height never known
    c. *Ik heb op Marie Jans verliefdheid nooit begrepen.
       I have on Marie Jan's infatuation never understood
    d. *Ik heb over die opmerking Peters boosheid nooit begrepen.
       I have about that remark Peter's crossness never understood

V. Conclusion

Table 12 summarizes the results of the four tests for inherited arguments of deadjectival nouns. The third and fifth columns indicate whether the results provide evidence for or against the assumption that we are dealing with complements. The first three tests provide unequivocal evidence for complement status both of the *van*-PPs and theme-PPs headed by other prepositions. It seems that there is a marked difference in extraction behavior between *van*-PPs and PPs headed by other prepositions with respect to the possibility of extraction: the conclusion that inherited *van*-themes function as complement may be supported by the extraction facts, but for PP-themes headed by other prepositions the results are negative. We have seen, however, that the PP-extraction test is problematic in various respects, and may actually not be a good test for establishing complement status of the PP, and that there are in fact good reasons to assume that the alleged cases of extraction should be analyzed as involving an independent restrictive adverbial phrase. For the moment we therefore conclude that both types of theme-PP function as arguments of the derived noun.

Table 12: Complements of deadjectival nouns: outcome of Tests 1-4

	VAN-PPs		OTHER PPs:	
Test 1: PP obligatory	+	positive	+	positive
Test 2: Post-copular position	—	positive	n.a.	n.a.
Test 3: R-pronominalization	+	positive	+	positive
Test 4A: Topicalization	depends on analysis	?	—	negative
Test 4B: Relativization/questioning	depends on analysis		—	
Test 4C: PP-over-V	—		—	
Test 4D: Scrambling	depends on analysis		—	

2.2.5. Picture and story nouns

This section discusses two special categories of nouns, the so-called picture and story nouns. The examples in (461) show that these nouns can be either deverbal or non-derived.

(461) • Picture and story nouns
  a. Deverbal: *schilderij* 'painting' from *schilderen* 'to paint'; *afbeelding* 'picture' from *afbeelden* 'to picture'; *vertelling* 'narrative' from *vertellen* 'to narrate'
  b. Non-derived: *foto* 'photo'; *poster* 'poster'; *boek* 'book'; *verhaal* 'story'

Picture and story nouns take complements, just like the relational and derived nouns discussed in Sections 2.2.2-2.2.4, but differ from these in various semantic and syntactic respects, which will be discussed in Sections 2.2.5.1 to 2.2.5.3: we will start by discussing the form and position of the arguments of these nouns, then we will address the question of whether these arguments must be overtly realized, and, finally, we will attempt to arrive at a provisional definition of the classes of picture and story nouns. This will provide us with sufficient background information for the more detailed discussion of complementation of picture and story nouns in Sections

2.2.5.4 to 2.2.5.6. In order to simplify the discussion, we will sometimes discuss the two types of noun in separate sections despite the fact that they behave similarly in many respects and that this will go at the expense of some redundancy.

2.2.5.1. Form and position of the arguments

Generally speaking, we may say that picture and story nouns take two arguments. The external argument may be characterized as the agent (creator) and is typically expressed by means of a postnominal *van*-PP or a prenominal genitive noun phrase/possessive pronoun. The second argument can be characterized as the theme (subject matter) and is typically expressed by a postnominal PP: with picture nouns, this PP is introduced by *van* 'of' and with story nouns by *over* 'about'. In addition, these nouns can be combined with a possessor in the form of a postnominal *van*-PP or a prenominal genitive noun phrase/possessive pronoun.

(462)   • The projection of picture and story nouns
     a.   Agent: *van*-PP or genitive NP/possessive pronoun
     b.   Theme: *van*-PP (picture nouns) or *over*-PP (story nouns)
     c.   Possessor: *van*-PP or genitive NP/possessive pronoun

Given that *van*-PPs can play various roles, it will be clear that many of the examples in the discussion below are ambiguous: for sake of simplicity, we will generally ignore this and focus on the reading that is relevant for the discussion at hand.

I. Picture nouns

The semantic feature that picture nouns have in common is that they depict or represent an object and that their denotation is the result of some creative or productive process, as in the case of *afbeelding* 'picture', *schilderij* 'painting', *foto* 'photo', or *beeld* 'statue'. Syntactically, these nouns differ from other dyadic nouns in that they can take *two* postnominal *van*-PPs: one referring to the object depicted (henceforth: the theme) and one referring to the creator of this object (henceforth: the agent). In (463a), for example, the PP *van Rembrandt* 'by/of Rembrandt' refers to the agent and the PP *van zijn zoon Titus* 'of his son Titus' refers to the theme. This example also shows that the agent cannot be expressed by means of a *door*-PP, which is remarkable, since both in the verbal and in the nominal domain the *door*-phrase is a typical way of expressing agentivity; this is shown by examples (463b-d) for the deverbal nominalizations.

(463) a.   het schilderij van zijn zoon Titus$_{Th}$ van/$^{*?}$door Rembrandt$_{Ag}$ [picture noun]
        the painting   of his son   of/by Rembrandt
        'the painting of his son Titus by Rembrandt'
     b.   de vernietiging van de stad$_{Th}$ door/*van Caesar$_{Ag}$ [ING-noun]
        the destruction   of the city   by/of Caesar
     c.   het schilderen van zijn zoon Titus$_{Th}$ door/*van Rembrandt$_{Ag}$ [INF-noun]
        the paint   of his son Titus   by/of Rembrandt
        'Rembrandt's painting (of) his son Titus'
     d.   het geschilder van zijn zoon Titus$_{Th}$ $^?$door/*van Rembrandt$_{Ag}$ [GE-noun]
        the painting   of his son Titus   by/of Rembrandt

The examples in (464) show that picture nouns and deverbal nominalizations are similar in that they may both express the agent by means of a prenominal genitive noun phrase or a possessive pronoun (although this gives rise to a slightly marked result in the case of INF-nominalizations).

(464) a. Rembrandts/zijn$_{Ag}$ schilderij van zijn zoon Titus$_{Th}$ [picture noun]
            Rembrandt's/his   painting   of his son Titus

      b. Caesars/zijn$_{Ag}$ vernietiging   van de stad$_{Th}$ [ING-noun]
            Caesar's/his   destruction   of the city

      c. $^{?}$Rembrandts/zijn$_{Ag}$ (herhaaldelijk) schilderen van zijn zoon Titus$_{Th}$ [INF-noun]
            Rembrandt's/his repeatedly   painting   of his son Titus
            'Rembrandt's/his (repeatedly) painting (of) his son Titus'

      d. Rembrandts/zijn$_{Ag}$ geschilder van zijn zoon Titus$_{Th}$ [GE-noun]
            Rembrandt's/his   painting   of his son Titus

II. Story nouns

Story nouns refer to concrete objects that are the result of a creative process but which, unlike picture nouns, have abstract content. Both these aspects of story nouns can be modified, which can sometimes lead to ambiguity: in (465a) the modifying adjective *dik* 'thick, bulky' can apply only to the concrete object, in (465b) the modifier *interessant* 'interesting' will normally be taken to apply to some aspect of the contents, and in (465c) *mooi* 'beautiful' can apply either to the physical object or to its contents.

(465) a. een dik   boek
            a   thick book
            'a bulky book'

      b. een interessant boek over de middeleeuwen$_{Theme}$
            an   interesting book about the Middle Ages

      c. een mooi   boek over liefde
            a   beautiful book about love

Complements of story nouns, on the other hand, cannot be related to the physical properties of the object in question. As in the case of picture nouns, they refer to the agent or the theme: the examples in (466) show that the former takes the form of a *van*-PP or a genitive noun phrase/possessive pronoun, and the latter that of an *over*-PP. Ambiguity may arise, due to the possibility of assigning the semantic roles of agent and possessor to the *van*-PP or the prenominal phrase.

(466) a. een boek van Jan$_{Agent/Poss}$ over de middeleeuwen$_{Theme}$
            a book   of Jan   about the Middle Ages

      b. Jans/zijn$_{Agent/Poss}$ boek over de middeleeuwen$_{Theme}$
            Jans/his   book about the Middle Ages

The examples in (467) show that, just like with picture nouns, the agent of story nouns cannot be expressed by means of a postnominal *door*-PP.

(467) a. een boek van/*door Huizinga_{Agent} over de middeleeuwen_{Theme}
       a book of/by Huizinga   about the Middle Ages
       'a book by Huizinga about the Middle Ages'
    b. de film van/*door Oliver Stone_{Agent} over Nixon_{Theme}
       the film of/by Oliver Stone   about Nixon
       'the film by Oliver Stone about Nixon'

The claim that the agent of story nouns cannot be expressed by means of a *door*-PP seems to be contradicted by the primeless examples in (468), where it seems that the use of *door*-PPs is also acceptable. It is plausible, however, that in these cases we are actually not dealing with story nouns (= nouns denoting the concrete result of a creative action) but with nominalizations (= nouns denoting the action denoted by the base verb). This suggestion is supported by the primed examples, where the context forces a concrete reading of the nouns phrase, and the *door*-phrase cannot be used.

(468) a. Ik heb naar de toespraak van/door Jan over zinloos geweld geluisterd.
       I have to the speech   of/by Jan   about pointless violence listened
       'I've listened to Jan's speech on pointless violence.'
    a′. Ik heb de toespraak van/^{*?}door Jan over zinloos geweld verscheurd.
       I have the speech of/by Jan   about pointless violence torn.up
       'I've torn up Jan's speech on pointless violence.'
    b. Ik heb geluisterd naar een lezing van/door Jan over zinloos geweld.
       I have listened to a lecture   of/by Jan   about pointless violence
       'I've listened to a lecture by Jan on pointless violence.'
    b′. Ik heb een lezing van/^{*?}door Jan over zinloos geweld verbrand.
       I have a lecture of/by Jan   about pointless violence burnt
       'I've burnt a lecture by Jan on pointless violence.'

Story nouns differ from picture nouns in that the theme is not expressed by a *van*-PP, but by a PP headed by the preposition *over* 'about'. The question can be raised whether *over* is a functional preposition (comparable to functional *van*) introduced to express the semantic relation between the head noun and its argument, or whether it is inherited from the verb underlying the story noun, as could be the case in the primed examples in (469).

(469) a. De koningin sprak het volk toe over zinloos geweld.
       the queen   spoke the people prt. about pointless violence
       'The queen addressed the people on the subject of pointless violence.'
    a′. De koningin hield een toespraak over zinloos geweld.
       the queen   held an address   about pointless violence
       'The queen delivered an address about pointless violence.'
    b. De meester vertelde de klas over ridders en draken.
       the teacher told the class   about knights and dragons
    b′. De meester beloofde de klas een vertelling over ridders en draken.
       the teacher promised the class a story   about knights and dragons

This is an important question since the distinction between story nouns and ING-nominalizations depends on its answer. If the preposition is inherited from the input

verb, there is no reason to distinguish a separate class of story nouns: constructions like *toespraak over* 'speech about' and *vertelling over* 'story about' in (469) would then simply pattern with ING-nominalizations like *jacht op* 'hunt for'; cf. Section 2.2.3.3.

(470) a.   De prins   jaagde op groot wild.
           the prince hunted on big game
           'The prince hunted big game.'
      b.   De prins   opende de jacht op groot wild.
           the prince opened the hunt on big game
           'The prince opened the hunt for big game.'

An obvious problem for assuming that the theme PP of the story noun is inherited from a base verb is that it cannot account for the use of the *over*-PP in examples like (471), where the story noun is not derived from a verb, but where the relation between the head noun and the theme argument is nevertheless identical to that in example (469). This suggests that the PP is not an inherited argument.

(471) a.   Ik heb   een boek over taalkunde   gelezen.
           I   have a book   about linguistics read
           'I've read a book about linguistics.'
      b.   Hij heeft een film over Nixon   gemaakt.
           he   has   a film   about Nixon made
           'He has made a film about Nixon.'

It has been suggested, though, that the inheritance approach can be saved by assuming that the *over*-PP in (471) functions as a complement of the verb, rather than as a complement of the noun. This would mean that the primeless examples in (472) do not have the structures shown in the primed examples, but those in the doubly-primed examples (cf. Bach & Horn 1976, Kooij & Wiers 1977, 1978, 1979; Klein & Van der Toorn 1979; and De Haan 1979).

(472) a.   Jan heeft een boek over taalkunde   geschreven.
           Jan has   a book   about linguistics written
           'Jan is writing a book about linguistics.'
      a′. Jan heeft [NP een boek [PP over taalkunde]] geschreven.
      a″. Jan heeft [NP een boek] [PP over taalkunde] geschreven.
      b.   Peter heeft   een artikel over voorzetsels   gepubliceerd.
           Peter has   an article about prepositions   published
           'Peter has published an article about prepositions.'
      b′. Peter heeft [NP een artikel [PP over voorzetsels]] gepubliceerd.
      b″. Peter heeft [NP een artikel] [PP over voorzetsels] gepubliceerd.
      c.   De meester vertelde een verhaal over ridders en draken.
           the teacher told   a story   about knights and dragons
      c′. De meester vertelde [NP een verhaal [PP over ridders en draken]].
      c″. De meester vertelde [NP een verhaal] [PP over ridders en draken].

The structures in the doubly-primed examples are certainly tenable, given that the noun phrases are actually optional; besides the (a)-examples in (472), it is also

possible to have the examples in (473), where the *over*-PPs clearly function as a complement of the verb.

(473) a.　Jan heeft over taalkunde geschreven.
　　　b.　Peter heeft over voorzetsels gepubliceerd.
　　　c.　De meester vertelde over ridders en draken.

This does not imply, however, that the structures in the singly-primed examples are excluded. That these structures are possible as well is clear from the fact that the PP can be pied piped under topicalization (°constituency test), provided that the indefinite noun phrase is assigned contrastive accent. Furthermore, the examples become fully acceptable under a more neutral intonation pattern when the indefinite article is replaced by a definite one or a demonstrative pronoun.

(474) a.　Een boek over taalkunde heeft Jan geschreven.
　　　b.　Een artikel over voorzetsels heeft Peter gepubliceerd.
　　　c.　Een verhaal over ridders en draken vertelde de meester.

The examples in (475) further show that the two structures may also correspond to a difference in interpretation. If the PP is taken to be a complement of the verb, as in (475b), the ordinal numeral *eerste* 'first' has °scope over *boek* 'book' only, and the sentence in (475a) expresses that Jan's first book was about linguistics. However, if the PP is taken to be a complement of the noun, as in (475b), the ordinal numeral *eerste* has scope over the constituent *boek over taalkunde* 'book about linguistics', and the sentence consequently expresses that Jan has just finished his first book on linguistics, which need not be the first book he has written; in fact, it will generally be concluded for pragmatic reasons that the book is in fact not the first book that Jan has written.

(475) a.　Jan heeft zijn eerste boek over taalkunde　　geschreven.
　　　　　Jan has　　his first book　　about linguistics　written
　　　　　'Jan has written his first book about linguistics.'
　　　b.　Jan heeft [NP zijn eerste boek] [PP over taalkunde] geschreven.
　　　b′.　Jan heeft [NP zijn eerste boek [PP over taalkunde]] geschreven.

Finally, only a limited number of verbs allow an analysis with the *over*-PP as a complement of the verb. The sentences in example (476), for instance, do not involve any structural or interpretational ambiguity due to the fact that the verbs *kopen* 'to buy' and *zien* 'to see' cannot take a PP-complement headed by *over*, which is clear from the fact that the noun phrase headed by the story noun cannot be dropped. As a result, the *over*-PPs can only be interpreted as complements within the noun phrase.

(476) a.　Jan heeft *(een boek) over taalkunde　　gekocht.
　　　　　Jan has　　a book　　about linguistics　bought
　　　　　'Jan has bought a book about linguistics.'
　　　a′.　Jan heeft [NP een boek [PP over taalkunde]] gekocht

b. We hebben *(een film) over Nixon gezien.
    we have   a film   about Nixon seen
    'We have seen a film about linguistics.'
b′. We hebben [NP een film [PP over Nixon]] gezien.

On the basis of these facts we conclude that there is evidence for a separate class of story nouns, which take a theme complement in the form of a postnominal *over*-PP. In some constructions there may, however, be ambiguity as to whether the *over*-PP functions as a complement of the noun or as a complement of the verb. This question is discussed in more detail in Section 2.2.5.5.2, where the function of the *over*-PP is discussed for a number of different verbs.

2.2.5.2. Implicit arguments

The arguments of picture and story nouns can generally be left unexpressed. This does not imply, however, that they are not syntactically present. We will give some evidence that in many cases at least the agent argument must be assumed syntactically active even if it has no phonetic realization.

2.2.5.2.1. Picture nouns

An important difference between picture nouns and dyadic ING-nominalizations like *vernietiging* 'destruction' is that the former do not denote states of affairs, but concrete entities; even when a noun phrase is headed by a deverbal picture noun like *schilderij* 'painting' in (477a), it cannot refer to the action denoted by the verb but only to the result of this action, that is, the concrete object that has been created. We may therefore say that deverbal picture nouns are lexicalized in the same sense as lexical deverbal nouns like *bestrating* 'pavement', *verzameling* 'collection' or *uitvinding* 'invention'. This also accounts for the fact that picture nouns can be used quite felicitously without any complements in most cases: since they do not share the denotation of the base verb, they do not inherit the verb's argument structure either. Thus, a picture noun like *schilderij* 'painting' in (477a) does not require the presence of a complement, despite the fact that its verbal counterpart *schilderen* 'to paint' normally does; in this sense, it behaves like the non-relational noun *fiets* 'bicycle' in (477b) rather than the ING-noun *vernietiging* 'destruction' in (477c).

(477) a. Ik heb gisteren een schilderij gekocht.
          I   have yesterday a painting   bought
          'I bought a painting yesterday.'
      b. Ik heb gisteren een fiets gekocht.
          I   have yesterday a bike   bought
          'I bought a bike yesterday.'
      c. *Ik heb gisteren een vernietiging gezien.
          I   have yesterday a destruction   seen
          'I saw a destruction yesterday.'

Example (478) shows, however, that leaving out the theme argument does not always yield a fully acceptable result, which suggests that picture nouns may differ with regard to their degree of lexicalization: given that *afbeelding* 'picture' is only

felicitous when the theme is expressed, it can be said to have inherited the argument structure of the verb *afbeelden* 'to depict'; since *tekening* 'drawing' does not require the presence of a theme, it can be said to be fully lexicalized.

(478)   Ik heb   een tekening/$^{??}$afbeelding aan de muur gehangen.
        I   have a drawing/picture   on the wall   hung
        'I've put a picture on the wall.'

Note, however, that other, more pragmatic factors may come into play. For example when we are dealing with an object of art, as in (479), felicitous use of the noun *tekening* 'drawing' does seem to require the presence of the agent or a theme. This suggests that we are actually not dealing with inherited arguments, but with contextually evoked adjuncts. This may account for the fact that, e.g., adding the name of a style period would also make (479) perfectly natural, and that the preferred addition differs with the expertise or interest of the participants in the conversation: the layman will probably want to know what the drawing represents, whereas someone knowledgeable about art will be interested in the periodization or the maker.

(479) $^?$Ik heb   op de kunstveiling een tekening gekocht.
        I   have on the art auction   a drawing   bought
        'I've bought a drawing at the art auction.'

Although the arguments of a picture noun need not be overtly expressed, they may be implicitly present. This is very clear with unexpressed agent arguments, which may influence the form of referentially dependent theme arguments. In order to see this, first consider the examples in (480). If the theme of a picture noun is bound by (= coreferential with) the agent of the picture noun, as in (480a), it must have the form of a reflexive pronoun like *zichzelf* 'himself', whereas it will normally surface as a personal pronoun if it is bound by a constituent outside the noun phrase, as in (480b). Note that coreferentiality is expressed by mean of subscripts.

(480) a. Ik zag zijn$_i$ foto   van zichzelf$_i$/*'m$_i$.
          I   saw his picture of   himself/him
          'I saw his picture of himself.'
      b. Jan$_i$ zag mijn foto   van 'm$_i$/*zichzelf$_i$.
          Jan saw my picture of him/himself
          'Jan saw my picture of him.'

The standard explanation of the examples in (480) is roughly that whereas anaphors must be bound within the smallest category containing a potential antecedent, pronouns cannot be bound within that domain; see Section 5.2.1.5, sub III, for a more extensive discussion of this version of °Binding Theory. Since the possessive pronoun is a potential antecedent, the relevant binding domain is the noun phrase: the anaphor must and the pronoun cannot be bound within this domain. Now consider example (481a), which shows that the binding behavior of the pronoun remains unaffected when the agent of the noun phrase is not expressed; it can take the subject of the clause as its antecedent, just as in (480b). When we assume that the structure is as given in (481b), the clause will be the smallest category

containing a potential antecedent: it therefore functions as the binding domain within which the pronoun must be free (= not bound), and we wrongly predict (481a) to be impossible. This has led to the assumption that the noun phrase contains a phonetically empty pronoun °PRO, as indicated in (481b′): as a result, the noun phrase functions as the binding domain of the pronoun and (481a) is correctly predicted to be possible; cf. Chomsky (1986).

(481) a.   Jan$_i$ zag een foto van 'm$_i$.
         Jan saw a picture of him
         'Jan saw a picture of himself.'
     b.   *Jan$_i$ zag [$_{NP}$ een foto van 'm$_i$].
     b′. Jan$_i$ zag [$_{NP}$ een PRO$_j$ foto van 'm$_i$].

Note that (481a) cannot be interpreted with the PRO agent being construed as coreferential with *Jan*, that is, with *Jan* as the maker of the picture, since in that case the pronoun would again be incorrectly bound within its binding domain by the agent of the picture noun: *Jani zag [NP een PROi foto van 'mi].* The proposal also accounts for the fact that (482a) is ungrammatical under the intended idiomatic reading "making a picture", due to the fact that the verb *nemen* forces a reading in which the implied PRO argument is coreferential with the subject of the clause, as in (482b).

(482) a.   *Jan$_i$ nam een foto van 'm$_i$.
         Jan took a picture of him
         'Jan took a picture of himself.'
     b.   *Jan$_i$ nam [$_{NP}$ een PRO$_i$ foto van 'm$_i$].

The claim that the agent of the picture noun can be syntactically realized by the phonetically empty pronoun °PRO is consistent with the acceptability of example (483a), in which the anaphor *zichzelf* is coreferential with the subject of the clause: the structure in (483b) shows that the anaphor is bound by the implicit PRO agent, which in turn is bound by the subject of the clause.

(483) a.   Jan$_i$ nam een foto van zichzelf$_i$.
         Jan took a picture of himself
         'Jan took a picture of himself.'
     b.   Jan$_i$ nam [$_{NP}$ een PRO$_i$ foto van zichzelf$_i$].

There is, however, a complication here concerning the interpretation of example (484a). First assume that the implicit PRO agent is obligatory: since the anaphor *zichzelf* must be bound by PRO, and since *zichzelf* is coreferential with the subject of the clause, it would follow that PRO would also be bound by the subject of the clause. This gives rise to structure in (484b) which must be interpreted such that Jan saw a picture of his own making depicting himself. Although this is certainly a possible interpretation, the sentence can also be interpreted such that the picture was made by someone else. We cannot assume, however, that the PRO agent refers to someone else: the structure in (484b′) is ungrammatical given that the anaphor is not bound within its binding domain. The intended interpretation can therefore only be accounted for if we assume that the PRO agent is optional: the anaphor in

(484b″) has no potential binder within the noun phrase, so that it can take as its antecedent the subject of the clause, which is now the smallest category containing a potential antecedent. Given that there is no PRO-agent, there is no implication concerning the identity of the photographer.

(484) a.   Jan$_i$ zag een foto van zichzelf$_i$.
             Jan saw a picture of himself
             'Jan saw a picture of himself.'
       b.   Jan$_i$ zag [$_{NP}$ een PRO$_i$ foto van zichzelf$_i$].
       b′. *Jan$_i$ zag [$_{NP}$ een PRO$_j$ foto van zichzelf$_i$].
       b″. Jan$_i$ zag [$_{NP}$ een foto van zichzelf$_i$].

    It may be interesting to note that the reflexive form *'mzelf* can also be used. The examples in (485) show that, like *zichzelf*, this reflexive form must have an antecedent, but it seems to differ from *zichzelf* in that it cannot be bound by an antecedent within the noun phrase. Some care is needed, however, since the binding behavior of *'mzelf* has not been discussed much in the literature; the most extensive discussion can be found in Koster (1987: 344 ff.), and even this discussion is no longer than two pages. Furthermore, Koster claims there that *'mzelf* can be bound by the agent in ING-nominalizations like *Jans$_i$ beschrijving van 'mzelf$_i$* 'Jan's description of himself', so it might be the case that some people have more liberal judgments concerning (485b). However, since the informants we have consulted agree that the examples in (485) contrast in the way indicated, we will adopt the judgments given there as an idealization of the data, but more research is certainly needed.

(485) a.   *Ik bekeek   mijn foto   van zichzelf/'mzelf.
             I   looked.at my picture of   himself
       b.   Ik bekeek   Jans$_i$ foto   van zichzelf$_i$/*'mzelf$_i$.
             I   looked.at Jan's picture of   himself
       c.   Jan$_i$ bekeek   mijn foto   van 'mzelf$_i$/*zichzelf$_i$.
             I   looked.at my picture of   himself

The fact that *'mzelf* cannot have an antecedent within the noun phrase immediately accounts for the contrast in (486): example (486a) contains an (optional) PRO agent which is disjoint in reference from the subject of the clause and *'mzelf* can therefore be correctly bound by an antecedent external to the noun phrase; the noun phrase in the idiomatic example in (486b) obligatorily contains a PRO agent that is coreferential with the subject of the clause, so that *'mzelf* is incorrectly bound within the noun phrase.

(486) a.   Jan$_i$ zag een foto van 'mzelf$_i$.
             Jan saw a picture of him/himself
             'Jan saw a picture of him/himself.'
       a′. Jan$_i$ zag [$_{NP}$ een PRO$_j$ foto van 'mzelf$_i$].
       b.   #Jan$_i$ nam   een foto van 'mzelf$_i$.
             Jan took a picture of himself
       b′. *Jan$_i$ nam [$_{NP}$ een PRO$_i$ foto van 'mzelf$_i$].

For completeness' sake, note that examples (484a) and (486a) allow an alternative reading in which the reflexive form refers not to the theme but to the agent of the picture noun. This reading is excluded with pronouns, which follows immediately from the standard Binding Theory given that the noun phrase does not contain a PRO agent (this function being performed by the pronoun itself); the clause therefore constitutes the binding domain within which the pronoun must be free. In (487) coreference is indicated by italics.

(487) a.　*Jan* zag [$_{NP}$　een foto　van *zichzelf*$_{Agent}$/*'mzelf*$_{Agent}$]
　　　　　Jan saw　　a picture　of himself
　　　　　'Jan saw a picture by himself.'
　　　b.　**Jan* zag [$_{NP}$　een foto　van *hem*$_{Agent}$]
　　　　　Jan saw　　a picture　of himself
　　　　　'Jan saw a picture by himself.'

If the line of reasoning above is correct, we may conclude from the binding facts discussed above that in many cases in which the agent of the picture noun is not visible, it can nevertheless be syntactically present as a phonetically empty PRO argument. This empty PRO agent is normally not obligatory, however.

2.2.5.2.2. Story nouns

In some cases complements of deverbal story nouns cannot felicitously be left out, whereas in other cases explicit mention of the complements does not seem to be required (although they will generally be implied). The two cases are related to the interpretation of the noun. Example (488) shows that explicit mention of at least one of the complements is preferred when the noun phrase has abstract reference, that is, refers to the contents of some object.

(488) a.　Jan heeft　naar een voordracht　$^?$(van Mulisch$_{Agent}$)　geluisterd.
　　　　　Jan has　to a lecture　　　　　　　of Mulisch　　　listened
　　　　　'Jan has listened to a lecture by Mulisch'
　　　a'.　Jan heeft　naar een voordracht　$^?$(over Mulisch$_{Theme}$)　geluisterd.
　　　　　Jan has　to a lecture　　　　　　about Mulisch　　listened
　　　　　'Jan has listened to a lecture (on Mulisch).'
　　　b.　Jan heeft　een opstel　$^{??}$(van een medestudent$_{Agent}$)　bestudeerd.
　　　　　Jan has　an essay　　　of a fellow student　　　　studied
　　　　　'Jan has read an essay by a fellow-student.'
　　　b'.　Jan heeft　een opstel　$^{??}$(over Mulisch$_{Theme}$)　bestudeerd.
　　　　　Jan has　an essay　　about Mulisch　　studied
　　　　　'Jan has studied an essay on Mulisch.'

However, when the referent is a concrete object, as in (489), neither argument needs to be expressed. This suggests that the concrete interpretation in (489) involves a higher level of lexicalization: the examples in (488) are nominalizations, and only in (489) are we dealing with true story nouns. Recall that the discussion of the examples in (468) already led to a similar conclusion.

(489) a. Ik heb een opstel (van een medestudent_{Agent}) ingeleverd.
        I have an essay   of a fellow student   handed.in
        'I have handed in an essay (by a fellow-student).'
    b. Ik heb een voordracht (over Mulisch_{Theme}) uitgetypt.
        I have a lecture   about/of Mulisch typed.out
        'I have typed out a lecture (on Mulisch).'

Note that the implied agent in the nominalizations in the primed examples of (488) is necessarily disjoint in reference with the subject: the orator/writer cannot be Jan. These examples differ in this respect from those in (490), which also have abstract reference, where the agent is necessarily coreferential with the subject.

(490) a. Ik heb een voordracht (over Mulisch) gehouden.
        I have a lecture   about Mulisch kept
        'I have given a lecture (on Mulisch).'
    b. Ik heb een opstel (over Mulisch) geschreven.
        I have an essay   about Mulisch written
        'I have written an essay (on Mulisch).'

The fact that the theme can readily be left out in (490) can perhaps be accounted for by claiming that the agent is syntactically expressed by means of a phonetically empty pronoun PRO, given that the examples in (488) have already shown that we don't have to express both arguments; expression of either the theme or the agent is sufficient. Postulating a PRO agent for the nominalizations in (490) raises the question, however, why it is not readily possible to leave the theme argument unexpressed in the primed examples of (488); it suggests that PRO need not be present in this case, which may be independently supported by our discussion of the binding data in (493) and (494) below.

The examples in (491) show that when the story noun is not derived from a verb, the complements need not be expressed: both the agent and the theme can readily be left out, even if it is the contents of the story noun that are relevant. This means that, like the picture nouns, story nouns behave like non-relational nouns like *fiets* 'bicycle' rather than the ING-nominalization *vernietiging* 'destruction'.

(491) a. Ik heb gisteren   een boek (van Mulisch_{Agent}) gelezen.
        I have yesterday a book   of Mulisch   read
        'I bought a book by Mulisch yesterday.'
    a′. Ik heb gisteren   een boek (over Mulisch_{Theme}) gelezen.
        I have yesterday a book   about Mulisch   read
        'I bought a book about Mulisch yesterday.'
    b. Ik heb gisteren   een film (van Hitchcock_{Agent}) gezien.
        I have yesterday a film   of Hitchcock   seen
        'I saw a Hitchcock film yesterday.'
    b′. Ik heb gisteren   een film (over Nixon_{Theme}) gezien.
        I have yesterday a film   about Nixon   seen
        'I saw a film about Nixon yesterday.'

However, as in the case of picture nouns, unexpressed agent arguments can be implicitly present, which is shown by the fact that they may influence the form of a

referentially dependent theme argument. In order to see this, first consider the examples in (492), which again show that an anaphor must be bound within the smallest domain that contains a potential antecedent, whereas pronouns must be free within that domain.

(492) a.   Ik las   zijn$_i$ verhaal over zichzelf$_i$/*'m$_i$.
         I   read his story   about himself/him
         'I read his story about himself.'
     b.   Jan$_i$ las   mijn verhaal over 'm$_i$/*zichzelf$_i$.
         Jan read my story   about him/himself
         'Jan read my story about him.'

The fact that the pronoun in (493a) can be used in order to refer to the subject of the clause gives rise to the idea that the agent of the story noun is realized as a phonetically empty PRO argument. The fact that this PRO argument cannot be interpreted as coreferential with the subject of the clause without invoking a violation of the binding condition on the pronoun correctly predicts that the story was written by someone else. It also follows that examples like (493b), where the verb forces a reading according to which PRO is interpreted as coreferential with the subject of the clause, are ungrammatical. The account of the examples in (493) is therefore completely parallel to that of (481) and (482).

(493) a.   Jan$_i$ las   een verhaal over 'm$_i$.
         Jan read a story   about him
         'Jan read a story about him/himself.'
     a'.   Jan$_i$ las [$_{NP}$ een PRO$_{j/*i}$ verhaal over 'm$_i$].
     b.   *Jan$_i$ schreef een verhaal over 'm$_i$.
         Jan wrote   a story   about him
         'Jan wrote a story about himself.'
     b'.   *Jan$_i$ schreef [$_{NP}$ een PRO$_i$ verhaal over 'm$_i$].

The examples in (494) show that the anaphor can also be construed as coreferential with the subject of the clause. These examples can be accounted for along the lines of those in (483) and (484): the fact that (494a) is acceptable is consistent with the idea that the noun phrase contains a PRO agent, which is coreferential with the subject of the clause; the fact that (494b) is acceptable despite the fact that the agent of the story noun is not coreferential with the subject in the clause shows that the PRO agent of the story noun need not be syntactically present.

(494) a.   Jan$_i$ schreef een verhaal over zichzelf$_i$.
         Jan wrote   a story   about himself
         'Jan wrote a story about himself.'
     a'.   Jan$_i$ schreef [$_{NP}$ een PRO$_i$ verhaal over zichzelf$_i$].
     b.   Jan$_i$ las   een verhaal over zichzelf$_i$.
         Jan read a story   about himself
         'Jan read a story about him/himself.'
     b'.   Jan$_i$ las [$_{NP}$ een verhaal over zichzelf$_i$].

Use of the reflexive form *'mzelf* is unproblematic in constructions with the verb *lezen* 'read' in (495a): this is as predicted given that *'mzelf* can be bound by the subject of the clause, while remaining free within its noun phrase. Our discussion so far predicts that (495b) should be excluded given that it is bound by the PRO agent within its noun phrase; the fact that this example seems marginally possible may therefore be unexpected. More research on the status of examples like these is needed, however, before we can draw any serious conclusions.

(495) a. Jan$_i$ las [$_{NP}$ een PRO$_j$ verhaal over 'mzelf$_i$].
            Jan read   a   story   about himself
            'Jan saw a picture by him/himself.'
      b. $^?$Jan$_i$ schreef [$_{NP}$ een PRO$_i$ verhaal over 'mzelf$_i$].
            Jan wrote   a   story   about himself

As in the case of the picture nouns, the most important conclusion for our present purpose that can be drawn from the binding facts discussed above is that in many cases in which the agent of the picture noun is not visible it can nevertheless be syntactically present as a (normally optional) PRO argument.

2.2.5.3. Defining the category

This section attempts to give a provisional definition of the picture and story nouns, which refers to the nature of the denotation of the noun and the realization of its arguments. If these definitions are near the mark, we must conclude that some nouns that at first sight seem to belong to the class of picture or story nouns actually do not belong to this category.

I. Picture nouns

The discussion in the two preceding sections suggested that the category of picture nouns has two defining properties: (i) picture nouns denote a concrete object that is the result of a creative process and that depicts or represents some other object; (ii) both the agent and the theme can be expressed in the form of a *van*-PP. If this is indeed correct, this means that not all depicting nouns are picture nouns even if they do have both a creator and an object depicted. An example of such a noun is *plaatje* 'picture'. The examples in (496) show that construal of the PP *van Rembrandt* or the genitive noun phrase *Rembrandts* as an agent gives rise to a highly questionable result; each can only be interpreted as a possessor or, when the PP *van de Westertoren* is left out in (496a), as a theme.

(496) a. $^{*?}$In het boek stond een plaatje (van de Westertoren$_{Theme}$) van Rembrandt$_{Agent}$.
            in the book stood   a picture   of the Westertoren   of Rembrandt
            'The book gave a picture (of the Westertoren) by Rembrandt .'
      b. $^{*?}$Rembrandts$_{Agent}$ plaatje   van de Westertoren$_{Theme}$
            Rembrandt's   picture   of the Westertoren

Something similar seems to hold for nouns like *poster* 'poster' or *affiche* 'poster', although the facts are less clear in this case: the examples in (497) show that simultaneously expressing the agent and the theme give rise to a degraded result;

however, when the theme is left out, the agent reading of the *van*-PP/genitive noun phrase is readily available.

(497) a. $^{*?}$Er   hing een poster van Jane Avril$_{Theme}$ ($^{*?}$van Toulouse-Lautrec$_{Agent}$).
       there hung a poster   of Jane Avril   of Toulouse-Lautrec
       'Hanging on the wall was a poster of Jane Avril (by Toulouse-Lautrec).'
    a′. Er   hing een poster van Toulouse-Lautrec$_{Agent}$.
         there hung a poster   of Toulouse-Lautrec
    b.   Toulouse-Lautrecs$_{Agent}$ poster ($^{??}$van Jane Avril$_{Theme}$)
       Toulouse-Lautrec's   poster   of Jane Avril

The examples in (496) and (497) differ markedly from those in (498), in which simultaneously expressing the agent and theme is acceptable. We may therefore conclude from the definition given above that, whereas *foto* can be considered a picture noun, *plaatje* and *poster* resemble relational nouns; see also Section 2.2.2.

(498) a.   Aan de muur hing een foto van de Westertoren$_{Theme}$ van Jacob Olie$_{Agent}$.
       on the wall   hung a photo of the Westertoren   of Jacob Olie
       'On the wall hung a photo of the Westertoren by Jacob Olie.'
    b.   Jacob Olies$_{Agent}$ foto   van de Westertoren$_{Theme}$ hing aan de muur.
       Jacob Olie's   photo   of the Westertoren   hung on the wall

II. Story nouns

The discussion in the two preceding sections suggests that the category of story nouns has two defining properties: (i) they denote an object that is the result of a creative process with abstract content; (ii) the agent can be expressed in the form of a *van*-PP, whereas the theme takes the form of an *over*-PP. If this is indeed correct, this means that not all nouns denoting created objects with abstract content are story nouns, even if they do have both a creator and a subject matter. This will become clear by comparing the examples in (499). Example (499a) shows that the noun *film* 'movie' exhibits the two defining properties of story nouns: it refers to an object with abstract content, and the agent and theme can be expressed by means of, respectively, a *van*- and an *over*-PP. In this respect, the noun *film* differs sharply from the noun *verfilming* 'film version': example (499b) shows that the theme argument of the latter noun cannot appear in the form of an *over*-PP, and that the agent argument cannot take the form of a *van*-PP. In addition, (499b′) shows that mention of the agent is not sufficient for felicitous reference: it is rather the theme argument that is obligatory (unless the theme is implied or the construction can be given a generic interpretation). On the basis of the definition given above, the conclusion must therefore be that the noun *verfilming* is not a story noun but a deverbal state-of-affairs noun; see Section 2.2.3.3 on ING-nominalizations.

(499) a.   een film van Theo van Gogh$_{Agent}$ over de zelfkant van de maatschappij$_{Theme}$
       a film   of Theo van Gogh   about the fringe of the society
       'a film by Theo van Gogh about the fringe of society'
    b.   een verfilming van/*over de roman *Karakter* door/*van Mike van Diem
       a film version   of/about the novel *Karakter*   by/of Mike van Diem
    b′. $^{*?}$een verfilming door Mike van Diem
       a film version   by/of Mike van Diem

III. A note on conversion

The fact that theme arguments of story nouns are introduced by the preposition *over*, whereas the theme arguments of picture nouns take the form of a *van*-PP, can sometimes lead to a reinterpretation of the head noun. Example (500), for example, is not a counterexample to the general rule that the theme of a picture noun is expressed by a *van*-PP, but forces a story noun reading of the picture noun *schilderij* 'painting'; the noun phrase does not refer to an entity that only depicts a certain theme, but to an entity that, in doing so, tells a story.

(500)   Picasso's beroemde schilderij over de Spaanse burgeroorlog
           Picasso's famous   painting about the Spanish Civil War

2.2.5.4. The distribution of the arguments of the noun

This section discusses more extensively complementation of the picture and story nouns. We will not only discuss the form and distribution of the agent and the theme, but also include constructions containing a possessor.

2.2.5.4.1. Picture nouns

This section discusses in more detail the syntactic behavior of the complements of picture nouns like *schilderij* 'painting' and *tekening* 'drawing'. These nouns typically take two arguments, denoting the creator and the object depicted, which syntactically behave as the agent and the theme: they can appear either as postnominal *van*-PPs or prenominally as genitive noun phrases. Moreover, both can appear postnominally as *van*-PPs in one and the same construction (unlike with the nominalizations discussed in Section 2.2.3). A complicating factor is that one and the same constituent can be interpreted either as the agent or as the possessor of the created objects. Finally, although both agent and theme are generally implied, they need not always be expressed. This leads to a number of possible combinations, some of which are ambiguous.

I. Picture nouns with one argument expressed

When only one argument is expressed, this argument may appear either prenominally as a genitive noun phrase/possessive pronoun or postnominally as a *van*-PP. In the former case, the argument will normally be interpreted as the agent or the possessor of the object referred to; the paintings referred to in example (501a) are either painted by Rembrandt or possessed by him. With certain nouns, however, the genitive noun phrase/possessive pronoun can also be interpreted as the theme: the default reading of example (501b) seems to be that in which Peter is the person depicted, although he could also be the painter or the possessor of the painting.

(501) a. Rembrandts/Zijn$_{\text{Agent/Poss}}$ schilderijen zijn veel geld   waard.
           Rembrandt's   paintings   are   much money worth
           'Rembrandt's paintings are worth a lot of money.'
      b. Peters/Zijn$_{\text{Theme/Agent/Poss}}$ portret hangt   aan de muur.
           Peter's/his   portrait hangs   on the wall

If the noun is only accompanied by a *van*-PP, the construction is normally three ways ambiguous. Thus, the PP *van Rembrandt* in example (502a) can have the semantic role of agent, theme or possessor. Just like the genitive noun phrase in (501b), the PP *van Peter* in example (502b) is preferably construed as a theme.

(502) a.   een schilderij   van Rembrandt$_{Agent/Theme/Poss}$
        a painting   of Rembrandt
        'a painting by Rembrandt/of Rembrandt('s)'
    b.   een portret   van Peter$_{Agent/Theme/Poss}$
        a portrait   of Peter
        'a portrait of Peter'

II. Picture nouns with two arguments expressed

As soon as a picture noun selects two arguments, part of the ambiguity arising in constructions with only one complement is solved: when the *van*-PP is interpreted as the theme, as in the (a)-examples of (503), the prenominal noun phrase can refer either to the agent or the possessor; when the *van*-PP is interpreted as the agent, as in (503b), the prenominal genitive noun phrase can only be the possessor. Observe that, out of context, the choice between agent and possessor will depend on the person(s) referred to and their relation to the medium involved: Rembrandt will normally be interpreted as the painter in (503a), whereas in (503a′) Jan is probably the possessor (unless he is known to be a lithographer).

(503) a.   Rembrandts$_{Agent/Poss}$ schilderij van zijn zoon Titus$_{Theme}$
        Rembrandt's   painting   of his son Titus
    a′. Jans$_{Agent/Poss}$ poster   van Marilyn Monroe$_{Theme}$
        Jan's   poster   of Marilyn Monroe
    b.   Peters$_{Poss/*Theme}$ portret   van Rembrandt$_{Agent}$
        Peter's   painting of Rembrandt
        'Peter's painting by Rembrandt'

It has been claimed that in those cases where both arguments are expressed postnominally, the outermost *van*-PP is to be interpreted as the possessor or agent, with the theme always closest to the noun (De Wit 1997: 29/131). The examples in (504) show, however, that the two PPs can actually occur in either order.

(504) a.   een tekening van de Westertoren$_{Theme}$ van Rembrandt$_{Agent/Poss}$
        a drawing   of the Westertoren   of Rembrandt
        'Rembrandt's drawing of the Westertoren'
    b.   een tekening van Rembrandt$_{Agent/Poss}$ van de Westertoren$_{Theme}$

Which order actually appears may depend on linguistic as well as extra-linguistic factors, and there are circumstances where the preferred order is actually the one in which the agent precedes the theme. This may be the case when the theme is relatively long or where ambiguity may arise as to the role of the *van*-PP. It is for both reasons that example (505b) is preferred to (505a): the theme-PP is long, and when the PP *van Rembrandt* follows the theme, it could be interpreted either as the agent argument of the noun *schilderij*, or as a possessive *van*-phrase modifying the noun phrase headed by the noun *wei* 'meadow' (or, perhaps, *koeien* 'cows').

(505) a.   [?]een schilderij   van een paar koeien in een wei van Rembrandt
          a painting   of a couple cows in a meadow of Rembrandt
          'a painting of some cows in a meadow by Rembrandt'
     b.   een schilderij van Rembrandt van een paar koeien in een wei

III. Picture nouns with three arguments expressed

When the agent, theme and possessor are simultaneously expressed, the best result is obtained when the possessor appears prenominally as a genitive noun phrase or possessive pronoun while the theme and the agent are realized postnominally as *van*-PPs.

(506) a.   Jans $_{Poss}$ schilderij van de Westertoren$_{Theme}$ van Rembrandt$_{Agent}$
          my   painting of the Westertoren   of Rembrandt
          'my painting of the Westertoren by Rembrandt'
     b.   hun$_{Poss}$ beeld   van Rembrandt$_{Theme}$ van een bekend kunstenaar$_{Agent}$
          their   statue of Rembrandt   of a famous artist
          'their statue of Rembrandt by a famous artist'

In (506), the prenominal phrase is always the possessor. The two postnominal *van*-PPs can occur in either order. Which of the two orders is preferred may depend on linguistic as well as extra-linguistic factors. Consider in this respect the examples in (507). The (a)-examples are equally acceptable: the agent and theme argument may occur in either order. The (b)-examples are also both acceptable, although due to the length of the theme-PPs, the order in (507b′) seems to be preferred. The examples in (507) show again that there is no reason to assume that in neutral circumstances the theme should be closer to the head than the agent.

(507) a.   mijn broers$_{Poss}$ schilderij van de Westertoren$_{Theme}$ van Rembrandt$_{Agent}$
          my brother's   painting of the Westertoren   of Rembrandt
          'my brother's painting of the Westertoren by Rembrandt'
     a′.   mijn broers schilderij van Rembrandt van de Westertoren
     b.   [?]hun$_{Poss}$ beeld   van een nog zeer jonge Rembrandt$_{Theme}$ van Louis Royer$_{Agent}$
          their   statue of a still very young Rembrandt   of Louis Royer
          'their statue of a still very young Rembrandt by Louis Royer'
     b′.   hun beeld van Louis Royer van een nog zeer jonge Rembrandt

It is possible to realize all three arguments as postnominal *van*-PPs, although in most cases the result will be awkward as well as confusing, as such constructions are almost inevitably (and often multiply) ambiguous. It seems that the acceptability of the construction correlates with the degree of definiteness. Example (508a) with the indefinite article *een* 'a' is pretty awkward, which may be due to the fact that the addition of the three PPs makes it rather implausible that the denotation of the modified noun is a non-singleton set: the example implies that there is yet another painting of the Westertoren that is painted by Rembrandt and owned by my brother. Example (508b) is marked compared to the (a)-examples in (507) but acceptable. Example (508c) is fully acceptable, although it has a somewhat special meaning: the determiner *dat* does not have a demonstrative meaning but is used to introduce

some entity into the discourse that is presented as familiar to the hearer; see 5.2.3.2.2, sub II, for discussion.

(508) a. $^{??}$een schilderij van de Westertoren$_{Theme}$ van Rembrandt$_{Agent}$ van mijn broer$_{Poss}$
        a painting   of the Westertoren   of Rembrandt   of my brother
        'a painting of the Westertoren by Rembrandt owned by my brother'
    b. $^{?}$het schilderij van de Westertoren$_{Theme}$ van Rembrandt$_{Agent}$ van mijn broer$_{Poss}$
    c. dat schilderij van de Westertoren$_{Theme}$ van Rembrandt$_{Agent}$ van mijn broer$_{Poss}$

As mentioned above, the use of more than one *van*-PP can lead to all kinds of ambiguities. In (508), for example, the PP *van Rembrandt* could in principle also be construed as the possessor of the *Westertoren*: it is only our knowledge of the world that prevents this interpretation. But this might also go in the other direction: although (488) can be interpreted such that we are dealing with a painting by Rembrandt of an apprentice, our knowledge of the world will rather force a reading according to which the painting was made by a pupil of Rembrandt, that is, a reading in which *van Rembrandt* modifies *leerling*.

(509)   dat schilderij van een leerling   van Rembrandt van mijn broer$_{Poss}$
         that painting of a pupil   of Rembrandt   of my brother
         'that painting by a pupil of Rembrandt owned by my brother.'

Another confusing example is given in (510a). Although it is clear that Vermeer is the painter of the painting, it is not the case that it functions as the agent of the picture noun *schilderij*. This is due to the fact that the painting is known as "Het melkmeisje van Vermeer" and therefore we are dealing with a single postnominal constituent that functions as the theme of the picture noun *schilderij* 'painting'. This explains why the order in (510a′) is unacceptable. If the PP *van het melkmeisje van Vermeer* indeed functions as the theme of the noun, we may expect that it is possible to add another agent, such as a forger. This expectation is indeed borne out.

(510) a. Jans schilderij van het melkmeisje van Vermeer
        Jan's painting of the dairy girl   of Vermeer
        'Jan's painting of the dairy girl by Vermeer'
    a′. $^{??}$Jans schilderij van Vermeer$_{Agent}$ van het melkmeisje$_{Theme}$
    b. een schilderij [van het melkmeisje van Vermeer]$_{Th}$ van een meestervervalser$_{Ag}$
        a painting   of the dairy.girl of Vermeer   of a master-counterfeiter
        'a painting of the dairy girl of Vermeer by a counterfeiter'
    b′. een schilderij [van een meestervervalser] [van het melkmeisje van Vermeer]

2.2.5.4.2. Story nouns

This section discusses in more detail the syntactic behavior of the complements of story nouns like *boek* 'book' and *toespraak* 'speech'. These nouns typically take two arguments, denoting the creator and the object depicted, which syntactically behave as the agent and the theme: they can appear either as postnominal PPs or prenominally as genitive noun phrases. A complicating factor is the fact that one and the same constituent can sometimes be interpreted either as the agent or as the possessor of the created objects. Finally, although both agent and theme are

generally implied, they need not always be expressed. This leads to a number of possible combinations, some of which are ambiguous.

I. Story nouns with one argument expressed

Basic story nouns like *boek* 'book' and *film* 'film' can felicitously be used without arguments, regardless of whether the noun phrase it heads refers to the physical object or to the abstract content of the object. As with picture nouns, the agent argument in (511) could also be interpreted as the possessor of the object referred to by the noun phrase. The saliency of this ambiguity seems to depend on the interpretation of the story noun in question: it is more likely to arise in (511a), where the noun phrase refers to the physical object, than in (511b), where it is the abstract content that is relevant.

(511) a.   Jan las   een dik boek (van Chomsky$_{\text{Agent}}$) (over taalkunde$_{\text{Theme}}$)
         Jan read a thick book of Chomsky   about linguistics
         'I have read a thick book by Chomsky on linguistics.'
    b.   Jan las   een boeiend boek (van Chomsky$_{\text{Agent}}$) (over taalkunde$_{\text{Theme}}$)
         Jan read a riveting book   of Chomsky   about linguistics
         'I have read a riveting book by Chomsky on linguistics.'

    Noun phrases headed by deverbal story nouns like *toespraak* 'speech' or *lezing* 'lecture' usually refer to abstract contents and require the presence of at least one argument, which can be either the agent or the theme. Thus, whereas in (511) the basic noun *boek* 'book' can be used without a complement, example (512a) would be considered odd without the presence of a complement; however, as soon as the agent is mentioned, all sentences are acceptable.

(512) a.   Ik heb   naar een lezing $^{??}$(over taalkunde$_{\text{Theme}}$) geluisterd.
         I   have to a lecture   about linguistics   listened
         'I have listened to a lecture (on linguistics).'
    b.   Ik heb   naar een lezing van Chomsky$_{\text{Agent}}$ geluisterd.
         I   have to a lecture   of Chomsky   listened
         'I have listened to a lecture by Chomsky.'
    b′. Ik heb   naar Chomsky's$_{\text{Agent}}$ lezing geluisterd.
         I   have to Chomsky's   lecture listened
         'I have listened to Chomsky's lecture.'

The (b)-examples in (512) show that the agent can be expressed either as a postnominal *van*-PP or as a prenominal genitive noun phrase (or possessive pronoun). Although story and picture nouns behave alike in this respect, they crucially differ with respect to the form of the postnominal theme PP: Whereas this argument appears as a *van*-PP with picture nouns, with story nouns it always takes the form of a PP introduced by *over*. As a result of this the ambiguity between an agent and a theme reading that frequently arises with picture nouns will never occur with story nouns.

(513) a. de lezing over/*van Chomsky_{Theme}   [story noun]
          the lecture about/of   Chomsky
          'the lecture about Chomsky'
    b. het schilderij van Rembrandt_{Theme/Agent}   [picture noun]
          the painting   of Rembrandt
          'the painting of/by Rembrandt'

II. Story nouns with two arguments expressed

When a story noun is accompanied by two arguments, the agent may appear either postnominally as a *van*-PP or prenominally as a genitive noun phrase. In either case, the theme argument takes the form of a postnominal *over*-PP. In postnominal position, the order of the agent and the theme is relatively fixed: whereas the order agent-theme in (514a&b) is perfectly acceptable, the reversed order in (514a′&b′) is highly marked (on the intended, non-appositive reading).

(514) a. Ik heb   een boek van Chomsky_{Agent} over taalkunde_{Theme} vertaald.
          I   have a book   of Chomsky   about linguistics   translated
          'I have translated a book by Chomsky about linguistics.'
    a′. ^{??}Ik heb een boek over taalkunde_{Theme} van Chomsky_{Agent} vertaald.
    a″. Ik heb   Chomsky's_{Agent} boeken over taalkunde_{Theme} vertaald.
          I   have Chomsky's   books   about linguistics   translated
    b. Ik ben   naar een/de film   van Spielberg_{Agent} over slavenhandel_{Theme} geweest.
          I have to a/the film   of Spielberg   about slave trade   been
          'I have been to a film by Steven Spielberg about slave trade.'
    b′. ^{??}Ik ben naar een/de film over slavenhandel_{Theme} van Spielberg_{Agent} geweest.
    b″. Ik ben   naar Spielberg's_{Agent} film over slavenhandel_{Theme} geweest.
          I   have to Spielberg's   film about slave trade   been

The genitive noun phrase and the postnominal *van*-PP are again ambiguous between an agentive and a possessive reading. Whether the resulting ambiguity is salient depends on the interpretation of the story noun in question: given that the contexts in (514) favor an abstract reading of the story nouns, the most prominent reading is the one with Chomsky/Spielberg as the agent. Out of context, however, examples like (515a) do exhibit this ambiguity. When we restrict ourselves to the possessive reading it can be observed that the preferred realization is that as a genitive noun phrase or a possessive pronoun: the (b)-examples of (515) show that realization of the possessor as a postnominal *van*-PP is normally degraded and only occurs in a natural way with determiners like *die* 'those' with the somewhat special function of introducing some entity into the discourse that is presented as familiar to the hearer; see 5.2.3.2.2, sub II, for discussion.

(515) a. Jans/zijn_{Poss} boeken over taalkunde
          Jan's/his   books   about linguistics
    b. de boeken <^{??}van Jan_{Poss}> over taalkunde <van Jan_{Poss}>
          the books   of Jan   about linguistics
    b′. die boeken <van Jan_{Poss}> over taalkunde <[?]van Jan_{Poss}>
          those books   of Jan   about linguistics

The examples in (516) show that the agent argument can also be simultaneously expressed with a possessor: the possessor will normally be expressed by means of a genitive noun phrase or a possessive pronoun, while expressing the agent in this way will give rise to a severely degraded result. Expressing both the agent and the possessor as postnominal *van*-PPs, as in the (b)-examples, is only possible with determiners like *die* under the somewhat special interpretation discussed above. It seems that placing the possessor adjacent to the noun is preferred in neutral contexts.

(516) a. Jans/onze$_{Poss}$ boeken van Chomsky$_{Agent}$
       Jan's/our   books   of Chomsky
   a′. *?Chomsky's$_{Agent}$ boeken van Jan/ons$_{Poss}$
       Chomsky's   books   of Jan/us
   b. *?de boeken van Jan$_{Poss}$ van Chomsky$_{Agent}$
       the books   of Jan   of Chomsky
   b′. die boeken <van Jan$_{Poss}$> van Chomsky$_{Agent}$ <?van Jan$_{Poss}$>
       those books of Jan   of Chomsky

III. Story nouns with three arguments expressed

Given that the agent cannot be expressed by a genitive noun phrase or possessive pronoun when a possessor is present and the agent preferably precedes the theme, there are only a restricted number of ways in which we can simultaneously express the agent, theme and possessor. Example (517a) gives the order that arises with a prenominal possessor: inverting the two postnominal PPs gives rise to a highly marked result and more or less forces an appositive reading of the PP *van Chomsky*.

(517) a. Jans$_{Poss}$ boeken van Chomsky$_{Agent}$ over taalkunde$_{Theme}$
       Jan's   books   of Chomsky   about linguistics
   b. *?Jans$_{Poss}$ boeken over taalkunde$_{Theme}$ van Chomsky$_{Agent}$

When all three arguments occur postnominally, the result is normally degraded on all word orders; example (518a) is perhaps marginally acceptable, but seems to require that the possessor be interpreted as an apposition. When the determiner is *die* 'those', (518b) seems acceptable in the given order on the somewhat special interpretation discussed in the previous subsection. Placing the possessive or agentive *van*-PP in rightmost position seems marginally possible, but only on an appositive reading.

(518) a. ??de boeken van Chomsky$_{Agent}$ over taalkunde$_{Theme}$ van Jan$_{Poss}$
       the books of Chomsky   about linguistics   of Jan
   b. die boeken van Jan$_{Poss}$ van Chomsky$_{Agent}$ over taalkunde$_{Theme}$
       those books of Jan   of Chomsky   about linguistics

2.2.5.5. The status of the postnominal PPs

Before we can apply the adjunct/complement tests provided in Section 2.2.1 to determine whether the postnominal PPs are adjuncts or complements of the picture/story noun, we have to point out that it is often not immediately clear whether a certain postnominal PP is part of the noun phrase or positioned outside

the noun phrase where it functions as a complement of the verb or a restrictive adverbial phrase. Therefore, we will first consider the possible functions of these PPs in some more detail and suggest ways of distinguishing between these functions. The overall aim of this section is to find a way of establishing the status of the PPs in the various constructions, as complement of the noun or as an independent constituent (complement of the verb or restrictive adverbial phrase).

2.2.5.5.1. The postnominal van-PPs of picture nouns

Observations on PP-extraction from noun phrases headed by picture nouns are complicated by the fact that the acceptability of the resulting structures depends on the choice of the verb (Kooij & Wiers 1977/1978, Klein &Van der Toorn 1979, De Haan 1979, etc.). This is illustrated in (519) for the verbs *zien* 'to see' and *beschadigen* 'to damage' by means of topicalization; similar observations can be made with, e.g., relativization and questioning, but this will go unillustrated here. As shown in the primeless examples, both verbs are possible when the *van*-PPs follow the picture noun. When the PP is topicalized, as in the primed examples, a contrast arises between the two verbs: the result is highly questionable with the verb *beschadigen* 'to damage', but normally fine with the verb *zien* 'to see': an exception is (519c″), where the agentive *van*-PP apparently blocks topicalization of the theme.

(519) a. Ik heb een tekening van de Westertoren$_{\text{Theme}}$ gezien/beschadigd.
         I have a drawing of the Westertoren seen/damaged
         'I have seen/damaged a drawing of the Westertoren.'
      a′. Van de Westertoren$_{\text{Theme}}$ heb ik een tekening gezien/$^{*?}$beschadigd.
      b. Ik heb een tekening van Rembrandt$_{\text{Agent}}$ gezien/beschadigd.
         I have a drawing of Rembrandt seen/damaged
         'I have seen/damaged a drawing by Rembrandt.'
      b′. Van Rembrandt$_{\text{Agent}}$ heb ik een tekening gezien/$^{??}$beschadigd.
      c. Ik heb een tekening van de Westertoren$_{\text{Th}}$ van Rembrandt$_{\text{Ag}}$ gezien/beschadigd.
         I have a drawing of the Westertoren of Rembrandt seen/damaged
         'I have seen/damaged a drawing of the Westertoren by Rembrandt.'
      c′. Van Rembrandt heb ik een tekening van de Westertoren gezien/$^{??}$beschadigd.
      c″. Van de Westertoren heb ik een tekening van Rembrandt $^{??}$gezien/$^{*?}$beschadigd.

One way of accounting for these contrasts is to assume that with verbs like *zien* 'to see' the *van*-PPs need not form part of the noun phrase, but may function as an independent constituent, e.g., as a complement to the verb or as a restrictive adverbial phrase. This would mean that sentences containing such verbs may be given two different structures: one in which the PP is situated within, and one in which it is situated outside the noun phrase. Of course, this difference in structure should correspond not only to a difference in syntactic behavior, but also in interpretation.

     In order to find out whether such an approach is tenable, Subsection I will consider in detail constructions of picture nouns used in combination with three types of verbs: verbs of creation like *maken* 'to make', verbs of transfer like the ditransitive verb *kopen* 'to buy', and verbs such as *beschadigen* 'to damage' that denote activities that in one way or another affect their theme argument. We will

look at possible structural and interpretational ambiguities of constructions involving these verbs and suggest ways to disambiguate them. Subsection II will consider the behavior of verbs like *zien* 'to see' and *vervalsen* 'to forge' that seem to defy classification into any of the verb types distinguished so far.

I. Picture nouns with maken *'to make',* kopen *'to buy' and* beschadigen *'to damage'*

Picture nouns are often used in combination with verbs of creation such as *schilderen* 'to paint' or *maken* 'to make'. We will see that the *van*-PP in such constructions is ambiguous in the way indicated in (520b&b′): it can function either as a complement of the picture noun, as indicated by (520b), or as a restrictive adverbial phrase, as indicated by (520b′). We will also see that this difference in structure can be motivated by appealing to an interpretational difference; see Klein & Van der Toorn (1979).

(520) a. Ik heb   een tekening van Rembrandt$_{Theme}$ gemaakt.
          I   have a drawing   of Rembrandt   made
          'I have made a drawing of Rembrandt.'
      b. Ik heb [$_{NP}$ een tekening [$_{PP}$ van Rembrandt]$_{Theme}$] gemaakt.
      b′. Ik heb [$_{NP}$ een tekening] [$_{PP}$ van Rembrandt]$_{ADV}$ gemaakt.

By way of comparison, example (521) provides similar constructions with the ditransitive verb *kopen* 'to buy', which represents the second type of verb. Here, however, the ambiguity is of a different kind: the *van*-PP can be interpreted either as the agent or theme argument of the noun, as in (521b), or as a complement of the verb, as in (521b′).

(521) a. Ik heb   een tekening van Rembrandt$_{Agent/Theme/Source}$ gekocht.
          I   have a drawing   of Rembrandt   bought
          'I have bought a drawing by/of/from Rembrandt.'
      b. Ik heb [$_{NP}$ een tekening [$_{PP}$ van Rembrandt]$_{Agent/Theme}$] gekocht.
      b′. Ik heb [$_{NP}$ een tekening] [$_{PP}$ van Rembrandt]$_{Source}$ gekocht.

Example (522), finally, provides a construction with the affective verb *beschadigen* 'to damage', which, we will see, only allows the interpretation with the PP as complement of the noun: the structure in (522b′) does not occur.

(522) a. Ik heb   een tekening van Rembrandt$_{Agent/Theme}$ beschadigd.
          I   have a drawing   of Rembrandt   damaged
          'I have damaged a painting by/of Rembrandt.'
      b. Ik heb [$_{NP}$ een tekening [$_{PP}$ van Rembrandt]$_{Agent/Theme}$] beschadigd.
      b′. *Ik heb [$_{NP}$ een tekening] [$_{PP}$ van Rembrandt]$_{ADV}$ beschadigd.

In what follows, we will refer to *van*-PPs that are part of the noun phrase as dependent PPs, and *van*-PPs that are external to the noun phrase and function as an argument of the verb or as a restrictive adverbial phrase as independent PPs. The two types of independent PPs will be distinguished by means of the labels assigned to them.

A. Scope of the ordinal numeral eerste *'first'*

The distinction between dependent and independent *van*-PPs relates to a difference in interpretation, which can be made more conspicuous by adding the ordinal numeral *eerste* 'first'; cf. also (472) and (475) in Section 2.2.5.1. The examples in (523a&b) turn out to be ambiguous: when the *van*-PP is dependent on the picture noun, as in the primed examples, we are not dealing with the first drawings I ever made or bought, but merely with the first drawing of Rembrandt I made/bought; when the PP is independent of the noun, as in the doubly-primed examples, the drawings in question are the first ones I made or bought. The second reading is not available for (523c), which can only mean that it is the first picture made by or depicting Rembrandt that is damaged. From this, we can conclude that the *van*-PP cannot be used independently with verbs like *beschadigen*.

(523) a.   Ik heb   mijn eerste tekening van Rembrandt gemaakt.
        I   have my first drawing   of Rembrandt   made
        'I (have) made my first drawing of Rembrandt.'
   a'.   Ik heb [_{NP} mijn eerste tekening [_{PP} van Rembrandt]_{Theme}] gemaakt.
   a''.   Ik heb [_{NP} mijn eerste tekening] [_{PP} van Rembrandt]_{ADV} gemaakt.
   b.   Ik heb   mijn eerste tekening van Rembrandt gekocht.
        I   have my first drawing   by Rembrandt   bought
        'I (have) bought my first painting by/of/from Rembrandt.'
   b'.   Ik heb [_{NP} mijn eerste tekening [_{PP} van Rembrandt]_{Agent/Theme}] gekocht.
   b''.   Ik heb [_{NP} mijn eerste tekening] [_{PP} van Rembrandt]_{Source} gekocht.
   c.   Ik heb   mijn eerste tekening van Rembrandt beschadigd.
        I   have my first drawing   of Rembrandt   damaged
        'I (have) damaged my first painting by/of Rembrandt.'
   c'.   Ik heb [_{NP} mijn eerste tekening [_{PP} van Rembrandt]_{Agent/Theme}] beschadigd.
   c''.   *?Ik heb [_{NP} mijn eerste tekening] [_{PP} van Rembrandt]_{ADV} beschadigd.

B. Negation

Insertion of the negator *niet* 'not' can also be used to disambiguate these sentences, provided that we assume that it can only be placed between the noun and an independent *van*-PP, i.e., that it cannot occur internal to the noun phrase. This correctly predicts that (524a&b) will only be acceptable on the reading that the picture involved is the first I ever made/bought, whereas the construction in (524c) is unacceptable, as neither of the two possible structures is available.

(524) a.   Ik heb   mijn eerste tekening niet van Rembrandt gemaakt.
        I   have my first drawing   not of Rembrandt   made
        'I didn't make my first drawing of Rembrandt.'
   a'.   *Ik heb [_{NP} mijn eerste tekening niet van Rembrandt]_{Theme} gemaakt.
   a''.   Ik heb [_{NP} mijn eerste tekening] niet [_{PP} van Rembrandt]_{ADV} gemaakt.
   b.   Ik heb   mijn eerste tekening niet van Rembrandt gekocht.
        I   have my first drawing   not of Rembrandt   bought
        'I didn't buy my first drawing from Rembrandt.'
   b'.   *Ik heb [_{NP} mijn eerste tekening niet van Rembrandt]_{Agent/Theme} gekocht.
   b''.   Ik heb [_{NP} mijn eerste tekening] niet [_{PP} van Rembrandt]_{Source} gekocht.

    c.   *Ik heb   mijn eerste tekening niet van Rembrandt beschadigd.
          I   have my first drawing   not of Rembrandt damaged
    c′. *Ik heb [$_{NP}$ mijn eerste tekening niet van Rembrandt]$_{Agent/Theme}$ beschadigd.
    c″. *Ik heb [$_{NP}$ mijn eerste tekening] niet [$_{PP}$ van Rembrandt]$_{ADV}$ beschadigd.

C. Topicalization

Topicalization of the noun phrase can also be used to distinguish the two readings. Of course, since *van*-PP can be dependent on the noun with all verbs, it does not come as a surprise that it is always possible to topicalize the *van*-PP along with the noun phrase. Since in Dutch only a single constituent can be placed before the verb in sentence initial position (the °constituency test), the prediction is that only the structures in the singly-primed examples are acceptable. This predication is again borne out: the sentences in the primeless examples can only mean that in 1982 it was the first time I made/bought/damaged a painting of Rembrandt; the reading corresponding to the doubly-primed examples that this picture was the first I ever made/bought/damaged is not available.

(525) a.   Mijn eerste tekening van Rembrandt heb ik gemaakt in 1982.
          my first drawing   of Rembrandt have I   made   in 1982
          'My first drawing of Rembrandt I made in 1982.'
    a′. [$_{NP}$ Mijn eerste tekening [$_{PP}$ van Rembrandt]$_{Theme}$]$_i$ heb ik t_i gemaakt in 1982.
    a″. *[$_{NP}$ Mijn eerste tekening]$_i$ [$_{PP}$ van Rembrandt]$_{Adv-j}$ heb ik t_i t_j gemaakt in 1982.
    b.   Mijn eerste tekening van Rembrandt heb ik gekocht in 1982.
          my first drawing   of Rembrandt have I   bought in 1982
          'My first drawing by/of Rembrandt I bought in 1982.'
    b′. [$_{NP}$ Mijn eerste tekening [$_{PP}$ van Rembrandt]$_{Agent/Theme}$]$_i$ heb ik t_i gekocht in 1982.
    b″. *[$_{NP}$ Mijn eerste tekening]$_i$ [$_{PP}$ van Rembrandt]$_{Source-j}$ heb ik t_i t_j gekocht in 1982.
    c.   Mijn eerste tekening van Rembrandt heb ik beschadigd in 1982.
          my first drawing   of Rembrandt have I   damaged in 1982
          'My first drawing by/of Rembrandt I damaged in 1982.'
    c′. [$_{NP}$ Mijn eerste tekening [$_{PP}$ van Rembrandt]$_{Agent/Theme}$]$_i$ heb ik t_i beschadigd in 1982.
    c″. *[$_{NP}$ Mijn eerste tekening]$_i$ [$_{PP}$ van Rembrandt]$_{Adv-j}$ heb ik t_i t_j beschadigd in 1982.

    Next, let us consider the possibilities for topicalizing the picture noun only, leaving the PP in the original position. Here we would expect only the doubly-primed structures to yield acceptable results. The examples in (526) show that this prediction is also borne out: the examples in (526a&b) can only express that the drawing in question is the very first one I made or bought, which means that these sentences must be assigned the structures in (526a″&b″). The fact that (526c) does not allow this type of topicalization again shows that the PP cannot be used independently with the verb *beschadigen* 'to damage'.

(526) a.   Mijn eerste tekening heb ik van Rembrandt gemaakt.
          my first drawing   have I of Rembrandt made
          'My first drawing I made of Rembrandt.'
    a′. *[$_{NP}$ Mijn eerste tekening]$_i$ heb ik [$_{NP}$ t_i [$_{PP}$ van Rembrandt]$_{Theme}$] gemaakt.
    a″. [$_{NP}$ Mijn eerste tekening]$_i$ heb ik t_i [$_{PP}$ van Rembrandt]$_{ADV}$ gemaakt.

    b.   Mijn eerste tekening heb   ik   van Rembrandt gekocht.
          my first drawing   have I   of Rembrandt   bought
          'My first drawing I bought from Rembrandt.'
    b′. *[$_{NP}$ Mijn eerste tekening]$_i$ heb ik [$_{NP}$ t_i [$_{PP}$ van Rembrandt]] gekocht.
    b″. [$_{NP}$ Mijn eerste tekening]$_i$ heb ik t_i [$_{PP}$ van Rembrandt]$_{SOURCE}$ gekocht.
    c.   *Mijn eerste tekening heb   ik   van Rembrandt beschadigd.
          my first drawing   have I   of Rembrandt   damaged
    c′. *[$_{NP}$ Mijn eerste tekening] heb ik [$_{NP}$ t_i [$_{PP}$ van Rembrandt]] beschadigd.
    c″. *[$_{NP}$ Mijn eerste tekening] heb ik t_i [$_{PP}$ van Rembrandt]$_{ADV}$ beschadigd.

Finally, let us look at the possibilities for topicalizing the *van*-PP. Not surprisingly, it appears that only independent *van*-PPs can be topicalized. The relevant examples can be found in (527). The examples in (527a&b) indeed seem to have the interpretation associated with the independent use of the PP: example (527a) expresses that the very first drawing I ever made was one of Rembrandt, and example (527b) expresses that the drawing was bought from Rembrandt (source) and that it was indeed the first I ever bought. As expected by now, example (527c) is degraded: the reading associated with (527c′) is at best marginally acceptable in the (unlikely) context where I am planning to damage several of my drawings of/by Rembrandt.

(527) a.   Van Rembrandt   heb   ik mijn eerste tekening gemaakt.
           of Rembrandt   have I   my first drawing   made
           'Of Rembrandt I (have) made my first drawing.'
    a′. *[$_{PP}$ Van Rembrandt]$_{Theme-i}$ heb ik [$_{NP}$ mijn eerste tekening t_i] gemaakt.
    a″. [$_{PP}$ Van Rembrandt]$_{ADV-i}$ heb ik [$_{NP}$ mijn eerste tekening] t_i gemaakt.
    b.   Van Rembrandt$_{*Agent/*Theme/Source}$ heb   ik mijn eerste tekening gekocht.
           of Rembrandt   have I   my first drawing   bought
           'From Rembrandt I bought my first drawing.'
    b′. *[$_{PP}$ Van Rembrandt]$_i$ heb ik [$_{NP}$ mijn eerste tekening t_i] gekocht.
    b″. [$_{PP}$ Van Rembrandt]$_{SOURCE-i}$ heb ik [$_{NP}$ mijn eerste tekening] t_i gekocht.
    c. $^{??}$Van Rembrandt$_{Theme/Agent}$ heb   ik mijn eerste tekening beschadigd.
           of Rembrandt   have I   my first drawing   damaged
           'I have damaged my first drawing of Rembrandt.'
    c′. $^{??}$[$_{PP}$ Van Rembrandt]$_{Theme/Agent-i}$ heb ik [$_{NP}$ mijn eerste tekening t_i] beschadigd.
    c″. *[$_{PP}$ Van Rembrandt]$_{ADV-i}$ heb ik [$_{NP}$ mijn eerste tekening] t_i beschadigd.

It must be noted, however, that it is possible to force the reading associated with (527a′), according to which the drawing in question is not my very first, but the first I made of Rembrandt, by adding an adverb like *nu* 'now' or *inmiddels ook* 'by now also'. Clearly, this cannot be accounted for by assuming that only PPs functioning as independent constituents can be topicalized; we must therefore assume the same to be possible with complements of picture nouns.

(528) a.   Van Rembrandt heb   ik nu   mijn eerste tekening gemaakt.
           of Rembrandt   have I   now my first drawing   made
           'Of Rembrandt I (have) made my first drawing now.'
    b.   [$_{PP}$ Van Rembrandt]$_{Theme-i}$ heb ik nu [$_{NP}$ mijn eerste tekening t_i] gemaakt.
    b′. *[$_{PP}$ Van Rembrandt]$_{ADV-i}$ heb ik nu [$_{NP}$ mijn eerste tekening] t_i gemaakt.

II. Picture nouns with zien *'to see' and* vervalsen *'to forge'*

This section discusses constructions with the non-affective verbs *zien* 'to see' and *vervalsen* 'to forge' to see whether there are reasons to assume that these, too, can be combined with an independent *van*-PP. The answer will be negative; we will show that the structure in (529b′) is excluded.

(529) a.　Ik　heb　　een tekening　van Rembrandt　gezien/vervalst.
　　　　　I　 have　a drawing　　　of Rembrandt　seen/forged
　　　　　'I have seen/forged a drawing by/of Rembrandt.'
　　　b.　Ik heb [een tekening [van Rembrandt]_{Agent/Theme}] gezien/vervalst.
　　　b′.　*Ik heb [een tekening] [van Rembrandt] gezien/vervalst.

The first reason for this conclusion is that adding the ordinal numeral *eerste* does not create ambiguity. The most plausible interpretation of the examples in (530a), which are perhaps more easily interpretable with *vervalsen* than with *zien*, is that the drawing is the first drawing of/by Rembrandt I ever saw/forged. An alternative interpretation is that I saw or forged a certain drawing of/by Rembrandt for the first time. The difference between these two readings relates to a difference in the specificity of the referent of the phrase *mijn eerste tekening van Rembrandt*; in either case the drawing in question is my first drawing of Rembrandt, so that we are dealing with dependent PPs in both cases. This suggests that structure (530b′) is not available.

(530) a.　Ik　heb　　mijn eerste tekening　van Rembrandt　gezien/vervalst.
　　　　　I　 have　my first drawing　　　of Rembrandt　seen/forged
　　　　　'I have seen/forged my first drawing of Rembrandt.'
　　　b.　Ik heb [mijn eerste tekening [van Rembrandt]_{Agent/Theme}] gezien/vervalst.
　　　b′.　*Ik heb [mijn eerste tekening] [van Rembrandt] gezien/vervalst.

On the basis of these facts, we expect placement of the negator *niet* in between the picture noun and the *van*-PP to yield an unacceptable result. The examples in (531) show that this is indeed borne out: both sentences are semantically ill-formed, regardless of the semantic role of the constituent *Rembrandt* (agent, theme, possessor).

(531) a.　*Ik　heb　　een tekening　niet van Rembrandt　gezien (maar van Frans Hals).
　　　　　I　 have　a drawing　　not of Rembrandt　seen　but of Frans Hals
　　　b.　*Ik　heb　　mijn eerste tekening　niet van Rembrandt　gezien/vervalst
　　　　　I　 have　my first drawing　　not of Rembrandt　seen/forged
　　　　　(maar van Frans Hals).
　　　　　but of Frans Hals

Topicalization, however, provides equivocal evidence. The fact illustrated by (532a) that topicalization of the entire noun phrase is possible again confirms that the structure in (530b) is available, but evidence in favor of the ungrammaticality of the structure in (530b′) is less firm: the claim is supported by the fact illustrated by (532b) that topicalization of the noun phrase in isolation is impossible, but contradicted by the fact illustrated by (532c) that topicalization of the *van*-PP in isolation is allowed.

(532) a.   Mijn eerste tekening van Rembrandt heb   ik   gezien.
           my first drawing   of Rembrandt   have I   seen
           'I have seen my first drawing by/of Rembrandt.'

      b.   *Mijn eerste tekening heb   ik   van Rembrandt gezien (niet van Frans Hals).
           a/my first drawing   have I   of Rembrandt   seen   not of Frans Hals

      c.   Van Rembrandt heb   ik   mijn eerste tekening gezien.
           of Rembrandt   have I   my first drawing   seen

It must further be noted that examples behave slightly differently with respect to the negation test and topicalization when we use a determiner like *zo'n* 'such a' or *een dergelijke* 'a similar'. Example (533a) shows that in that case negation can be placed between the noun phrases and the *van*-PP, and given that we can place all sort of adverbial material (like *gisteren nog* 'only yesterday') between the noun phrase and the PP, it is very likely that we are dealing here with an independent *van*-PP. This suggestion is further supported by the fact illustrated in (533b) that topicalization of the picture noun may strand the PP. It seems that this difference is again related to the interpretation of the noun phrase: the noun phrase in (531a) refers to a specific token (hence the unacceptability: one and the same drawing cannot be of/by two separate persons), whereas the noun phrases in (533) refer to a type of drawing.

(533) a.   Ik heb zo'n/een dergelijke tekening niet van Rembrandt$_{Agent/Theme}$ gezien.
           I have such a/a similar   drawing   not of Rembrandt   seen
           'Such a/A similar drawing I have seen not by/of Rembrandt.'

      b.   Zo'n/Een dergelijke tekening heb   ik (ook) van Rembrandt$_{Agent/Theme}$ gezien.
           such a/a similar drawing   have I   also of Rembrandt   seen

III. Conclusion

It seems that we may tentatively conclude on the basis of the preceding discussion that there is no reason to assume that sentences with the verbs *zien* 'to see' or *vervalsen* 'to forge' are structurally different from those with the verb *beschadigen* 'to damage'. Whereas there is clear syntactic and semantic evidence for assuming that verbs like *maken* and *kopen* clearly may occur in two different syntactic frames, such evidence is lacking in the case of verbs like *zien* and *vervalsen*. The fact that the latter verbs allow topicalization of the PP therefore suggests that topicalization is not restricted to independent *van*-PPs, but can also apply to complements of picture nouns. The test of PP-extraction may therefore still be a valid means of distinguishing between complements and adjuncts within the noun phrase.

2.2.5.5.2. *The postnominal* van/over-*PPs of story nouns*

As in the case of picture nouns, observations on PP-extraction from noun phrases headed by story nouns are complicated by the fact that the acceptability of the resulting structures depends on the choice of the verb. Constructions with story nouns used in combination with verbs of communication like *schrijven* 'to write' or *lezen* 'to read' will be shown to be both structurally and interpretationally ambiguous; the *over*-PP in (534a), for example, can be interpreted as being the complement of the story noun or as functioning as an independent constituent of the clause.

(534) a.　Jan　heeft　een boek　over WO II　　geschreven.
　　　　　Jan　has　　a book　　about WW II　written
　　　　　'Jan has written a book about World War II.'
　　　b.　Jan heeft [$_{NP}$ een boek [$_{PP}$ over WO II]$_{Theme}$] geschreven.
　　　b'.　Jan heeft [$_{NP}$ een boek] [$_{PP}$ over WO II]$_{Theme}$ geschreven.

The same can be said of transfer verbs like *kopen* 'to buy' in (521a), where the *van*-PP can be interpreted either as the agent of the noun or as the source argument of the verb. The preferred reading of (535a) depends on the knowledge of the speaker: those who know that Jan Arends is a writer will probably opt for the reading in (535b) whereas those who do not will opt for the reading in (535b'). We will not discuss this any further here since this would simply repeat the discussion on picture nouns in Section 2.2.5.5.1.

(535) a.　Ik　heb　　een boek　van Jan Arends$_{Agent/Source}$ gekocht.
　　　　　I　　have　a book　　of Jan Arends　　　　　　bought
　　　　　'I have bought a drawing by/from Jan Arends.'
　　　b.　Ik heb [$_{NP}$ een boek [$_{PP}$ van Jan Arends]$_{Agent/Theme}$] gekocht.
　　　b'.　Ik heb [$_{NP}$ een boek] [$_{PP}$ van Jan Arends]$_{Source}$ gekocht.

Affective verbs like *verbranden* 'to burn' normally require construal of the *van*/*over*-PP as an argument of the story noun. This means that an example like (536a) can only be interpreted with the structure in (536b); the structure in (536b') is unacceptable.

(536) a.　Jan　heeft　een boek　over WO II　verbrand.
　　　　　Jan　has　　a book　　about WW II　burnt
　　　　　'Jan has burnt a book about World War II.'
　　　b.　Jan heeft [$_{NP}$ een boek [$_{PP}$ over WO II]$_{Theme}$] verbrand.
　　　b'.　*Jan heeft [$_{NP}$ een boek] [$_{PP}$ over WO II] verbrand.

In what follows, we will again refer to *van*-PPs that are part of the noun phrase as dependent PPs and to *van*-PPs that are external to the noun phrase and function as an argument of the verb or as a restrictive adverbial phrase as independent PPs. The overall aim of this section will be to find a way of establishing the status of the *van*- and *over*-PPs in the various constructions: in Subsection I we will discuss constructions in which only an *over*-PP is present, and in Subsection II construction in which only a *van*-PP is expressed; section III will look at the verbs *zien* 'to see' and *vertalen* 'to translate' that seem to defy classification into any of the verb types distinguished so far. Finally, Subsection IV will conclude with some conclusions.

I. Story nouns + over-PPs

This subsection will discuss the difference between sentences like (537a) that contain a verb of communication like *schrijven* 'to write' and sentences like (537b) that contain an affective verb like *verbranden* 'to burn'. We will show that the former are ambiguous between readings with a dependent and an independent PP, whereas the latter are only possible with a dependent PP.

(537) a. Jan heeft een boek over WO II   geschreven.
          Jan has   a book   about WW II written
          'Jan has written a book about World War II.'
     b. Jan heeft een boek over WO II   verbrand.
          Jan has   a book   about WW II burnt
          'Jan has burnt a book about World War II.'

A. Scope of the ordinal numeral eerste *'first'*

The distinction between dependent and independent *over*-PPs relates to a difference in interpretation, which can be made more prominent by adding the ordinal numeral *eerste* 'first'. Consider the ambiguous example in (538a). When the *over*-PP is dependent on the story noun, as in the primed example, we are not dealing with the first book that Jan has ever written; it is merely the first book on World War II that he wrote. When the PP is independent of the noun, as in the doubly-primed example, the book in question is the very first one Jan wrote. Sentence (538b) does not allow this type of ambiguity: the noun phrase must refer to the first book on World War II that Jan wrote or acquired (depending on the interpretation of the possessive pronoun *zijn* as an agent or a possessor).

(538) a.   Jan$_i$ heeft zijn$_i$ eerste boek over WO II   geschreven.
            Jan has   his first book   about WW II written
            'Jan has written/wrote his first book about World War II.'
     a′. Jan$_i$ heeft [$_{NP}$ zijn$_{i-Agent}$ eerste boek [$_{PP}$ over WO II]$_{Theme}$] geschreven.
     a″. Jan$_i$ heeft [$_{NP}$ zijn$_{i-Agent}$ eerste boek] [$_{PP}$ over WO II]$_{Theme}$ geschreven.
     b.   Jan$_i$ heeft zijn$_i$ eerste boek over WO II verbrand.
            Jan has   his first book   about WW II burnt
            'Jan has burnt his first book about World War II.'
     b′. Jan$_i$ heeft [$_{NP}$ zijn$_{i-Agent/Poss}$ eerste boek [$_{PP}$ over WO II]$_{Theme}$] verbrand.
     b″. *Jan$_i$ heeft [$_{NP}$ zijn$_{i-Agent/Poss}$ eerste boek] [$_{PP}$ over WO II]$_{Theme}$ verbrand.

B. Negation

Insertion of the negator *niet* 'not' can also be used to disambiguate these sentences when we assume that negation cannot occur within the noun phrase, that is, that it can only be placed between the noun and an independent *over*-PP. This correctly predicts that (539a) will be acceptable on the reading that the first book that Jan ever wrote was about World War II, whereas the construction in (539b) is unacceptable, as neither of the two possible structures is available.

(539) a.   Jan$_i$ heeft zijn$_i$ eerste boek niet over WO II   geschreven.
            Jan has   his first book   not about WW II written
            'Jan didn't write his first book about World War II.'
     a′. *Jan$_i$ heeft [$_{NP}$ zijn$_{i-Agent}$ eerste boek niet over WO II$_{Theme}$] geschreven.
     a″. Jan$_i$ heeft [$_{NP}$ zijn$_{i-Agent}$ eerste boek] niet [$_{PP}$ over WO II]$_{Theme}$ geschreven.
     b. *Jan$_i$ heeft zijn$_i$ eerste boek niet over WO II   verbrand.
            Jan has   his first book   not   about WW II burnt
     b′. *Jan$_i$ heeft [$_{NP}$ zijn$_{i-Agent/Poss}$ eerste boek niet over WO II$_{Theme}$] verbrand.
     b″. *Jan$_i$ heeft [$_{NP}$ zijn$_{i-Agent/Poss}$ eerste boek] niet [$_{PP}$ over WO II]$_{Theme}$ verbrand.

C. Topicalization

Topicalization can also be used to distinguish the two readings. Of course, since *over*-PPs can be dependent with both verb types, it does not come as a surprise that it is always possible to topicalize both the noun phrase and the PP. Since in Dutch only a single constituent can be placed before the verb in sentence initial position (the °constituency test), we predict that only the constructions in the singly-primed examples are acceptable. This prediction is borne out: sentence (540a) can only mean that it is the first time Jan has written a book about the World War II, not that it is the first book he ever wrote.

(540) a.　Zijn eerste boek　over WO II　heeft　Jan　in 1982　geschreven.
　　　　　his first book　　　about WW II has　　Jan　in 1982　written
　　　　　'Jan wrote his first book about World War II in 1982.'
　　a′.　[NP Zijn eerste boek [PP over WO II]Theme]i heeft Jan t_i in 1982 geschreven.
　　a″.　*[NP Zijn eerste boek]i [PP over WO IITheme]j heeft Jan t_i t_j in 1982 geschreven.
　　b.　Zijn eerste boek　over WO II　heeft　Jan　in 1982　verbrand.
　　　　his first book　　　about WW II has Jan　　in 1982　burnt
　　　　'Jan burnt his first book about World War II in 1982.'
　　b′.　[NP Zijn eerste boek [PP over WO II]Theme]i heeft Jan t_i in 1982 verbrand.
　　b″.　*[NP Zijn eerste boek]i [PP over WO IITheme]j heeft Jan t_i t_j in 1982 verbrand.

Next, let us consider the possibilities for topicalizing the story noun only, leaving the PP in the original position. Here we would expect only the doubly-primed examples to yield acceptable results. The examples in (541) show that this prediction is borne out: example (541a) can only express that the book in question is the very first Jan wrote, and example (541b) does not allow this type of topicalization, as the only structure that would allow this kind of topicalization (the doubly-primed one) is not available.

(541) a.　Zijn eerste boek　heeft　Jan　over WO II　geschreven.
　　　　　his first book　　　has　　Jan　about WW II written
　　　　　'Jan has written his first book about World War II.'
　　a′.　*[NP Zijn eerste boek]i heeft Jan [NP t_i [PP over WO II]Theme] geschreven.
　　a″.　[NP Zijn eerste boek]i heeft Jan t_i [PP over WO II]Theme geschreven.
　　b.　*Zijn eerste boek　　heeft　Jan over WO II verbrand.
　　　　his first book has　Jan　　about WW II　　burnt
　　b′.　*[NP Zijn eerste boek]i heeft Jan [NP t_i [PP over WO II]Theme] verbrand.
　　b″.　*[NP Zijn eerste boek]i heeft Jan t_i [PP over WO II]Theme verbrand.

Finally, let us look at the possibilities for topicalizing of the *over*-PP. Not surprisingly, the idea is that only independent *van*-PPs can be topicalized. The relevant examples can be found in (542). Example (542a) seems to have the interpretation associated with the independent use of the PP: it expresses that the very first book Jan wrote was about the World War II. As expected, example (542b) is degraded due to the fact that the *over*-PP can only be interpreted as a dependent of the story noun.

(542) a. Over WO II _{Theme} heeft Jan zijn eerste boek   geschreven.
        about WW II   has   Jan his fist book   written
        'It's about World War II that Jan has recently written/wrote his first book.'
   a'. *[$_{PP}$ Over WO II]$_i$ heeft Jan [$_{NP}$ zijn eerste boek t_i] geschreven.
   a''. [$_{PP}$ Over WO II]$_i$ heeft Jan [$_{NP}$ zijn eerste boek] t_i geschreven.
   b. *Over WO II$_{Theme}$ heeft Jan zijn eerste boek verbrand.
        about WW II   has   Jan his fist book   burnt
   b'. *[$_{PP}$ Over WO II]$_i$ heeft Jan [$_{NP}$ zijn eerste boek t_i] verbrand.
   b''. *[$_{PP}$ Over WO II]$_i$ heeft Jan [$_{NP}$ zijn eerste boek] t_i verbrand.

It must be noted, however, that it is possible to force the reading associated with (542a'), according to which the book in question is not the first Jan wrote, but the first he wrote on World War II, by adding an adverb like *pas onlangs* 'only recently'. Clearly, this cannot be accounted for by assuming that only PPs functioning as independent constituents can be topicalized, and we must therefore assume the same to be possible with complements of story nouns.

(543) a. Over WO II$_{Theme}$ heeft Jan pas onlangs   zijn eerste boek   geschreven.
        about WW II   has   Jan only recently   his fist book   written
        'It's about World War II that Jan has recently written/wrote his first book.'
   b. [$_{PP}$ Over WO II]$_i$ heeft Jan pas onlangs [$_{NP}$ zijn eerste boek t_i] geschreven.
   b'. *[$_{PP}$ Over WO II]$_i$ heeft Jan [$_{NP}$ zijn eerste boek] t_i geschreven.

    A similar effect can be achieved in the constructions in (544) involving °R-extraction. Again, the assumption would be that extraction is possible from a PP complementing the VP, but not from a PP functioning as complement of the noun. The preferred interpretation of (544a) is in accordance with this assumption: the question concerns the first book that Jan ever wrote. The alternative reading becomes available, however, when we add the adverb *onlangs*: now the question concerns the new subject that Jan recently wrote a book about. Clearly, this cannot be accounted for by assuming that R-extraction is only possible with PPs that function as complements of the verb.

(544) a. Waar$_{Theme}$ heeft Jan zijn eerste boek over geschreven?
        where   has   Jan his first book   about written
        'What is it Jan wrote his first book about?'
   b. Waar$_{Theme}$ heeft Jan onlangs   zijn eerste boek over   geschreven?
        where   has   Jan recently his first book   about written
        'What is it Jan has recently written his first book about?'

II. *Story nouns* + van-*PPs*

This subsection will consider story noun constructions in which only the *van*-PP is mentioned. Example (545) gives examples involving the communication verb *lezen* 'to read' and the affective verb *verbranden* 'to burn'. The primed and doubly-primed examples are the structures associated with, respectively, the dependent and independent use of the *van*-PP. In what follows we will see that (545b) with the affective verb *verbranden* 'to burn' allows only a dependent interpretation of the PP in (545b'); (545b'') does not occur.

(545) a.   Jan heeft een boek van Huizinga gelezen.
          Jan has   a book   of Huizinga   read
          'Jan has read a book by Huizinga.'
    a′.   Jan heeft [$_{NP}$ een boek [$_{PP}$ van Huizinga]$_{Agent}$] gelezen.
    a″.   Jan heeft [$_{NP}$ een boek] [$_{PP}$ van Huizinga]$_{ADV}$ gelezen.
    b.   Jan heeft een boek van Huizinga verbrand.
          Jan has   a book   of Huizinga   burnt
          'Jan has burnt a book by Huizinga.'
    b′.   Jan heeft [$_{NP}$ een boek [$_{PP}$ van Huizinga]$_{Agent}$] verbrand.
    b″. *Jan heeft [$_{NP}$ een boek] [$_{PP}$ van Huizinga] verbrand.

A. Scope of the ordinal numeral eerste *'first'*

The distinction between dependent and independent *van*-PPs relates to a difference in interpretation, which can be made more conspicuous by adding the ordinal numeral *eerste* 'first'. Consider the ambiguous example in (546a). When the *van*-PP is dependent on the story noun, as in (546b), we are not dealing with the first book that Jan has ever read; it merely states that it is the first time Jan has read a book by Huizinga. When the *van*-PP is independent of the story noun, as in (546b′), the resulting sentence is slightly marked, but it is clear that the first book read by Jan was written by Huizinga.

(546) a.   Jan heeft zijn eerste boek van Huizinga gelezen.
          Jan has   his first book   of Huizinga   read
          'Jan (has) read his first book by Huizinga.'
    b.   Jan heeft [$_{NP}$ zijn eerste boek [$_{PP}$ van Huizinga]$_{Agent}$] gelezen.
    b′. $^?$Jan heeft [$_{NP}$ zijn eerste boek] [$_{PP}$ van Huizinga]$_{ADV}$ gelezen.

Sentence (547a) does not allow this type of ambiguity: it only allows an interpretation associated with (547b) according to which Jan has burnt a book written by Huizinga for the first time; the reading associated with (547b′), according to which the very first book that Jan ever burnt was a book by Huizinga, is not available. Another (less likely) reading of (547a) is that Jan is planning to burn a number of books by Huizinga, and that he has now burnt the first one, but on this reading, too, the *van*-PP would function as a complement of the noun.

(547) a.   Jan heeft zijn eerste boek van Huizinga verbrand.
          Jan has   his first book   of Huizinga   burnt
          'Jan (has) burnt his first book by/from Huizinga.'
    b.   Jan heeft [$_{NP}$ zijn eerste boek [$_{PP}$ van Huizinga]$_{Agent}$] verbrand.
    b′. *Jan heeft [$_{NP}$ zijn eerste boek] [$_{PP}$ van Huizinga]$_{ADV}$ verbrand.

B. Negation

We have seen earlier that insertion of the negator *niet* 'not' can also be used to disambiguate these sentences under the assumption that it can only be placed between the noun and an independent *over*-PP. We therefore expect *niet* to be acceptable in this position in (548a) on the reading associated with the structures in (548b′). This expectation seems to be borne out: (548a) can only be interpreted such

that the book in question is the very first book about the Middle Ages I ever read, that is, with the PP as independent constituent. Observe, however, that the use of sentences of this kind is somewhat restricted: they are only fully acceptable in contrastive contexts and leaving out the theme argument will degrade the result.

(548) a.   Ik heb mijn eerste boek over de middeleeuwen$_{Theme}$ niet van Huizinga$_{Agent}$
        I   have my first book   about the Middle Ages   not of Huizinga
        gelezen, maar van Pleij$_{Agent}$.
        read   but   of Pleij
        'The first book about the Middle Ages I read wasn't by Huizinga.'
    b.   *Ik heb [$_{NP}$ mijn eerste boek over de M.E. [$_{PP}$ niet van Huizinga]$_{Agent}$] gelezen.
    b′.   Ik heb [$_{NP}$ mijn eerste boek over de M.E.] niet [$_{PP}$ van Huizinga]$_{ADV}$ gelezen.

The assumption that the negator *niet* 'not' can only be placed between the noun and an independent *over*-PP also correctly predicts that (549a) is unacceptable, as only the structure with a dependent PP is available.

(549) a.   *Ik heb   mijn eerste boek niet van Huizinga verbrand.
         I   have my first book   not of Huizinga   burnt
    b.   *Ik heb [$_{NP}$ mijn eerste boek [$_{PP}$ niet van Huizinga]$_{Agent}$] verbrand.
    b′.   *Ik heb [$_{NP}$ mijn eerste boek] niet [$_{PP}$ van Huizinga]$_{ADV}$ verbrand.

C. Topicalization

Topicalization can also be used to distinguish the two readings. Of course, since *van*-PPs can be dependent on the noun with both verb types, it does not come as a surprise that it is always possible to topicalize both the noun phrase and the PP. Since in Dutch only a single constituent can be placed before the verb in sentence initial position (the °constituency test), we predict that only the constructions in the singly-primed examples are acceptable. This predication is borne out: sentence (550a) means that I read my first book by Huizinga, not that this was the first book I read.

(550) a.   Mijn eerste boek van Huizinga heb   ik gelezen.
        my first book   of Huizinga   have I   read
        'I (have) read my first book by Huizinga.'
    a′.   [$_{NP}$ Mijn eerste boek [$_{PP}$ van Huizinga]$_{Agent}$]$_i$ heb ik t_i gelezen.
    a″.   *[$_{NP}$ Mijn eerste boek]$_i$ [$_{PP}$ van Huizinga $_{ADV}$]$_j$ heb ik t_i t_j gelezen.
    b.   Mijn eerste boek van Huizinga heb   ik verbrand.
        my first book   of Huizinga   have I   burnt
        'I (have) burnt my first book by Huizinga.'
    b′.   [$_{NP}$ Mijn eerste boek [$_{PP}$ van Huizinga]$_{Agent}$]$_i$ heb ik t_i verbrand.
    b″.   *[$_{NP}$ Mijn eerste boek]$_i$ [$_{PP}$ van Huizinga $_{ADV}$]$_j$ heb ik t_i t_j verbrand.

Next, let us consider the possibilities for topicalizing the story noun only, leaving the PP in the original position. Here we would expect only the doubly-primed examples to yield acceptable results. The examples in (551) show that this prediction is borne out: example (551a) can only express that the book in question is the very first one I ever read. Example (551b) does not allow this type of

topicalization, as the only structure that would allow this kind of topicalization (the doubly-primed one) is not available.

(551) a. $^?$Mijn eerste boek heb ik   van Huizinga   gelezen.
　　　 my first book　　 have I   of Huizinga　 read
　　　 'The first book I read was by Huizinga.'
　　 a′. *[$_{NP}$ Mijn eerste boek]$_i$ heb ik [$_{NP}$ t_i [$_{PP}$ van Huizinga]$_{Agent}$] gelezen.
　　 a″. [$_{NP}$ Mijn eerste boek]$_i$ heb ik t_i [$_{PP}$ van Huizinga]$_{ADV}$ gelezen.
　　 b. *Mijn eerste boek heb   ik   van Huizinga   verbrand.
　　　 my first book　　 have I   of Huizinga　 burnt
　　 b′. *[$_{NP}$ Mijn eerste boek]$_i$ heb ik [$_{NP}$ t_i [$_{PP}$ van Huizinga]$_{Agent}$] verbrand.
　　 b″. *[$_{NP}$ Mijn eerste boek]$_i$ heb ik t_i [$_{PP}$ van Huizinga]$_{ADV}$ verbrand.

　　　Finally, let us look at the possibilities for topicalizing the *van*-PP, and assume that only independent *van*-PPs can be topicalized. The relevant examples can be found in (552). Example (552a) indeed seems to have the interpretation associated with the independent use of the PP: it expresses that the very first book I read was about the Middle Ages. As expected, example (552b) is degraded due to the fact that the *over*-PP can only interpreted as a dependent of the story noun.

(552) a.　Van Huizinga heb   ik   mijn eerste boek gelezen.
　　　　 of Huizinga　　have I   my first book　　 read
　　　　 'I (have) read my first book by Huizinga.'
　　 a′. *[$_{PP}$ Van Huizinga$_{Agent}$]$_i$ heb ik [$_{NP}$ mijn eerste boek t_i] gelezen.
　　 a″. [$_{PP}$ Van Huizinga $_{ADV}$]$_i$ heb ik [$_{NP}$ mijn eerste boek] t_i gelezen.
　　 b.　$^{??}$Van Huizinga heb   ik   mijn eerste boek verbrand.
　　　　 of Huizinga　　 have I   my first book　　 burnt
　　　　 'I (have) burnt my first book by Huizinga.'
　　 b′. $^{??}$[Van Huizinga$_{Agent}$]$_i$ heb ik [$_{NP}$ mijn eerste boek t_i] verbrand.
　　 b″. *[Van Huizinga $_{ADV}$]$_i$ heb ik [$_{NP}$ mijn eerste boek] t_i verbrand.

It must be noted, however, that it is possible to force the reading associated with the structure in (552a′), according to which the book in question is not the very first I read, but the first I read by Huizinga, by adding an adverb like *onlangs* 'recently'. Clearly, this cannot be accounted for by assuming that only PPs functioning as independent constituents can be topicalized; we must therefore assume the same to be possible with complements of story nouns.

(553) a.　Van Huizinga heb ik   onlangs mijn eerste boek gelezen.
　　　　 of Huizinga　 have I   recently my first book　　 read
　　　　 'I (have) read my first book by Huizinga.'
　　 b.　[$_{PP}$ Van Huizinga$_{Agent}$]$_i$ heb ik onlangs [$_{NP}$ mijn eerste boek t_i] gelezen.
　　 b′. [$_{PP}$ Van Huizinga $_{ADV}$]$_i$ heb ik onlangs [$_{NP}$ mijn eerste boek] t_i gelezen.

III. Story nouns with verbs like zien *'to see' and* vertalen *'to translate'*

This subsection discusses constructions with verbs such as *zien* 'to see' or *vertalen* 'to translate' to see whether there are reasons to assume that these, too, can be

combined with an independent *over-* or *van*-PP. The answer will be negative; we will show that the structure in the doubly-primed examples are excluded.

(554) a. Ik heb   een film over Nixon   gezien.
          I   have a film   about Nixon seen
          'I have seen a film about Nixon.'
      a′. Ik heb [een film [over Nixon]Theme] gezien.
      a″. *?Ik heb [een film] [over Nixon]ADV gezien.
      b. Ik heb   een boek van Huizinga   vertaald.
          I   have a book   of Huizinga   translated
          'I have translated a book by Huizinga.'
      b′. Ik heb [een boek [van Huizinga]Agent] vertaald.
      b″. *Ik heb [een boek] [van Huizinga]ADV vertaald.

The first reason for this conclusion is that adding the ordinal numeral *eerste* does not create the by now familiar ambiguity. The most plausible interpretation of example (555a) is that in which I have just for the first time seen a film about Nixon, or, alternative, that I watched the first film about Nixon that I ever purchased; in both cases we are dealing with a theme argument of the noun. Something similar holds for the construction in example (555b): the book in question is not the first one I ever translated, but the first one by Huizinga.

(555) a. Ik heb   mijn eerste film over Nixon   gezien.
          I   have my first film   about Nixon seen
          'I have seen my first film about Nixon.'
      a′. Ik heb [mijn eerste film [over Nixon]Theme] gezien.
      a″. *?Ik heb [mijn eerste film] [over Nixon]ADV gezien.
      b. Ik heb   mijn eerste boek van Huizinga vertaald   (in het Engels).
          I   have my first book   of Huizinga   translated into the English
          'I have translated my first book by Huizinga (into English).'
      b′. Ik heb [mijn eerste boek [van Huizinga]Agent] vertaald.
      b″. *Ik heb [mijn eerste boek] [van Huizinga]ADV vertaald.

    On the basis of these facts, we expect placement of the negator *niet* in between the story noun and the *over*-PP to yield an unacceptable result. The examples in (556) show that this expectation is indeed borne out: both sentences are semantically ill-formed.

(556) a. *Ik heb een film niet over NixonTheme gezien (maar over JFK).
          I   have a film   not about Nixon   seen   but about JFK
      b. *Ik heb   een boek niet van HuizingaAgent vertaald   (maar van Pleij).
          I   have a book   not of Huizinga   translated but of Pleij

Topicalization, on the other hand, provides more equivocal evidence. The fact illustrated by (557a) and (558a) that topicalization of the entire noun phrase is possible again confirms that the primed structures in (555) are available, but evidence in favor of the claim that the doubly-primed structures are ungrammatical is less firm: the claim is supported by the fact illustrated by the (b)-examples that topicalization of the noun phrase in isolation is impossible, but contradicted by the

fact illustrated by the (c)-examples that topicalization of the *van*-PP in isolation is allowed. Note that the results of the negation and topicalization tests change when we use a determiner like *zo'n* 'such a' or *een dergelijke* 'a similar'; see Section 2.2.5.5, sub II, for discussion.

(557) a. Mijn eerste film over Nixon heb   ik pas gisteren   gezien.
           my first film about Nixon   have I   only yesterday seen
      b. *Mijn eerste film heb ik over Nixon_Theme gezien (niet over JFK).
           my first film   have I about Nixon   seen   not about JFK
      c. Over Nixon heb ik pas gisteren   mijn eerste film gezien.
           about Nixon have I only yesterday my first film   seen

(558) a. Mijn eerste boek van Huizinga_Agent heb ik in 1998 vertaald.
           my first book of Huizinga   have I   in 1998 translated
      b. *Mijn eerste boek heb ik van Huizinga_Agent vertaald   (niet van Pleij).
           my first book   have I of Huizinga   translated not of Pleij
      c. Van Huizinga_Agent heb   ik mijn eerste boek in 1998 vertaald.
           of Huizinga   have I   my first book   in 1998 translated

IV. Conclusion

It seems that we may tentatively conclude on the basis of the preceding subsections that there is no reason to assume that sentences with the verbs *zien* 'to see' and *vertalen* 'to translate' are structurally different from affective verbs like *verbranden* 'to burn': they only allow the reading with the PP inside the noun phrase. Whereas there is clear syntactic and semantic evidence for assuming that communication verbs like *schrijven* 'to write' may occur in two different syntactic frames, such evidence is lacking in the case of verbs like *zien* and *vertalen*. The fact that the latter verbs allow topicalization of the *van/over*-PP therefore suggests that topicalization is not restricted to independent PPs, but can also apply to complements of story nouns. The test of PP-extraction may therefore still be a valid means of distinguishing between complements and adjuncts within the noun phrase.

2.2.5.6. Application of the complement/adjunct tests

Now that we have discussed the status of the PPs that occur with noun phrases headed by a picture/story noun and established that extraction of PP-complements is only possible from indefinite noun phrases selected by non-affective verbs, we can apply the four tests provided in Section 2.2.1 to distinguish complement PPs from adjunct PPs to picture/story noun constructions. As these tests are designed to distinguish between complements and adjuncts within the noun phrase, we will restrict ourselves to those cases where the *van/over*-PPs can be assumed to form part of the noun phrase; see Section 2.2.5.5 for discussion.

2.2.5.6.1. Obligatoriness of the PPs

Complements are normally obligatorily present, whereas adjuncts are optional. This section will show, however, that this test does not provide conclusive evidence for assuming that the agent and theme act as arguments of the picture/story noun.

I. Picture nouns

As illustrated in example (559) the agent argument of a picture noun need not be overtly expressed, even though it will always be semantically implied.

(559) a.   Ik heb   een tekening van de Westertoren (van Rembrandt) gekocht.
           I   have a drawing   of the Westertoren of Rembrandt   bought
           'I've bought a drawing of the Westertoren by Rembrandt.'
     b.   Jan heeft een tekening van zijn broer gemaakt.
           Jan has   a drawing   of his brother made
           'Jan has made a drawing of his brother.'

Example (560) shows that theme PPs can sometimes be left out as well, even in cases where the picture noun is derived from a transitive verb requiring a theme complement, such as *schilderij* 'painting' or *tekening* 'drawing'.

(560) a.   Ik heb   gisteren   een schilderij (van Leiden) gezien.
           I   have yesterday a painting   of Leiden   seen
           'I saw a painting (of Leiden) yesterday.'
     b.   Jan heeft een tekening (van de Westertoren) gemaakt.
           Jan has   a drawing   of the Westertoren   made
           'Jan has made a drawing (of the Westertoren).'

Leaving out the theme arguments does not always yield an acceptable result: with a noun like *afbeelding* 'picture' in (561) leaving out the theme normally gives rise to a degraded result. The difference between (560) and (561) is probably related to the degree of lexicalization: picture nouns like *schilderij* and *tekening* 'drawing' are highly lexicalized as a result of which they may have lost their argument structure; the picture noun *afbeelding* 'picture', on the other hand, exhibits a lower degree of lexicalization and can be said to have retained the argument structure of the verb, even though its denotation has changed. For more a detailed discussion of this issue, see Section 2.2.5.2.

(561) a.   Ik heb   een afbeelding   ^{*?}(van de Westertoren) aan de muur gehangen.
           I   have a picture   of the Westertoren   on the wall   hung
           'I've put a picture on the wall.'
     b.   Jan heeft een afbeelding   ^{*?}(van de Westertoren) gekocht.
           Jan has   a picture   of the Westertoren   bought
           'Jan has bought a picture (of the Westertoren).'

II. Story Nouns

As pointed out in Section 2.2.5.2.2, in some cases the complements of story nouns with a verbal counterpart cannot felicitously be left out, whereas in others explicit mention of the complement(s) is not required. Thus, where the noun has abstract reference, that is, refers to the contents of some object, mention of at least one argument is preferred. This argument need not be the subject matter (theme), but may instead be the creator (agent). This is illustrated in example (562a). In cases like (562b), where the referent is a concrete object, on the other hand, there is no need for an argument. Finally, in (562c), where the creator of the story noun is also the agent of the whole construction, the story noun can appear without complements.

(562) a.   Ik heb   naar een lezing ^{??}(over/van Mulisch) geluisterd.
           I   have to a lecture   about/of Mulisch   listened
           'I've listened to a lecture (on/by Mulisch).'
     b.   Ik heb   een lezing (over/van Mulisch) uitgetypt.
           I   have a lecture   about/of Mulisch typed.out
           'I have typed out a lecture (on/by Mulisch).'
     c.   Ik heb   een voordracht (over Mulisch) gehouden.
           I   have a lecture   about Mulisch kept
           'I have given a lecture (on Mulisch).'

Where the story noun does not have a verbal counterpart, both the agent and the theme arguments can normally be left out, even if it is the contents of the story noun that is relevant. This is illustrated in example (563).

(563) a.   Ik heb   gisteren   een boek/artikel (over/van Mulisch) gelezen.
           I   have yesterday a book/article   about/of Mulisch read
           'I bought a book/article (about/by Mulisch) yesterday.'
     b.   Ik heb   gisteren   een film (over Nixon/van Hitchcock) gezien.
           I   have yesterday a film   about Nixon/of Hitchcock   seen
           'I have seen a film (about Nixon)/a (Hitchcock) film yesterday.'

Sentences like the ones in (563) are quite common with modified story nouns, as in (564a). Such sentences typically serve to start a discourse, with the speaker waiting for encouragement from the hearer, and evoke questions like (564b) from the addressee concerning the identity of the agent or the theme of the story noun, which shows that these are still somehow implied.

(564) a.   Ik heb   gisteren   een interessant artikel gelezen.   [speaker A]
           I   have yesterday an interesting article read
           'I read an interesting article yesterday.'
     b.   O ja? Van wie/Waarover?   [speaker B]
           oh yes of who/what.about
           'Did you? Who by/What about?'

2.2.5.6.2. *Occurrence of the* van-*PPs in postcopular predicative constructions*

This section will show that both possessive and agentive *van*-PPs behave like adjuncts in being able to occur in the postcopular predicative position. The theme, on the other hand, behaves more like a complement.

I. Picture nouns

Since Section 2.2.1.3 has shown that *van*-PPs in postcopular predicative constructions are typically interpreted as possessors, it does not come as a surprise that example (565a) can be interpreted with *Jan* as the possessor of the painting. What is surprising, however, is that *Jan* can also be interpreted as the agent of the construction. In fact, the examples in (565b&c) are also ambiguous with regard to the distribution of the agent and possessor roles: the preferred interpretation indicated by the labels and given in the translations is entirely based on our knowledge of the world.

(565) a.   Dit schilderij van de Westertoren$_{Theme}$ is van Jan$_{Poss/Agent}$.
            this painting of the Westertoren   is of Jan
            'This painting of the Westertoren belongs to/is made by Jan.'
    b.   Jans$_{Poss}$ schilderij van de Westertoren$_{Theme}$ is van Rembrandt$_{Agent}$.
            Jan's   painting   of the Westertoren   is of Rembrandt
            'Jan's painting of the Westertoren was made by Rembrandt.'
    c.   Rembrandts$_{Agent}$ schilderij   van de Westertoren$_{Theme}$ is van Jan$_{Poss}$.
            this painting of Rembrandt of the Westertoren   is of Jan
            'This painting by R. of the Westertoren belongs to Jan/was made by Jan.'

Example (566a) shows that placing a theme PP in predicative postcopular position normally yield a degraded result (although some people do accept this example). Examples like this improve, however, in contrastive contexts with strong emphasis on the subject noun phrase, as is shown in (566b); they are especially acceptable when the agent argument is present.

(566) a. $^{??}$Het schilderij is van de Westertoren$_{Theme}$.
            the painting   is of the Westertoren
    b.   DIT schilderij $^?$(van Rembrandt$_{Agent}$) is van de Westertoren$_{Theme}$
            this painting   of Rembrandt   is of the Westertoren
            (en DAT van de Zuidertoren).
            and that of the Zuidertoren
            'This painting (by Rembrandt) depicts the Westertoren (and that one the Zuidertoren).'

II. Story nouns

As expected, the possessor of story noun constructions can be used as the predicative part of copular constructions. As with picture nouns, however, the *van*-PP in this position can also be interpreted as the agent argument. Examples are given in (567). As in the case of picture nouns, knowledge of the world will affect the preference for one interpretation or the other; cf. example (565).

(567) a.   Dit boek (over de oorlog$_{Theme}$) is van Jan$_{Poss}$/Mulisch$_{Agent}$.
            this book about the war   is of Jan/Mulisch
            'This book (about the war) is Jan's/by Mulisch.'
    b.   Deze film (over Nixon$_{Theme}$) is van mij$_{Poss}$/Oliver Stone$_{Agent}$.
            this film   about Nixon   is of me/Oliver Stone
            'This film (about Nixon) is mine/by Oliver Stone.'

This test cannot be used in order to establish whether the theme of story nouns functions as a complement of the noun given that it does not have the form of a *van*-PP. Example (568) shows, however, that the theme-PP can be used in constructions with the verb *gaan* 'to go'.

(568)   Dit boek/Deze film gaat/*is over de oorlog$_{Theme}$.
        this book /this film goes/is   about the war
        'This book/film is about the war.'

2.2.5.6.3. R-pronominalization

According to this test the impossibility of R-pronominalization indicates adjunct status.

I. Picture nouns

That PP-adjuncts cannot undergo this pronominalization process is illustrated in (569): example (569b) is only acceptable when the phrase *er ... mee* is construed as an independent instrumental adverbial phrase.

(569) a.   Ik heb   een schilderij met een vergulde lijst gezien/beschadigd.
           I   have a painting   with a gilded frame   seen/damaged
           'I have seen/damaged some painting with a gilded frame.'
      b. #Ik heb <er> een schilderij <er> mee gezien/beschadigd.
           I   have there a painting   with seen/damaged

The fact that it is impossible to pronominalize possessive *van*-PPs, illustrated in (570b), therefore supports the conclusion from the previous section that these *van*-PPs function as adjuncts.

(570) a.   Ik heb   enkele beelden   van dit museum$_{Poss}$ gezien.
           I   have some sculptures of this museum   seen
           'I have seen some of this museum's sculptures.'
      b. *Ik heb   <er> enkele beelden <er> van gezien.
           I   have there some sculptures   of   seen

The acceptability of R-pronominalization in (571a′&b′) with the verb *zien* 'to see', on the other hand, may be taken as evidence in favor of the claim that *van*-PPs with the role of agent and theme function as complements of the picture noun. However, the fact that both the unsplit and the split patterns are acceptable suggests that, at least in the latter case, we may be dealing with a restrictive adverbial phrase; cf. Section 2.2.1.4. That the examples may not involve PP-complements of the picture noun is also suggested by the fact that the acceptability of the examples decreases when we use affective verbs like *beschadigen* 'to damage', which normally do not license the presence of dependent PPs; cf. Section 2.2.5.5. The results of the test are therefore not conclusive.

(571) a.   Ik heb enkele beelden   van dit kunstenaarscollectief$_{Ag}$ gezien/beschadigd.
           I   have some sculptures of this artists' collective   seen/damaged
           'I have seen/damaged some sculptures by this group of artists.'
      a′. Ik heb   <er> enkele beelden <er> van gezien/$^{??}$beschadigd.
           I   have there some sculptures   of seen/damaged
           'I have seen/damaged some sculptures by them.'
      b. Ik heb   een tekening van de Westertoren$_{Theme}$ gezien/beschadigd.
           I   have a   drawing of the Westertoren   seen/damaged
           'I have seen/damaged a drawing of the Westertoren.'
      b′. Ik heb   <er> een tekening <er> van gezien/$^{*?}$beschadigd.
           I   have there a   drawing   of seen/damaged
           'I have seen/damaged a drawing of it.'

II. Story nouns

That PP-adjuncts cannot undergo this pronominalization process is illustrated in (572): (572b) is acceptable, but only when the phrase *er ... mee* is construed as an independent instrumental adverbial phrase.

(572) a.   Ik heb   een boek met een harde kaft gelezen.
         I   have a book   with a hard cover   read
         'I have read a book with a hard cover.'
     b.   [#]Ik heb <er>   een boek <er> mee gelezen.
         I   have there a book   with read

Again, the finding that it is impossible to pronominalize possessive *van*-PPs with story nouns, illustrated in (573), supports the conclusion from the previous subsection that these *van*-PPs function as adjuncts.

(573) a.   Ik heb   enkele boeken van deze bibliotheek$_{Poss}$ gelezen.
         I   have some books   of this library   read
         'I have read some books from this library.'
     b.   ^{*?}Ik heb   <er> enkele boeken <er> van gelezen.
         I   have there some books   of   read

The acceptability of R-pronominalization in (574a′&b′) with the verb *lezen* 'to read', on the other hand, may be taken as evidence that PPs with the roles of agent and theme do function as complements of the story noun. However, the fact that both the unsplit and the split pattern are acceptable suggests that, at least in the latter case, we may be dealing with a restrictive adverbial phrase; cf. Section 2.2.1.4. That the examples do not involve PP-complements of the story noun is also suggested by the fact that the acceptability of the examples decreases when we use affective verbs like *verscheuren* 'to tear up', which do not license the presence of dependent PPs; cf. Section 2.2.5.5. The results of the test are therefore not conclusive.

(574) a.   Ik heb   enkele boeken van dit schrijversduo$_{Agent}$ gelezen/verscheurd.
         I   have some book   of this writer's duo   read/torn up
         'I have read/torn up some book by these writers.'
     a′. Ik heb <er>   enkele boeken <er> van gelezen/^{??}verscheurd.
         I   have there some books   of   read/torn up
         'I have read/torn up some books by them.'
     b.   Ik heb   een boek over de middeleeuwen$_{Theme}$ gelezen/verscheurd.
         I   have a book   about the Middle Ages   read/torn up
         'I have read/torn up a book about the Middle Ages.'
     b′. Ik heb <er> een boek <er> over gelezen/^{??}verscheurd.
         I   have there a book   about read/torn up
         'I have read/torn up a book about it.'

2.2.5.6.4. *Extraction of PP*

According to this test adjunct PPs cannot be extracted from noun phrases. That this also holds for noun phrases headed by a picture/story noun is illustrated by the

examples in (575), which involve topicalization of adjunct PPs introduced by, respectively, *met* 'with' and *uit* 'from'.

(575) a. Ik heb   twee schilderijen met een vergulde lijst gezien.
      I   have two paintings   with a gilded list   seen
a′. *Met een vergulde lijst heb ik twee schilderijen gezien.
b. Ik heb   vorige week een boek uit 1986   vertaald.
      I   have last week   a book   from 1986 translated
      'Last week I translated a book from 1986.'
b′. *Uit 1986 heb ik vorige week een boek vertaald.

I. Topicalization

Preposing the possessor *van*-PP of a picture or story noun always leads to unacceptable or, at best, questionable results. In example (576a), for instance, the preposed *van*-PP can only be interpreted as the theme or the agent of the picture noun. On the intended reading, the examples in (576b&c) are at best marginally acceptable on a contrastive reading.

(576) a. *Van Jan$_{Poss}$ heb   ik   een tekening gezien.
      of Jan   have I   a drawing   seen
b. ??Van JAN$_{Poss}$ heb   ik   een tekening van REMBRANDT$_{Agent}$ gezien.
      of Jan   have I   a drawing   of Rembrandt   seen
      'I have seen a drawing by Rembrandt belonging to Jan.'
c. ??Van JAN$_{Poss}$ heb   ik   een tekening van de WESTERTOREN$_{Theme}$ gezien.
      of Jan   have I   a drawing   of the Westertoren   seen
      'I have seen a drawing of the Westertoren belonging to Jan.'

In (577) we provide similar examples with the story noun *boek* 'book': in (577a), the preposed *van*-PP can only be interpreted as the agent (the author), not as the possessor of the book. Examples (577b&c) are again at best marginally acceptable on a contrastive reading.

(577) a. *Van Jan$_{Poss}$ heb   ik   een boek gelezen/verbrand.
      of Jan   have I   a book   read/burnt
b. ??Van JAN$_{Poss}$ heb   ik   een boek van HUIZINGA$_{Agent}$ gelezen/verbrand.
      of Jan   have I   a book   of Huizinga   read/burnt
c. ??Van JAN$_{Poss}$ heb   ik   HUIZINGA'S$_{Agent}$ BOEK gelezen/verbrand.
      of Jan   have I   Huizinga's book   read/burnt

Section 2.2.5.5 already came to the conclusion that PP-complements of picture/story nouns can be topicalized provided that the noun phrase is selected by a non-affective verb like *zien* 'to see'. However, several other factors apparently seem to influence the acceptability of extraction of the postnominal PPs in picture/story noun constructions: we will discuss the role of °focus, the choice of the determiner, and the presence of numerals/quantifiers or other arguments. Given that picture and story nouns exhibit more or less the same behavior we will discuss them simultaneously.

A. Focus constituents

Section 2.2.1.5 has discussed a number of contexts that may allow topicalization of (sometimes alleged) argument PPs in nominalizations that would otherwise not be eligible for this form of extraction. Similar exceptions seem to be found in the case of picture/story nouns. The examples in (578), for example, show that, when the fronted constituent has CONTRASTIVE or RESTRICTIVE focus, topicalization of apparently agentive *van*-PPs is even possible with affective verbs like *beschadigen* 'to destroy' or *verbranden* 'to burn'.

(578) a. Van REMBRANDT heb   ik een tekening beschadigd (niet van FRANS HALS).
          of Rembrandt   have I a drawing   damaged   not of Frans Hals
          'I've seen/damaged a drawing by Rembrandt (not by Frans Hals).'
      b. Van HUIZINGA heb   ik een boek verbrand (niet van PLEIJ).
          of Huizinga   have I   a book   burnt   not of Pleij
          'I have burnt a book by Huizinga (not by Pleij).'

The examples in (579) show, however, that the *van*-PPs should not be considered agents of the noun phrases given that we have seen that only independent PPs can be preceded by the negator *niet*, so that it is only the negated form of these independent PPs that can be topicalized. This suggests that we must conclude that the affective verbs can be combined with a restrictive adverbial phrase after all, provided at least that it is assigned contrastive focus.

(579) a. Niet van Rembrandt heb   ik een tekening beschadigd (maar van F. Hals).
          not of Rembrandt   have I   a drawing   damaged   but of Frans Hals
          'I've seen/damaged a drawing not by Rembrandt but by Frans Hals.'
      b. Niet van Huizinga$_{Agent}$ heb   ik een boek verbrand (maar van Pleij).
          not of Huizinga   have I   a book   burnt   but of Pleij
          'I have burnt a book not by Huizinga (but by Pleij).'

The impression that we are dealing with topicalization of the agent argument of the noun phrase is probably due to the fact that the restrictive adverbial phrase provides the context from which the identity of the agent can be deduced. Note that the unacceptability of the examples in (580) shows that a restrictive adverbial PP apparently does not succeed in making the theme of the noun phrase recoverable.

(580) a. *Niet van de Westertoren   heeft Jan een schilderij beschadigd
           not of the Westertoren   has   Jan a painting   damaged
           (maar van de Zuidertoren).
           but of the Zuidertoren
      b. *Niet over de middeleeuwen heeft Jan een boek verbrand
           not about the Middle Ages   has   Jan a book   burnt
           (maar over de Oudheid).
           but about the antiquity

B. The choice of determiner

The choice of determiner also seems to influence the acceptability of PP-topicalization. The contrast between some of the primeless and primed examples in (581) and (582) suggests that dependent PPs can be more easily extracted from

indefinite noun phrases than from definite ones and that, as a result, variation in the degree of acceptability of topicalized constructions occurs even between constructions with the same verb. The examples in (581) and (582) further illustrate that the difference in acceptability mainly show up with theme *van*/*over*-PPs, as in the (b)-examples; topicalization of agent *van*-PPs from the (a)-examples does not seem sensitive to the choice of determiner.

(581) a.　Van Rembrandt heb　ik　een prachtig schilderij/al veel schilderijen　gezien.
　　　　　of Rembrandt　have I　a beautiful painting/already many paintings seen
　　　a′.　Van Rembrandt　heb ik　het onlangs beschadigde schilderij gezien.
　　　　　of Rembrandt　have I　the recently damaged painting　　seen
　　　b.　Van de Amstel　heb　ik　een prachtig schilderij/veel schilderijen gezien.
　　　　　of the Amstel　have I　a beautiful painting/many paintings　　seen
　　　b′.　?Van de Amstel heb ik　gisteren　het onlangs beschadigde schilderij gezien.
　　　　　of the Amstel　have I　yesterday the recently damaged painting　　seen

(582) a.　Van Oliver Stone heb　ik　een spannende film/al drie films　gezien.
　　　　　of Oliver Stone　　have I　a exciting film/already three films seen
　　　　　'I have seen an exciting film/three films by/*?belonging to Oliver Stone.'
　　　a′.　Van Oliver Stone heb　ik　gisteren　de nieuwste film gezien.
　　　　　of Oliver Stone　　have I　yesterday　the newest film　seen
　　　　　'I saw the latest film by Oliver Stone yesterday.'
　　　b.　Over Nixon heb　ik　een spannende film/al drie films　　　gezien.
　　　　　about Nixon have I　a very exciting film/already three films　seen
　　　　　'I have seen a very exciting film/three films already about Nixon.'
　　　b′.　?Over Nixon　heb　ik　de nieuwste film (nog niet)　gezien.
　　　　　about Nixon have I　the newest film　not yet　　seen
　　　　　'I have (not yet) seen the latest film about Nixon.'

The contrast between agents/possessors and themes seems even clearer when the noun phrase contains a demonstrative determiner: the (a)-examples in (583) and (584) show that topicalization of the apparently agentive *van*-PP is possible, provided that the demonstrative noun phrase is given a contrastive or deictic reading; topicalization of the theme PP in the (b)-examples, on the other hand, yields a questionable construction, although contrastive emphasis on both the theme (*Westertoren*/*Nixon*) and the demonstrative (*dat*/*dit* 'that/this') may somewhat improve the result. Bear in mind that these differences are real but subtle.

(583) a.　Van Rembrandt heb　ik　DAT schilderij nog nooit　gezien.
　　　　　of Rembrandt　　have I　that painting　yet never　seen
　　　b.　??Van de AMSTEL　heb　ik　DAT schilderij nog nooit　gezien.
　　　　　of the Amstel　　have I　that painting　yet never　seen

(584) a.　Van Oliver Stone_{Agent} heb　ik　DIE film　(nog niet) gezien.
　　　　　of Oliver Stone　　　　have I　that film　not yet　　seen
　　　　　'I have (not yet) seen THAT film by Oliver Stone.'
　　　b.　??Over NIXON_{Theme} heb　ik　DEze film　al　　　gezien.
　　　　　about Nixon　　　have I　this film　already seen
　　　　　'I have already seen THIS film about Nixon.'

The apparent contrast between topicalization of the agent/possessor and the theme may be due to fact that only in the latter case are we dealing with a complement of the picture/story noun. That this is probably the case is clear from the fact, illustrated in the (a)-examples in (585) and (586), that the apparently agentive/possessive *van*-PP in initial position can be combined with a coreferential possessive pronoun. The unacceptability of the (b)-examples shows that in this case the *van*-PP cannot have been extracted from the noun phrase, as it cannot occur in what would have been its original position. Consequently, the *van*-PP must be regarded as a restrictive adverbial phrase.

(585) a. $^{(?)}$Van Rembrandt$_i$ heb   ik   zijn$_i$ laatste schilderij gezien.
　　　　　of Rembrandt　　　have I   his last painting　　　seen
　　b. *Ik heb　zijn$_i$ laatste schilderij van Rembrandt$_i$ gezien.
　　　　 I   have his last painting　　　of Rembrandt　　seen

(586) a. $^{(?)}$Van Oliver Stone$_i$ heb   ik   zijn$_i$ laatste film nog niet gezien.
　　　　　of Rembrandt　　　　have I   his last painting   not yet　　seen
　　b. *Ik heb　zijn$_i$ laatste film van Oliver Stone$_i$ nog niet gezien.
　　　　 I   have his last painting of Rembrandt　　　not yet　　seen

The idea suggested earlier that the restrictive adverbial phrase makes the agent of the noun phrase recoverable may also account for the somewhat marked status of the (a)-examples in (585) and (586); since the agent is contextually recoverable, explicit mention of it in the form of a possessive pronoun is not needed and may therefore be disfavored. On this account the degraded status of (581b′) and (582b′) may also fall out given that example (580) has already established that restrictive adverbial PPs do not readily succeed in making the theme of the noun phrase recoverable.

With affective verbs like *verbranden* 'to burn' and *vernietigen* 'to destroy', the possibilities for topicalization are far more restricted than with non-affective verbs. Only the apparent agent PP can be topicalized, and then only in constructions like (587a″) and (588a″), with a demonstrative determiner and on a highly contrastive reading. The contrast between the (a)- and (b)-examples in this respect again suggests that the topicalized phrase is actually not a dependent PP, but functions as a restrictive adverbial phrase.

(587) a. *Van Rembrandt heb ik een kostbaar schilderij/al drie schilderijen   vernietigd.
　　　　　of Rembrandt   have I a valuable painting/already three paintings destroyed
　　a′. *Van Rembrandt heb ik het onlangs herstelde schilderij vernietigd.
　　　　　of Rembrandt have I   the recently restored painting   destroyed
　　a″. Van Rembrandt heb ik DIT schilderij verNIEtigd (en een ANder beSCHAdigd).
　　　　　of Rembrandt have I   this painting destroyed   and some other damaged
　　b. *Van de Amstel heb ik een kostbaar schilderij/al drie schilderijen vernietigd.
　　　　　of the Amstel   have I   a valuable painting/already three paintings destroyed
　　b′. *Van de Amstel heb ik het onlangs herstelde schilderij vernietigd.
　　　　　of the Amstel   have I   the recently restored painting   destroyed
　　b″. *Van de Amstel heb ik DIT schilderij verNIEtigd (en een ANder beSCHAdigd).
　　　　　of the Amstel   have I   this painting destroyed   and some other damaged

(588) a. *Van Huizinga heb   ik   een heel saai boek/al drie boeken verbrand.
        of Huizinga   have I   a very dull/already three books   burnt
   a′. *Van Huizinga heb   ik   net het nieuwste boek verbrand.
         of Huizinga   have I   just the newest book   burnt
   a″. ?Van Huizinga heb   ik   DIT boek verBRAND (en alle ANdere verSCHEURD).
         of Huizinga   have I   this book burnt   and all others torn.up
   b. *Over de middeleeuwen   heb   ik   een heel slecht boek vertaald.
       about the Middle Ages   have I   a very bad book   translated
   b′. *Over de middeleeuwen   heb   ik   het nieuwste boek (nog niet) vertaald.
        about the Middle Ages   have I   the newest book   not yet   translated
   b″. *Over de middeleeuwen   heb   ik   DIT boek verBRAND
        about the Middle Ages   have I   this book burnt
       (en nog twee ANdere WEGgegooid).
       and yet two others thrown away

C. Numerals and quantifiers

Topicalization of *van/over*-PPs seems possible from noun phrases containing a quantifier or a numeral. The fact that topicalization of the agent and theme PPs is even possible in clauses with affective verbs like *beschadigen* 'to damage' and *vernietigen* 'to destroy', which normally do not allow PP-topicalization, strongly suggests that we are actually dealing with restrictive adverbial phrases in these cases. This is further supported by the contrast in acceptability between the (a)- and (b)-examples in (589) and (590); restrictive adverbial PPs do not readily succeed in making the theme of the noun phrase recoverable.

(589) a. Van Rembrandt zijn nu   al   veel/negen schilderijen beschadigd.
       of Rembrandt   are now already many/nine paintings   damaged
       'Various paintings (owned) by Rembrandt have by now been damaged.'
   b. ?Van de Amstel zijn nu   al   verschillende schilderijen beschadigd.
       of the Amstel   are now already various paintings   damaged
       'Various paintings of the Westertoren have by now been damaged.'

(590) a. Van Oliver Stone hebben we alle/drie films vernietigd.
       of Oliver Stone   have   we all/three films destroyed
       'We have destroyed all/three films by Oliver Stone.'
   b. ?Over Nixon   hebben we alle/drie films vernietigd.
       about Nixon have   we all/three films destroyed
       'We have destroyed all/three films about Nixon.'

D. Possessors and noun phrase-internal arguments

The examples in (591) show that the acceptability of examples with fronted PPs may also depend on the presence of a possessor; if present, preposing of the agent or theme PP is excluded. This need not come as a surprise given that these possessed noun phrases are definite, and definite noun phrases do not readily allow extraction. It is, however, not entirely clear what blocks the independent use of the fronted PP as a restrictive adverbial phrase.

(591) a. *Van Rembrandt_{Ag} heb ik Jans_{Poss} tekening gezien.
  of Rembrandt   have I Jan's   drawing seen
  'I have seen Jan's drawing of the Westertoren by Rembrandt.'

a′. *Van de Amstel_{Th} heb ik Jans_{Poss} tekening (van Rembrandt_{Agent}) gezien.
  of the Amstel   have I Jan's   drawing of Rembrandt   seen

b. *?Van Mulisch_{Agent} heb ik Jans_{Poss} boek gelezen.
  of Mulisch   have I Jan's   book read

b′. *Over de oorlog_{Theme} heb ik Jans_{Poss} boek gelezen.
  about the war   have I Jan's book read

We have seen earlier that the agent allows topicalization when it is the only argument present. The primed examples in (592) show that in the presence of a theme argument, topicalization of the agent PP is only acceptable in contrastive contexts.

(592) a. Van Rembrandt_{Agent} heb ik een prachtig schilderij gezien.
  of Rembrandt   have I a beautiful painting   seen
  'I have seen a beautiful painting by Rembrandt.'

a′. Van REMBRANDT heb ik een prachtig tekening van de AMSTEL gezien.
  of Rembrandt   have I a beautiful drawing of the Amstel seen
  'I have seen a beautiful drawing by REMBRANDT of the AMSTEL.'

b. Van Mulisch heb ik al   heel wat boeken   gelezen.
  of Mulisch   have I   already quite some books read
  'I have read quite some books by Mulisch already.'

b′. Van MULISCH heb ik een boek over de OORLOG gelezen.
  of Mulisch   have I a book about the war   read
  'I have read a book about the WAR by MULISCH already.'

We have also seen that the theme allows topicalization when it is the only argument present. The primed and doubly-primed examples in (593) show, however, that theme extraction in the presence of an agent PP is marked, even on a contrastive reading.

(593) a. Van de Amstel_{Theme} heb ik een prachtige tekening gezien.
  of the Amstel   have I a beautiful drawing   seen
  'Of the Amstel I have seen a beautiful drawing.'

a′. ??Van de AMSTEL heb ik een prachtige tekening van REMBRANDT_{Agent} gezien.
  of the Amstel   have I a beautiful drawing   of Rembrandt   seen
  'I have seen a beautiful drawing of the AMSTEL by REMBRANDT.'

a″. ??Van de AMSTEL heb ik REMBRANDTS_{Agent} prachtige tekening gezien.
  of the Amstel   have I Rembrandt's   beautiful drawing seen
  'I have seen REMBRANDT's beautiful drawing of the AMSTEL.'

b. Over de middeleeuwen_{Theme} heb ik heel wat boeken   gelezen/verscheurd.
  about the Middle Ages   have I   quite some books read/torn up

b′. ??Over de MIDDELEEUWEN heb ik een boek van HUIZINGA_{Agent} gelezen.
  about the Middle Ages   have I a book of Huizinga   read

b″. ??Over de MIDDELEEUWEN heb ik HUIZINGA's_{Agent} boek gelezen.
  about the Middle Ages   have I Huizinga's book   read

The need of a contrastive context and the difference in acceptability between the primed "agent" examples in (592), on the one hand, and the primed "theme" examples in (593), on the other, suggest again that the fronted PPs are not arguments of the noun but independent restrictive adverbial phrases.

E. Conclusion

The discussion in the previous subsections has shown that there may be various cases in which apparent PP-extraction from picture/story noun constructions actually involves topicalization of independent PPs. The only genuine cases of PP-extraction seem to involve indefinite noun phrases that are selected by non-affective verbs like *zien* 'to see'. The discussion of PP-extraction in the remainder of this section will therefore be restricted to such cases.

II. Relativization and questioning

This subsection will show that relativization and questioning point in the same direction as topicalization. Possessors resist extraction and therefore clearly function as adjuncts. Extraction of agent and theme seems possible at first sight but may in fact involve fronting of an independent restrictive adverbial phrase.

   The judgments on relativization and questioning of the possessor are perhaps less sharp than those on topicalization, but still the most salient readings of the primed examples in (594) are again those in which the *van*-PP refers to the agent or the theme. This suggests that possessors cannot be extracted and hence function as adjuncts.

(594) a. ??Dit is de vriend_{Poss} van wie ik een tekening heb gezien.
             this is the friend   of who I a drawing   have seen
             'This is the friend of whom I have seen a drawing.'
   a′. ??Van wie_{Poss} heb jij   een schilderij gezien?
             of who   have you a painting   seen
             'By whom have you seen a painting?'
   b. ??Dit is de vriend_{Poss} van wie ik een boek heb   vertaald.
             this is the friend   of who I a book   have translated
             'This is the friend of whom I have translated a book.'
   b′. ??Van wie_{Poss} heb jij   een boek vertaald?
             of who   have you a book   translated
             'Of whom have you translated a book?'

Relativization and questioning of the agent and the theme are readily possible when they are the only arguments present. The examples in (595) show that extraction of the agent does not seem sensitive to the presence of the theme argument.

(595) a.   De schilder_{Agent} van wie ik een schilderij (van de Amstel) heb gezien.
             the painter   of who I a painting   of the Amstel   have seen
             'This is the painter by whom I have seen a painting (of the Amstel).'
   a′.   Van wie_{Agent} heb jij   een schilderij (van de Amstel) gezien?
             of who   have you a painting   of the Amstel   seen
             'By whom have you seen a painting (of the Amstel)?'

  b.   de auteur_{Agent} van wie ik een boek (over WO II_{Theme}) heb   vertaald
        the writer   of who I a book   about WW II   have translated
        'the writer of whom I have translated a book (about WW II)'
  b′.   Van wie_{Agent} heb jij   een boek (over WO II_{Theme}) vertaald?
        of who   have you a book   about WW II   translated
        'Of whom have you translated a book (about WW II)?'

Relativization of the theme is more restricted in the sense that the results degrade considerably as soon as the agent is added; examples in which the agent appears in the form of a *van*-PP are perhaps slightly better than those in which it appears as a prenominal genitive noun phrase. The fact that the differences in judgments on the primeless examples in (595) and the primed examples in (596) resemble those on the primed examples in (592) and (593) suggests again that we may be dealing with independent restrictive adverbial phrases rather than with complements of the noun.

(596) a.   de jongen_{Theme} van wie ik een portret heb gezien
            the boy   of who I a portrait   have seen
      a′.   [?]de jongen van wie ik een portret van Rembrandt_{Agent} heb   gezien
            the boy   of who I   a portret   of Rembrandt   have seen
      a″.   *de jongen van wie ik Rembrandts_{Agent} portret heb   gezien
            the boy   of who I Rembrandt's   portret have seen
      b.   het onderwerp_{Theme} waarover   ik een boek heb   vertaald
            the subject   where-about I a book   have translated
            'the subject I have translated a book about'
      b′.   ^{??}het onderwerp waarover   ik een boek van Huizinga_{Agent} heb vertaald
            the subject   where-about I a book of Huizinga   have translated
            'the subject I have translated a book by Huizinga about'
      b″.   ^{*?}het onderwerp waarover   ik Huizinga's_{Agent} boek heb   vertaald
            the subject   where-about I Huizinga's book   have translated

The examples in (597) simply show that we find similar judgments in the case of questioning the theme. The differences in judgments on the primed examples in (595) and the primed examples in (597) resemble those on the primed examples in (592) and (593), which yet again suggests that we may be dealing with independent restrictive adverbial phrases rather than with complements of the noun.

(597) a.   Van welke jongen_{Theme} heb jij   een portret gezien?
            of which boy   have you a portrait   seen
      a′.   ^{??}Van welke jongen heb jij   een portret van Rembrandt_{Agent} gezien?
            of which boy   have you a portrait of Rembrandt   seen
      a″.   *Van welke jongen heb jij   Rembrandts _{Agent} portret gezien.
            of which boy   have you Rembrandt's   portret seen
      b.   Over welk onderwerp heb   jij   een boek vertaald?
            about which subject   have you a book   translated
            'About which subject have you translated a book?'
      b′.   ^{??}Over welk onderwerp heb   jij   een boek van Huizinga vertaald?
            about which subject   have you a book   of Huizinga   translated
      b″.   *Over welk onderwerp heb   jij   Huizinga's boek vertaald?
            about which subject   have you Huizinga's book translated

III. PP-over-V

PP-over-V does not seem a very good test for establishing the complement or adjunct status of the agent, theme and possessor, since the examples in (598) show that, under certain conditions, adjunct PPs also seem to allow PP-over-V in picture/story noun constructions. For the sake of completeness, we will nevertheless discuss the relevant constructions.

(598) a.   Ik heb een schilderij <met een vergulde lijst> gezien <met een vergulde lijst>.
           I   have a painting   with a gilded frame   seen
           'I have seen a painting with a gilded frame.'
      b. $^?$Ik heb   een boek < uit 1932> vertaald <uit 1932>.
           I   have a book   from 1932 translated
           'I have translated a book from 1932.'

PP-over-V of the possessor argument is possible in picture noun constructions like (599a), where the agent and the theme are absent. As soon as the theme or the agent is added the result degrades, as is shown by examples (599b&c), which are at best marginally possible on a non-appositive reading. When the agent argument is expressed in the form of a genitive noun phrase, as in example (599c′), PP-over-V of the possessor is entirely impossible. The examples in (600) give the corresponding story noun constructions.

(599) a.   Ik heb   een schilderij gezien/beschadigd van Jan$_{Poss}$.
           I   have a painting   seen/damaged   of Jan
           'I saw/damaged a painting of Jan's.'
      b. $^{??}$Ik heb   een schilderij van de Westertoren$_{Theme}$ gezien van Jan$_{Poss}$.
           I   have a painting   of the Westertoren   seen   of Jan
      c. $^{??}$Ik heb   een schilderij van Rembrandt$_{Agent}$ gezien van Jan$_{Poss}$.
           I   have a painting   of Rembrandt   seen   of Jan
      c′. *Ik heb   Rembrandts$_{Agent}$ schilderij gezien van Jan$_{Poss}$.
           I   have Rembrandt's painting   seen   of Jan

(600) a. $^?$Ik heb   een boek vertaald   van Jan$_{Poss}$.
           I   have a book   translated of Jan
      b. $^{??}$Ik heb   een boek over de middeleeuwen$_{Theme}$ vertaald   van Jan$_{Poss}$.
           I   have a book   about the Middle Ages   translated of Jan
      c. $^{??}$Ik heb   een boek van Huizinga$_{Agent}$ vertaald   van Jan$_{Poss}$.
           I   have a book   of Huizinga   translated of Jan
      c′. *Ik heb   Huizinga's$_{Agent}$ boek vertaald   van Jan$_{Poss}$.
           I   have Huizinga's   book translated of Jan

As is shown by (601), PP-over-V of the adjunct PPs in (598) is blocked under the same circumstances (unless the adjunct is given an appositive reading). This suggests that we may interpret the degraded status of the (b)- and (c)-examples in (599) and (600) as evidence for adjunct status of the possessor.

(601) a. $^{??}$Ik heb een schilderij van Rembrandt/van de Amstel gezien met een vergulde lijst.
      I have a painting of Rembrandt/of the Amstel   seen   with a gilded frame

  a′. $^{*?}$Ik heb Rembrandts schilderij gezien met een vergulde lijst.
      I have Rembrandt's painting seen   with a gilded frame

  b. $^{??}$Ik heb een boek van Huizinga/over de middeleeuwen vertaald   uit 1932.
      I have a book of Huizinga/about the Middle Ages   translated from 1932

  b′. *Ik heb   Huizinga's boek over de middeleeuwen vertaald   uit 1932.
      I have Huizinga's book about the Middle Ages translated from 1932

Example (602) shows that PP-over-V of the agent of a picture noun is possible both when the agent is the only argument or when it is accompanied by the theme, but impossible when the possessor is expressed, regardless of the form and position of the latter.

(602) a. Ik heb een schilderij (van de Westertoren$_{Theme}$) gezien van Rembrandt$_{Agent}$.
      I have a painting   of the Westertoren   seen   of Rembrandt

  b. *Ik heb een schilderij van Jan$_{Poss}$ gezien van Rembrandt$_{Agent}$.
      I have a painting   of Jan   seen of Rembrandt

  b′. *Ik heb Jans$_{Poss}$ schilderij gezien van Rembrandt$_{Agent}$.
      I have Jan's painting   seen of Rembrandt

Example (603a) shows that PP-over-V of the agent of a story noun is possible when it is the only argument expressed; when the theme is also present, the result seems grammatical although somewhat marked. When the possessor is expressed, the result is again highly questionable; the examples in (603b&b′) are only possible under an appositive reading of the agent.

(603) a. Ik heb   een boek ($^?$over de M.E.$_{Theme}$) vertaald   van Huizinga$_{Agent}$.
      I have an book   about the M.A.   translated of Huizinga

  b. *Ik heb   een boek van Jan$_{Poss}$ vertaald   van Huizinga$_{Agent}$.
      I have an book of Jan   translated of Huizinga

  b′. *Ik heb   Jans$_{Poss}$ boek vertaald   van Huizinga$_{Agent}$.
      I have Jan's   book translated of Huizinga

PP-over-V of the theme of a picture noun is acceptable if it is the only argument present, as in (604a), and somewhat marked when the agent is expressed in the form of a *van*-PP, as in (604b). Surprisingly, however, the result seems acceptable in the presence of an agentive or possessive genitive noun phrase, as in (604b′).

(604) a. Ik heb een schilderij gezien van de Westertoren$_{Theme}$.
      I have a painting   seen   of the Westertoren
      'I saw a/Rembrandt's painting of the Westertoren.'

  b. $^?$Ik heb een schilderij van Rembrandt$_{Agent}$ gezien van de Westertoren$_{Theme}$.
      I have a painting   of Rembrandt   seen   of the Westertoren
      'I saw a painting (owned) by Rembrandt of the Westertoren.'

  b′. Ik heb Rembrandts$_{Agent}$/Jans$_{Poss}$ schilderij gezien van de Westertoren$_{Theme}$.
      I have Rembrandt's/Jan's   painting   seen   of the Westertoren
      'I saw Rembrandt's painting of the Westertoren.'

The theme of a story noun behaves somewhat differently. Just like with the picture nouns, PP-over-V of the theme is possible when the theme is the only argument, and perhaps somewhat marked when the agent is expressed as a postnominal *van*-PP. However, when an agentive or possessive genitive noun phrase is present, the result is highly marked. This can be seen in (605b′).

(605) a. Ik heb een beroemd boek vertaald over de Middeleeuwen$_{Theme}$.
          I   have a famous book   translated about the Middle Ages
      b. $^{(?)}$Ik heb een boek van Huizinga$_{Agent}$ vertaald over Middeleeuwen$_{Theme}$.
          I   have a book of Huizinga   translated about the Middle Ages
      b′. $^{??}$Ik heb Huizinga's$_{Agent}$/Jans$_{Poss}$ boek vertaald over de Middeleeuwen$_{Theme}$.
          I   have of Huizinga's   book translated about the Middle Ages

Finally, extraposing both the theme and the agent/possessor of a picture noun is possible, but acceptability depends on the order of the extraposed elements: (606a) seems acceptable on a non-appositive reading, although an appositive reading of the theme is perhaps more favored (hence the question mark); example (606b), on the other hand, is unacceptable on a non-appositive reading — the only available reading is that with Rembrandt as the possessor of the Westertoren.

(606) a. $^{?}$Ik heb een schilderij gezien van Rembrandt$_{Ag/Poss}$ van de Westertoren$_{Th}$.
          I   have a painting   seen of Rembrandt   of the Westertoren
          'I saw a painting by Rembrandt of the Westertoren.'
      b. *Ik heb een schilderij gezien van de Westertoren$_{Th}$ van Rembrandt$_{Poss/Ag}$.
          I   have a painting   seen of the Westertoren   of Rembrandt
          'I saw a painting of the Westertoren by Rembrandt.'

Similarly, extraposing both the theme and the agent/possessor of a story noun is possible, again depending on the order of the extraposed elements: example (607a) is acceptable, although an appositive reading of the theme is more likely (hence the question mark); example (607b), with the theme preceding the agent, on the other hand, is unacceptable on a non-appositive reading — the only available reading is that with Huizinga as the possessor in a complex noun phrase *de middeleeuwen van Huizinga* referring to, e.g., the medieval period as described by Huizinga.

(607) a. $^{?}$Ik heb een boek vertaald van Huizinga$_{Agent/Poss}$ over de M.E.$_{Theme}$.
          I   have a book translated of Huizinga   about the M.A.
      b. *Ik heb een boek vertaald over de M.E.$_{Theme}$ van Huizinga$_{Agent/Poss}$.
          I   have a book translated about the M.A.   of Huizinga

IV. Scrambling

Judgments on scrambling of the possessor are again less sharp than those on topicalization. However, the most salient reading of the primeless examples in (608) is the one in which the *van*-PP refers to the agent. This is consistent with the fact that this example becomes completely unacceptable when we add the agent in the form of a postnominal *van*-PP or prenominal genitive noun phrase, as in the primed examples. From this we conclude that scrambling of possessors is impossible.

(608) a. $^{??}$Ik heb van Jan$_{Poss}$ een tekening (van de Westertoren$_{Theme}$) gezien.
I   have of Jan   a drawing   of the Westertoren   seen

a′. $^{??}$Ik heb van Jan$_{Poss}$ een tekening van Rembrandt$_{Agent}$ gezien.
I   have of Jan   a drawing   of Rembrandt   seen

a″. $^{*?}$Ik heb van Jan$_{Poss}$ Rembrandts$_{Agent}$ tekening   gezien.
I   have of Jan   Rembrandt's famous drawing seen

b. $^{??}$Ik heb van Jan$_{Poss}$ een boek (over de middeleeuwen$_{Theme}$) vertaald.
I   have of Jan   an book   about the Middle Ages   translated

b′. $^{*?}$Ik heb van Jan$_{Poss}$ een spannend boek van Huizinga$_{Agent}$ vertaald.
I   have of Jan   an exciting book   of Huizinga   translated

b″. *Ik heb van Jan$_{Poss}$ Huizinga's$_{Agent}$ boek vertaald.
I   have of Jan   Huizinga's book   translated

Scrambling of the agent leads to acceptable results when it is the only argument expressed or where it is accompanied by the theme, as in the primeless examples of (609). As is shown in the primed and doubly-primed example, however, scrambling of the agent is impossible when the possessor is expressed, regardless of the form and position of the latter.

(609) a. Ik heb   van Rembrandt$_{Agent}$ een tekening (van de Amstel$_{Theme}$) gezien.
I   have of Rembrandt   a drawing   of the Amstel   seen

a′. $^{*?}$Ik heb van Rembrandt$_{Agent}$ een tekening van Jan$_{Poss}$ gezien.
I   have of Rembrandt   a drawing   of Jan   seen

a″. *Ik heb   van Rembrandt$_{Agent}$ Jans$_{Poss}$ tekening gezien.
I   have of Rembrandt   Jan's drawing   seen

b. Ik heb   van Huizinga$_{Agent}$ een boek (over de M.E.$_{Theme}$) vertaald.
I   have of Huizinga   a book   about the M.A.   translated

b′. $^{*?}$Ik heb van Huizinga$_{Agent}$ een boek van Jan$_{Poss}$ vertaald.
I   have of Huizinga   a book of Jan   translated

b″. *Ik heb   van Huizinga$_{Agent}$ Jans$_{Poss}$ boek vertaald.
I   have of Huizinga   Jan's book   translated

Examples (610a) and (611a) show that scrambling of the theme leads to an acceptable (though slightly marked) result when the theme is the only argument expressed. When the agent or the possessor is also present, scrambling of the theme leads to questionable or unacceptable results, depending on the presence and form of the agent/possessor. This is shown in the (b)-examples.

(610) a. Ik heb van de Amstel$_{Theme}$ een heel beroemde tekening gezien.
I have of the Amstel   a very famous drawing   seen

b. $^{??}$Ik heb van de Amstel$_{Theme}$ Rembrandts$_{Agent}$ tekening gezien.
I have of the Amstel   Rembrandt's drawing   seen

b′. $^{*?}$Ik heb van de Amstel$_{Theme}$ Jans$_{Poss}$ tekening gezien.
I have of the Amstel   Jan's drawing   seen

b″. *Ik heb van de Amstel$_{Theme}$ Jans$_{Poss}$ tekening van Rembrandt$_{Agent}$ gezien.
I have of the Amstel   Jan's drawing   of Rembrandt   seen

(611) a.   Ik heb   over de M.E.$_{\text{Theme}}$ een erg beroemd boek vertaald.
           I   have about the M.A.   a very famous book   translated
      b. $^{??}$Ik heb   over de M.E.$_{\text{Theme}}$ Huizinga's$_{\text{Agent}}$ boek vertaald.
           I   have about the M.A.   Huizinga's   book translated
    b′. $^{*?}$Ik heb over de M.E.$_{\text{Theme}}$ Jans$_{\text{Poss}}$ boek vertaald.
           I   have about the M.A.   Jan's   book translated
   b″. *Ik heb   over de M.E.$_{\text{Theme}}$ Jans$_{\text{Poss}}$ boek van Huizinga$_{\text{Agent}}$ vertaald.
           I   have about the M.A.   Jan's   book of Huizinga   translated

     Unlike with PP-over-V, scrambling of more than one argument is impossible. This is illustrated in (612). Note that the primed examples are acceptable on the irrelevant reading in which the second *van*-PP functions as the modifier of the noun phrase embedded in the first *van*-PP. In (612a′) this leads to the unlikely interpretation of Rembrandt as the possessor of the Amstel, and in (612b′) to the more readily available reading "the Middle Ages as described by Huizinga".

(612) a. *Ik heb van Rembrandt$_{\text{Agent}}$ van de Amstel$_{\text{Theme}}$ een mooie tekening gezien.
           I have of Rembrandt   of the Amstel   a beautiful drawing seen
    a′. *Ik heb van de Amstel$_{\text{Theme}}$ van Rembrandt$_{\text{Agent}}$ een mooie tekening gezien.
           I have of the Amstel   of Rembrandt   a beautiful drawing seen
      b. *Ik heb van Huizinga$_{\text{Agent}}$ over de M.E.$_{\text{Theme}}$ een spannend boek vertaald.
           I have of Huizinga   about the M.A.   an exciting book   translated
    b′. *Ik heb over M.E.$_{\text{Theme}}$ van Huizinga$_{\text{Agent}}$ een spannend boek vertaald.
           I have about the M.A. of Huizinga   an exciting book translated

V. Conclusion

The results of the four tests for distinguishing between adjuncts and complements of the noun, summarized in Table 13, unequivocally show that possessors behave as adjuncts. The results for the agent *van*-PP point in the same direction: the first two tests clearly provide evidence against assuming complement status; the result of the R-pronominalization test are less clear given that the relevant cases can perhaps be reanalyzed as involving a restrictive adverbial phrase. The results of extraction test seem to indicate that we may be dealing with a complement of the noun (although it was shown that the PP-over-V test is probably not a very good test).

     The results for the theme argument are far from clear. The first test points in the direction of complement status in some but not all cases: whereas a picture nouns like *afbeelding* 'picture' must have a complement, other picture nouns like *tekening* 'picture' can readily be used without it. In the case of the story nouns, only noun referring to abstract content obligatory take a complement; nouns referring to the physical object do not. The second test is only relevant for the picture nouns given that story nouns do not take a *van*- but an *over*-PP, and even for the picture nouns the results are far from conclusive: although in neutral contexts using the theme PP in postcopular position is marked, the judgments are certainly not such that they constitute a firm fundament for assuming complement status. R-pronominalization is apparently possible, but the availability of the split pattern may indicate that we are in fact dealing with an independent restrictive adverbial phrase. Finally, the results of extraction tests 4A&B seem to indicate that we may be dealing with a complement of the noun.

Table 13: Picture/story nouns: results of the tests

	POSSESSOR		AGENT		THEME	
Test 1: PP obligatory	—	negative	—	negative	+/—	?
Test 2: Post-copular position	+	negative	+	negative	?/n.a	?/n.a
Test 3: R-pronominalization	—	negative	?	?	?	?
Test 4A: Topicalization	—	negative	+	positive	+	positive
Test 4B: Relativization/Questioning	—		+		+	
Test 4C: PP-over-V	+		+		+	
Test 4D: Scrambling	—		?		?	

2.2.6. Conclusion

This section has discussed complementation of nouns by means of noun phrases or PPs. There is only a restricted set of nouns that allow this kind of modification. Three classes were distinguished: (i) relational nouns, which are typically non-derived; (ii) nominalizations derived from verbs or adjectives; and (iii) picture/story nouns, which may be either derived or non-derived. To all these different types of nouns, we have applied the four tests described in Section 2.2.1 for distinguishing adjuncts from complements. On the whole, application of these tests has proved useful in gaining more insight in the status of the PPs accompanying these nouns, not in the least because in many cases the results are unexpected and the discussion provided us with interesting new material for further research. At the same time, the fact that it is often not possible to give a clear-cut answer to the question whether a certain constituent functions as an adjunct of as a complement raises the question of how real this distinction is.

Let us briefly evaluate the results of the tests. The first test concerning the obligatoriness of the PP is always somewhat problematic because the context plays a crucial role in deciding whether a certain element can or cannot be left out. By and large, however, intuitions seem to agree on which element should, in principle, always be present. The second test according to which complement *van*-PPs can be used as the predicate in a copular construction works quite well, but only distinguishes possessive *van*-PPs from other *van*-PPs. The third test concerning R-pronominalization also works quite well, but has the disadvantage of not being readily applicable to [+HUMAN] constituents. The results of the final test concerning PP-extraction are far from unequivocal; only topicalization seems to provide a more or less reliable indication of the status of the element in question.

As indicated before, the systematic application of these tests has revealed a number of other unexpected facts. First, there is a marked difference between arguments inherited from a verb that take the form of *van*-PPs (usually NP-themes in the related verbal constructions) and PPs introduced by other prepositions selected by the base verb. Second, it turns out there is large variation between the different types of deverbal nouns. One would expect the behavior of inherited arguments to be the same for all instances of nominalization, regardless of the type of nominalization and the preposition used. Yet, there is a clear difference between, for instance, ING-nominalizations and INF-nominalizations as far as the outcome of the tests is concerned. This seems to indicate that the degree of verbalness of the

constructions (the number of verbal features it exhibits) plays a role in the outcome of the tests, as ING-nominalizations are by far the most nominal and INF-nominalizations by far the most verbal of the deverbal nouns. Third, the tests work relatively well for theme arguments, but are not easily applicable to agent or recipient arguments. In particular it turns out that although the agent is an obligatory argument in the verbal domain, agents do not behave as obligatory complements in the nominal domain, even though in most cases the agent is implicitly present. Recipients behave more like themes, but their complement status is nevertheless less obvious.

2.3. Sentential complements

This section is concerned with sentential complements, that is, with those clausal elements within the noun phrase that are required by the semantics of the nominal head. Sentential complements typically occur with nouns that can be said to denote abstract content. These nouns can be derived from a verb, like *mededeling* 'announcement' and *vraag* 'question' in (613a&b), but may also be basic, like *risico* 'risk' in (613c).

(613) a. [De mededeling [dat Jan zou   komen]] kwam onverwacht.
        the announcement COMP Jan would come   came   unexpectedly
  b. [De vraag   [of/waarom Jan het geld   gestolen had]] kwam onverwacht.
        the question   whether/why Jan the money stolen had   came unexpectedly
  c. Wij lopen [het risico dat we   gepakt worden]].
        we   run   the risk   that we   caught are
        'We run the risk that we will be caught.'

The examples in (614) show that complement clauses can be finite or infinitival, depending on the selectional properties of the noun. Section 2.3.1 and 2.3.2 will discuss these two types of clausal complement in detail.

(614) a. [Het idee [dat hij direct   zou   vertrekken]] stond   ons wel aan.
        the idea   that he directly would leave   attracted us   PRT prt.
        'We quite liked the idea that he would leave immediately.'
  b. [Het idee [om direct   te vertrekken]] sprak   ons wel aan.
        the idea COMP immediately to leave   attracted us   PRT prt.
        'We quite liked the idea of leaving immediately.'

Complement clauses may sometimes be difficult to distinguish from relative clauses. Confusion may arise due to the fact that both types of clause can be introduced by what we may neutrally refer to as the "linker" *dat*: in complement clauses like (615a) the linker is the complementizer, and in relative clauses like (615b) it is the singular neuter relative pronoun. Section 2.3.3 will show how we can properly distinguish the two types of clause.

(615) a. [Het feit [dat$_{compl.}$ de aarde rond   is]], werd door niemand betwist.
         the fact   that   the earth round is   was by no.one   contested
         'The fact that the earth was round was contested by no one.'

b. [Het feit [dat~Rel.~ door niemand betwist werd]], is dat de aarde rond is.
   the fact that   by no.one   contested was is that the earth round is
   'The fact that was contested by no one is that the earth is round.'

2.3.1. *Finite clauses*

This section discusses finite sentential complements of nouns. Complement clauses are mostly selected by nouns that denote abstract content, and their function is to specify this content. This means that complement clauses are normally only found in combination with speech-act and proposition nouns: since these nouns are typically deverbal, complement clauses can normally be regarded as the inherited complement of the input verb, which immediately implies that the deverbal noun inherits the selectional properties of the base verb. We will discuss the speech-act nouns and the proposition nouns in separate subsections. After that we will show that there is a small set of non-derived nouns that may take a finite clause as their complement. Although it is disputable whether adjectives take clausal complements, we will conclude this section with a discussion of a number of deadjectival nouns.

I. *Deverbal speech-act nouns*

Speech-act nouns take the same kind of complement as their corresponding verb. Finite declarative clauses are always introduced by the complementizer *dat* 'that', just like declarative complement clauses of verbs.

(616) a. Hij deelde   mee [dat zij zou   komen].   [declarative clause]
      he   announced prt. that she shall come
    b. de mededeling   [dat zij zou   komen]   [declarative clause]
      the announcement that she shall come

The behavior of the interrogative complement clauses of the speech-act nouns is also completely on a par with the complements of the corresponding verbs: when the speech-act noun takes a *yes/no* question, the complementizer *of* 'whether' is used, and when the speech-act noun takes a *wh*-question, a *wh*-word is used.

(617) a. Ik vroeg [of   zij   zou   komen].   [*yes/no*-question]
      I   asked   whether she would come
   a′. de vraag   [of   zij   zou   komen]
      the question whether she would come
    b. Ik vroeg [waarom zij   vertrok].   [*wh*-question]
      I   asked   why   she left
   b′. de vraag   [waarom zij   vertrok]
      the question why   she left

Speech-act nouns denoting a request also take a complement introduced by the complementizer *of*, although it must be noted that the result is better with indirect requests (with the verb *vragen* 'to ask'), than with direct requests (with the *verzoeken* 'to request').

(618) a.　Ik　vroeg/$^?$verzocht　hem　[of　　het raam　　dicht　kon].　　　　[Request]
　　　　　I　asked/requested　him　whether the window　closed　could
　　　　　'I requested whether the window could be closed.'
　　 b.　de vraag/$^?$het verzoek　[of　　het raam　　dicht　kon]
　　　　　the question/request　　whether the window　closed　could

　　The examples above therefore show that all the properties of the complements of the corresponding verbs can be found in these examples. The examples in (619) show that this includes the fact found in colloquial speech that embedded *wh*-clauses may contain the complementizer *of (dat)* after the *wh*-phrase.

(619) a.　de vraag　　[wie　(of (dat))　er　　morgen　　komt]
　　　　　the question　who　COMP　　there tomorrow　comes
　　　　　'the question who will com tomorrow'
　　 b.　de vraag　　[wat　(of (dat))　ik　lekker　vind]
　　　　　the question　what　COMP　　I　nice　　find
　　　　　'the question what I like'
　　 c.　de vraag　　[waar　(of (dat))　hij　woont]
　　　　　the question　where　COMP　　he　lives
　　　　　'the question where he lives'

When the complement clause is a *wh*-question and the content of the proposition is (partly) recoverable from the context it is often possible to reduce the clause to the constituent containing the *wh*-element (so-called sluicing). This again holds both for the input verb and the derived noun.

(620) a.　Ik　vroeg　[waarom ~~zij　vertrok~~].
　　　　　I　asked　why　　she　left
　　 a'.　de vraag　　[waarom ~~zij　vertrok~~]
　　　　　the question　why　　she　left
　　 b.　Jan vroeg　[welk boek ~~hij　moet　lezen~~]
　　　　　Jan asked　which book he　must　read
　　 b'.　de vraag　　[welk boek ~~hij　moet　lezen~~]
　　　　　the question　which book he　must　read

Speech-act verbs can sometimes appear with a main clause as a direct quote. Again, this property is inherited by the speech-acts nouns; the examples in (621) show that the felicitousness of the result largely depends on the property of the base verb.

(621) a.　$^?$Hij deelde　　mee: "Zij komt".　　　　　　　　　　[declarative]
　　　　　he　announced　prt.　"she will come"
　　 a'.　$^{??}$de mededeling　"Zij komt"
　　　　　the announcement "she will come"
　　 b.　Ik　vroeg:　"Komt zij?".　　　　　　　　　　　[*yes/no*-question]
　　　　　I　asked　"Will she come?"
　　 b'.　de vraag　　"Komt zij?"
　　　　　the question　"Will she come?"
　　 c.　Ik　vroeg: "Waarom vertrekt zij?"　　　　　　　　[*wh*-question]
　　　　　I　asked　"Why does she leave?"

c′. de vraag   "Waarom vertrekt zij?"
    the question   "Why does she leave?"

d. Ik vroeg/$^{??}$verzocht: "Kan het raam dicht?".   [request]
    I   asked/request   "Can the window be closed?"

d′. de vraag/$^{??}$het verzoek   "Kan het raam dicht?"
    the question/the request "Can the window be closed?"

The findings of the discussion so far are summarized in Table 14. All speech-act nouns may take a finite complement in subclause order; as with the corresponding verbs, declarative clauses are introduced by the complementizer *dat* 'that', whereas all other clause types are introduced by *of* 'whether'. The acceptability of a clausal complement in main clause order depends on whether the input verb can take a direct quote as its complement.

Table 14: Finite complement clauses of speech-act nouns

		SUBCLAUSE		MAIN CLAUSE	
		POSSIBLE	EXAMPLE	POSSIBLE	EXAMPLE
declarative		+	(616a)	??	(621a)
question	*yes/no*	+	(616b)	+	(621b)
	Wh-word	+	(616c)	+	(621c)
request/order		+/?	(621d)	+/??	(621d)

For some speakers, the clausal complement of speech-act nouns can be preceded by the preposition *van* 'of' (cf. English *the question of who* ...). The (a)- and (b)-examples in (622), which are taken from the internet, illustrate this for respectively declarative and interrogative clauses. Especially examples like (622b′) with an interrogative clause introduced by a *wh*-word seem common.

(622) a. $^{\%}$een mededeling   van dat ik geen verbinding met de server kan maken
      an announcement of   that I   no connection   to the server   can make
      'an announcement that I cannot connect to the external computer'

    b. $^{\%}$de vraag   van of   hij werkelijk denkt dat dit hem zal helpen
      the question of   whether he really   thinks that this him will help

    b′. $^{\%}$de vraag   van wie er   gaat betalen
      the question of   who there goes pay
      'the question who is going to pay'

The occurrence of *van* perhaps simply reflects the fact that postnominal themes are normally introduced by means of the functional preposition *van*. However, there may be more going on given that the clausal complement of nouns like *bewering* can also be preceded by *als*, which is again illustrated by means of an example taken from the internet. To our knowledge structures like (622) and (623) have not been investigated so far, and we therefore leave them to future research.

(623) $^{\%}$jouw bewering als dat er   geen onderzoek meer   mag gebeuren
      your assertion ALS that there no research   anymore allow happen
      'your assertion that research should no longer be allowed'

II. Deverbal proposition nouns

A proposition noun like *verwachting* 'expectation' takes a declarative clause introduced by the complementizer *dat* 'that', just like the verb *verwachten* 'to expect'.

(624) a. Ik verwacht [dat zij   zal komen].
           I expect   that she will come
      b. de verwachting [dat zij   zal komen]
          the expectation that she will come

    Sometimes complement clauses follow nouns that are normally used as state-of-affairs nouns, such as *ontdekking* 'discovery' in (625): (625a′) illustrates its normal use as a state-of-affairs noun, in which it refers to the event of discovering something; (625b) illustrates its more special use as a proposition noun, in which the complement clause specifies the nature of the discovery. This means that the noun *ontdekking* is ambiguous, not only in meaning but also with regard to the type of entity denoted, just like the corresponding verb *ontdekken* 'discover'; see Section 1.3.1.3.1 for a more extensive discussion of ING-nouns.

(625) a. Willem Janszoon ontdekte   Australië al   in 1605.
           Willem Janszoon discovered Australia already in 1605
           'Willem Janszoon already discovered Australia in 1605.'
      a′. De ontdekking van Australië vond al   in 1605 plaats.
           the discovery of Australia   took already in 1605 place
           'The discovery of Australia took place in 1605.'
      b. Men ontdekte   in de 15e eeuw   dat de aarde rond is.
           one discovered in the 15th century that the earth round is
           'It was discovered in the 15th century that the earth is round.'
      b′. De ontdekking dat de aarde rond is   dateert uit de 15e eeuw.
           the discovery   that the earth round is dates   from the 15th century
           'The discovery that the earth is round dates from the 15th century.'

That it is, indeed, the type of derived noun that determines whether complementation by means of a clause is possible is shown by the fact illustrated in (626a&b) that concrete deverbal nouns like *ontdekker* 'discoverer' cannot take a clausal complement; despite the fact that it is also derived from the verb *ontdekking*, the ER-noun can only take the original theme argument in the form of a PP or a genitive noun phrase, as shown by (626a′&b′); cf. Section 2.2.3.1. Note that some speakers accept the variant of example (626b) with the preposition *van* introducing the clausal complement, but such constructions probably involve ellipsis of the noun phrase *het feit* 'the fact'.

(626) a. de ontdekker van Amerika/Amerika's ontdekker
          the discoverer of America/America's discoverer
      b. *de ontdekker dat de aarde rond is
          the discoverer that the earth round is
      b′. de ontdekker van %(het feit) dat de aarde rond is
          the discoverer of the fact   COMP the earth round is
          'the discoverer of the fact that the earth is round'

III. Non-derived nouns

There are only a few instances of complement clauses following head nouns that are not derived, that is, where the head noun is a relational noun (cf. Section 1.2.3) whose argument takes the form of a clause. Some examples are given in (627).

(627) a.   Het idee dat zij gauw zou komen,   vrolijkte hem op.
          the idea that she soon would come cheered him up
          'The idea that she would come soon cheered him up.'

      b.   Het feit dat de kandidaat een vrouw was, speelde geen rol.
          the fact that the candidate a woman was   played no role
          'The fact that the candidate was a woman didn't play a role.'

      c.   Het probleem dat het programma steeds vastloopt, is niet te verhelpen.
          the problem   that the program   all the time jams is not to remedy
          'The problem that the program keeps jamming can't be helped.'

      d.   Het gevaar/de kans   dat het plan mislukt, blijft   bestaan.
          the danger/the chance that the plan fails   remains exist
          'The danger/chance that the plan fails will remain.'

      e.   Het risico dat hij betrapt zou worden, wilde   hij niet lopen.
          the risk   that he caught would be   wanted he not run
          'He didn't want to run the risk of being caught.'

For some speakers, use of *van* preceding the clause is (marginally) possible in spoken language: (628a) illustrates this by means of an example adapted from the internet.

(628) a.   het idee van dat hij waarschijnlijk eerder sterft dan ik
          the idea of   that he probably   sooner dies than I
          'the idea that he will probably die before me'

      b.   het risico van dat het niet meer steriel zou   zijn
          the risk   of   that it no longer sterile would be
          'the risk that it would no longer be sterile'

    Another special (but common) construction can be found in (629), which is very productive with nouns like *gerucht* 'rumor' and *stelling* 'thesis' (as well as with derived speech act nouns like *bewering* 'contention' and proposition nouns like *verwachting* 'expectation'). By using this construction, the speaker expresses doubt as to the truth or the correctness of the claim contained in the complement clause. The construction is characterized by the remarkable fact that the dependent clause has main clause order: the finite verb occupies the second position of the clause. Further, the finite verb is preceded by the element *als*, and must be a past tense form (possibly an old subjunctive) of the modal verb *zullen* 'will'.

(629) a.   het gerucht als zou   er   leven zijn op Mars
          the rumor   as would there life   be   on Mars
          'the rumor that there would be life on Mars'

      b.   de stelling als zou   slaan minder erg zijn dan schelden
          the thesis as would hitting less   bad be   than scolding
          'the thesis that hitting would be less bad than scolding'

IV. Deadjectival nouns

Adjectives sometimes seem to take a clausal complement due to the fact that the °anticipatory pronominal PP *er* + P can often be left unpronounced; illustration of this is given in the (a)-examples of (630) and (631). It seems that the corresponding deadjectival nouns do not inherit the complement of the input adjective: the primeless (b)-examples are definitely marked without, and completely unacceptable with, an anticipatory pronominal PP. The primed (b)-examples show, however, that such constructions are possible (although slightly marked) when the clause follows the preposition. It still remains to be seen whether we are dealing here with a preposition complemented by a clause, which would imply that inheritance is possible after all, or whether we are dealing with ellipsis of a proposition noun phrase like *het feit* 'the fact'.

(630) a.   Jan is (er)   boos   (over) dat Peter niet uitgenodigd is.
            Jan is there angry about   that Peter not invited is
            'Jan is angry because Peter hasn't been invited.'
       b.   Jans boosheid $^{??}$(*erover)   dat Peter niet uitgenodigd is
            Jan's anger   there-about that Peter not invited is
       b′. Jans boosheid over $^?$(het feit) dat Peter niet uitgenodigd is
            Jan's anger   about   the fact that Peter not invited is

(631) a.   Jan is (er)   tevreden (over) dat Peter uitgenodigd is.
            Jan is there satisfied about   that Peter invited is
            'Jan is pleased because Peter has been invited.'
       b.   Jans tevredenheid $^{??}$(*erover)   dat Peter uitgenodigd is
            Jan's satisfaction there-about that Peter invited is
       b′. Jans tevredenheid over $^?$(het feit) dat Peter uitgenodigd is
            Jan's satisfaction about   the fact that Peter invited is

The suggestion that the doubly-primed examples in (630) and (631) involve ellipsis seems to be supported by the fact, illustrated in (632b&b′), that interrogative clausal complements cannot be part of the prepositional phrase. Example (632b′) can be saved to some extent, however, by adding the noun phrase *de vraag*, since in that case it is the content noun *vraag* which functions as the complement of the preposition *naar*, with the interrogative clause functioning as the complement of the noun *vraag*.

(632) a.   Jan is (er)   nieuwsgierig (naar) of Peter uitgenodigd is.
            Jan is there curious   to   whether Peter invited is
            'Jan is curious whether Peter has been invited.'
       b.   *Jans nieuwsgierigheid (ernaar) of Peter uitgenodigd is
            Jan's curiosity   there-to whether Peter invited is
       b′. Jans nieuwsgierigheid   naar *($^{??}$de vraag) of Peter uitgenodigd is
            Jan's curiosity   to the question   whether Peter invited is

The (high degree of) unacceptability of clausal complements with deadjectival nouns follows from the overall generalization that clauses referring to a proposition can only follow a certain group of nouns, namely those that denote abstract content:

in the case of deadjectival nouns, the clause does not specify the contents of the head noun, but instead serves to indicate the cause or source of the property or emotion in question.

2.3.2. *Infinitival clauses*

This section discusses infinitival sentential complements of nouns. We will see that this option is more or less restricted to non-declarative speech-act nouns, and an extremely small set of non-derived nouns.

I. Deverbal speech-act nouns

Some, but not all, speech-act nouns can also be followed by an infinitival complement clause, which is sometimes optionally introduced by the complementizer *om*. Table 15 gives an indication of the possibilities.

Table 15: Infinitival complement clauses of speech-act nouns

NOMINAL HEAD	COMPLEMENT
declaratives: *mededeling* 'announcement'	—
yes-no questions: *vraag* 'question'	—
wh-questions: *vraag* 'question'	*de vraag hoe het probleem op te lossen* 'the question of how to solve the problem'
requests/suggestions/orders: *verzoek* 'request'	*het verzoek* (*om*) *te* (*mogen*) *vertrekken* 'the request to be (allowed to) leave'
wishes, ideas, suggestions: *advies* 'advice'	*het advies* (*om*) *te blijven* 'the advice to stay'

The primed examples in (633) show that declarative speech-act nouns do not readily accept infinitival complement clauses. Note that °PRO stands for the implied subject of the infinitival clause.

(633)   • Declarative clauses
      a.   Jan verklaarde [PRO onschuldig te zijn]
           Jan declared   innocent   to be
      a′. ??de verklaring [PRO onschuldig te zijn]
           the statement   innocent   to be
      b.   Jan deelde   mee [PRO morgen   al   te vertrekken]
           Jan announced prt.   tomorrow already to leave
      b′. ??de mededeling   [PRO morgen   al   te vertrekken]
           the announcement   tomorrow already to leave

    As far as questions are concerned, it is only *wh*-questions that can be realized as an infinitival complement clause, which is simply a reflex of the fact that speech act verbs do not take infinitival *yes/no* questions either. The lack of embedded infinitival *yes/no*-questions may be due to the fact that there is no linker that can mark infinitival clauses as questions, that is, whereas the complementizer *of* 'whether' can be used to formally mark a finite clause as an embedded yes/no-

question, such a specialized marker is lacking for infinitival clauses: the only complementizer-like element is *om*.

(634)   • *Yes/no-*questions
    a. *de vraag   [(om) PRO te komen]
        the question COMP   to come
    b. *de vraag   [(om) PRO het boek te lezen]
        the question COMP   the book to come

Speech-act verbs like *vragen* 'to ask' do take infinitival *wh-*questions: *Jan vroeg [PRO wat te doen]* 'Jan asked what to do', which is probably related to the fact that the complement is now explicitly marked as a question by the *wh-*phrase in clause-initial position. Example (635) shows that the speech-act noun *vraag* can also take infinitival *wh-*questions as its complement. Note that the implied subject PRO can either receive an arbitrary interpretation or (optionally) be construed as coreferential with (a referent set containing) the agent of the speech-act noun.

(635)   • *Wh-*questions
    a. de/zijn$_i$ vraag   [wat PRO$_{arb/i}$ te doen]
        the/his question what   to do
    b. de/zijn$_i$ vraag   [wie PRO$_{arb/i}$ in vertrouwen te nemen]
        the/his question who   in confidence to take
        'the question of who to take into confidence'

Dependent *wh-*clauses seem restricted given that *wh-*phrases with an adverbial function normally give rise to a marked result. A notable exception is *hoe* 'how', which appears very frequently in this construction; we found 432 different instantiations of the string *[de vraag hoe te]* on the internet. For comparison, we want to mention that we found less then twenty relevant instantiations of the string *[de vraag wanneer te]*, and no relevant instantiations of the string *[de vraag waarom te]*. The examples in (636a&b) are taken form the internet; (636c) is a constructed example.

(636)   • Adverbial *wh-*phrases
    a. de vraag   [hoe PRO te overleven]
        the question how   to survive
    b. de vraag   [wanneer PRO te zaaien en te oogsten]
        the question when   to sow and to harvest
    c. $^{??}$de vraag   [waarom PRO te vertrekken]
        the question why   to leave

The same thing holds for interrogative pronominal PPs of the form *waar* + P. We searched the internet for the strings [*de vraag waar+P te*] for the prepositions *op*, *in* and *over*, and for each case we had fewer than 5 hits, which all involved the same verb. The relevant examples are given in (637).

(637) • Speech-act nouns (interrogative pronominal PPs)
    a.   de vraag   [waarop PRO te letten   bij brand]
        the question what-on   to take.care.of in.case.of fire
        'the question what you should give extra attention in case of fire'
    b.   de vraag   [waarin PRO te investeren]
        the question where-in   to invest
        'the question what to invest in'
    c.   de vraag   [waarover PRO te schrijven]
        the question where-about   to write
        'the question what to write about'

The facts in (635) to (637) again seem to reflect more or less what we find in the verbal domain, so we may conclude that we are dealing here with inherited arguments. It therefore does not come as a surprise that speech-act nouns derived from verbs denoting the act of asking permission or giving directions readily accept infinitival complements, given that these verbs are typically combined with infinitival clauses. In (639), the implicit subject PRO is interpreted as identical to, respectively, the agent and the goal of the speech-act noun (which may both be left implicit), just as it would be construed as coreferential with, respectively, the agent and the goal of the corresponding verb.

(638) • Requests and orders
    a.   het/Jans$_i$ verzoek [(om) PRO$_i$ toegelaten te worden]
        the/Jan's request COMP   admitted   to be
        'the request to be admitted'
    b.   het bevel (aan Jan$_i$) [(om) PRO$_i$ direct   te vertrekken]
        the order to Jan COMP   immediately to leave
        'the order to leave immediately'

Just as the verb *vragen* 'to ask' can readily be used with the same function as *verzoeken* 'to request' and *bevelen* 'to order', the derived noun *vraag* 'question' can be used with the same function as *verzoek* and *bevel*. It differs from these nouns, however, in that it requires explicit mention of the antecedent of the implied subject PRO.

(639) a.   Jans$_i$/$^?$de vraag [(om) PRO$_i$ te mogen   vertrekken]
        Jan's/the question   COMP to be.allowed leave
        'Jan's/the question to be allowed to leave'
    b.   de vraag $^?$(aan Jan$_i$) [(om) PRO$_i$ te vertrekken]
        the question   to Jan COMP   to leave
        'the question (to Jan) to leave'

Nouns derived from speech-act verbs like *adviseren* 'to advise' or *verzekeren* 'to assure' also give rise to a fully acceptable result. In (640a) the implicit PRO subject is coreferential with the implied agent of the noun phrase, which in turn is coreferential with the subject of the clause; the complementizer *om* must be omitted, just like in the corresponding verbal construction. In (640) the implicit PRO subject is coreferential with the goal of the speech-act noun.

(640)   • Non-factual speech-act nouns

    a.   Jan$_i$ gaf ons de PRO$_i$ verzekering [PRO$_i$ voorzichtig te zullen zijn].
        Jan gave us   the assurance   careful   to will   be

    b.   het advies aan Jan$_i$ [(om) PRO$_i$ voorzichtig te zijn]
        the advice to Jans COMP   careful   to be
        'the advice to Jan to be careful'

II. Proposition nouns

As declarative speech-act nouns, proposition nouns denoting statements or facts seem to give rise to a marked result when they take an infinitival complement.

(641)   • Proposition nouns (facts, beliefs)

    a. $^{(?)}$Jan veronderstelde [PRO niet te kunnen komen]
        Jan supposed   not to be.able come
        'Jan supposed that he would not be able to come.'

    a′. $^{*?}$de veronderstelling [PRO niet te kunnen komen]
        the supposition   not to be.able come

    b.   Jan nam aan [PRO direct   te kunnen beginnen]
        Jan assumed   directly to be.able begin
        'Jan assumed that he could begin immediately.'

    b′. $^{??}$de aanname   [PRO direct   te kunnen beginnen]
        the assumption   directly to be.able begin

III. Non-derived nouns

There is a very small set of non-derived nouns that can take an infinitival complement. A typical example is the noun *idee* 'idea' in (642a): the implicit PRO argument can be interpreted arbitrarily or refer to the agent/possessor of the idea. Another potential case is *wens* 'wish' in (642b), provided that one accepts that this noun is non-derived and can be used as input for deriving the verb *wensen* 'to wish' instead of the relation being the other way round.

(642) a.   het/mijn$_i$ idee [$^?$(om) PRO$_{arb/i}$ opnieuw te beginnen]
         the   idea COMP   afresh   to begin
         'the idea to start afresh'

     b.   de/mijn$_i$ wens [(om) PRO$_{arb/i}$ gelukkig te zijn]
         the/my wish COMP   happy   to be
         'the wish to be happy'

The fact that the noun *feit* 'fact' in (643) cannot be combined with an infinitival clause shows that not all non-derived nouns that take a finite clause can take an infinitival clause. The difference between (642a&b), on the one hand, and (643b), may be related to factivity: infinitival clauses cannot be factive. This would fit in nicely with the earlier observation that declarative speech-act and proposition nouns cannot take infinitival complements either.

(643) a.   het feit [dat we de maan   kunnen bereiken/hebben bereikt]
         the fact that we the moon can reach/have reached

     b. *het feit [(om) PRO de maan te kunnen bereiken/te hebben bereikt]
         the fact COMP   the moon to can reach/to have reached

IV. Deadjectival nouns

Although some adjectives allow infinitival complements, these complements are not necessarily inherited by the deadjectival noun. Example (644) provides some examples of such clausal complements. As in the case of finite complement clauses (see examples (630) and (632)), the unacceptability of complement clauses with deadjectival nouns can be accounted for by the fact that these nouns do not denote abstract content.

(644) a.   Jan is (er) boos   (over) [PRO niet uitgenodigd te zijn].
           Jan is there angry   about   not invited   to be
      a′. *Jans   boosheid   (erover) [PRO niet uitgenodigd te zijn]
           Jan's crossness there-about   not invited   to be
      b.   Peter is (er) zeker (van) [PRO de beste te zijn].
           Peter is there certain of   the best to be
      b′. *Peters zekerheid (ervan) [PRO de beste te zijn]
           Peter's certainty there-of   the best to be

Consider in this respect also the pairs of sentences in (645). As is shown in (645a), the adjective *bang* 'afraid' may take an infinitival complement, preferably introduced by *om*. However, the deadjectival noun *bangheid* 'fear' in (645a′), though acceptable without a complement, cannot inherit the clausal complement. In the case of the near-synonym *angst(ig)*, on the other hand, the reverse is true. Here, the denominal adjective *angstig* 'afraid' in (645b) cannot take a clausal complement. The basic noun *angst* 'fear' in (645b′), however, is a (relational) proposition noun that does accept an infinitival complement clause. Finally, there are cases like the 9c)-examples in (645), where both the adjective and the derived noun accept an infinitival complement.

(645) a.   Jan is bang   [(om) PRO ontslagen te worden].
           Jan is afraid COMP   dismissed to be
      a′. *Jans   bangheid [om PRO   ontslagen te worden].
           Jan's fear   COMP   dismissed to be
      b. *Jan is angstig [om PRO ontslagen te worden].
           Jan is afraid   COMP   dismissed to be
      b′. Jans   angst [(om) PRO ontslagen te worden]
           Jan's fear COMP   dismissed to be
      c.   Jan is vastberaden [(om) PRO de wedstrijd te winnen].
           Jan is determined COMP   the match   to win
      c′. Jans vastberadenheid [(om) PRO de wedstrijd te winnen]
           Jan's determination   COMP   the match   to win

2.3.3. Differences between clausal complements and relative clauses

Clausal modifiers within the noun phrase can be divided into complement and relative clauses, for which we will occasionally use the abbreviations CC and RC. Despite the fact that the two types of clauses fulfill different functions, they may sometimes be difficult to distinguish. This is due to the fact that, although not entirely identical in form, both complement and relative clauses can take the form

of a (restrictive) *dat*-clause. This is illustrated in (646): in (646a) we are dealing with a complement *dat*-clause that defines the contents of the proposition noun *feit* 'fact', whereas in (646b) we are dealing with a relative *dat*-clause that serves to identify the particular fact in question and enables the addressee to pick out the intended referent from a potential set of facts.

(646) a. Het feit [_{CC} dat de aarde rond   is], werd door niemand betwist.
           the fact   that the earth round is   was by no.one   contested
           'The fact that the earth was round was contested by no one.'
      b. Het feit [_{RC`} dat door niemand betwist   werd], is dat de aarde rond   is.
           the fact   that by no.one   contested was   is that the earth round   is
           'The fact that was contested by no.one is that the earth is round.'

Although different types of analysis are available, we will assume for the sake of concreteness that the two types of clause occupy different positions within the noun phrase: complement clauses occur closest to the nominal head, whereas restrictive relative clauses adjoin at some higher level. The representations in (647) and (648) demonstrate the different positions within the noun phrase; the abbreviations COMP and REL stand for, respectively, complementizer and relative pronoun (cf. Section 2.3.3.2). The next two sections will subsequently discuss the relevant differences in function and form between complement and relative clauses.

(647) • Complement clause

      a.   D   [_{NP} N   [_{CC}   COMP   ...   ]]
      b.   het   [_{NP} feit   [_{CC}   dat   de aarde   rond   is]]
           the   fact   that   the earth   round   is
           'the fact that the earth is round'

(648) • Restrictive relative clause

      a.   D   [_{NP} N]_i   [_{RC}   REL_i   ...   ]
      b.   de   [_{NP} fiets]_i [_{RC}   die_i   Jan kocht]
           the   bike   that   Jan bought

2.3.3.1. Differences in function

Section 1.2.2.2 has shown that complement clauses specify the contents of the noun, and can therefore only follow proposition or speech-act nouns. These complement clauses are normally obligatorily selected, or at least semantically implied, by these nouns. Some examples are given again in (649).

(649) a. de veronderstelling [dat er   leven is op Mars]_{Theme}   [proposition noun]
           the supposition   that there life   is on Mars
           'the supposition that there is life on Mars'
      b. de bewering dat de aarde rond   is   [speech-act noun]
           the assertion that the earth round is
           'the assertion that the earth is round'

Restrictive relative clauses, on the other hand, can be used to modify any type of noun, whether basic or derived, abstract or concrete. Examples are given in (650).

(650) a.   het boek dat ik gisteren   gekocht heb
            the book that I   yesterday bought have
            'the book that I bought yesterday'
     b.   de gebeurtenis die vanmorgen   plaatsvond
            the event   that this morning took.place
            'the event that took place this morning'
     c.   het feit   dat door niemand in twijfel werd getrokken
            the fact that by no.one   in doubt was   drawn
            'the fact that was contested by no one'
     d.   het verzoek dat door de werknemers werd gedaan
            the request that by the employees   was   done
            'the request that was made by the employees'

Like complement clauses, relative clauses may sometimes be required in order to arrive at a felicitous result. The reason for this is, however, different for the two types of construction. In the case of complement clauses, it is the semantics of the proposition/speech-act noun that requires the presence of a complement clause, which is clear from the fact that a complement clause in the primeless examples in (651) can only be left out when its content is retrievable from the context. This is also consistent with the fact illustrated by the primed examples that the noun phrases cannot be used as all-new statements, as indicated by the fact that the indefinite article cannot be used.

(651)   • Complement clauses
     a. #Niemand betwijfelde het feit.   a′. *Niemand betwijfelde een feit.
        no.one   doubted   the fact   no.one   doubted   a fact
     b. #Jan begreep   de vraag.   b′. *Jan begreep   een vraag.
        Jan understood the question   Jan understood a question

Restrictive relative clauses, on the other hand, are not thus required. The function of the relative clause is to provide information needed to identify the referent of the antecedent. When the antecedent is a definite noun phrase, leaving out the relative clause will typically result in a construction that provides insufficient information to uniquely identify the intended referent, and a request for more identifying information is likely to follow. Unlike the sentences in (651), however, use of an indefinite renders the sentence fully acceptable as an all-new statement.

(652)   • Restrictive relative clauses
     a. #Niemand kocht   het boek.   a′. Niemand kocht   een boek.
        no.one   bought the book   no.one   bought a book
     b. #Jan zag   het meisje.   b′. Jan zag een meisje.
        Jan saw   the girl   Jan saw a girl

A more extensive discussion of the function of finite clausal complements and restrictive relative clauses within the noun phrase can be found in, respectively, Section 2.3.1 and Section 3.3.2. The remainder of this section will be devoted to a discussion of the differences in form and syntactic behavior of the two types of clauses.

2.3.3.2. Syntactic differences

The previous section has shown that complement clauses can only be used in combination with nouns that denote abstract content (proposition and speech act nouns), whereas relative clauses can be used to modify all common nouns. Next to this semantic difference, there are a number of syntactic differences between complement clauses and relative clauses. These involve the aspects given in Table 16, each of which will be discussed in more detail in the subsections below.

Table 16: Differences between complement and relative clauses

	COMPLEMENT CLAUSE	RELATIVE CLAUSE
Interpretative gap within clause	not present	present
Linker	complementizer	relative pronoun
Distribution	can also occur independently in argument or predicative position	can only be used with an antecedent
Modification of nominal head	does not combine freely with the superlative or comparative forms of the adjective	combines freely with the superlative and comparative forms of the adjective
Determiner selection	does not combine freely with the indefinite article	combines freely with the indefinite article

I. The presence of an interpretative gap within the clause

Complement clauses differ from relative clauses in that only the latter contain an interpretative gap that is "filled" by the head of the nominal construction. This gap is the result of movement of the relative pronoun into the initial position of the clause, and will be referred to as trace (*t*). The relative pronoun takes the NP (the head noun and its optional modifiers) as its antecedent, which is therefore taken to fill the interpretative gap in the clause, and this enables the relative clause to provide additional information about the denotation of the NP. So, in (653) the relative pronoun *dat* 'that' originates as the direct object of the relative clause and is moved into the initial position of the relative clause leaving the trace t_i in its original position. The relative pronoun takes the NP *feit* as its antecedent, which is expressed by means of co-indexing. Consequently, *feit* is interpreted as the direct object of the relative clause, and as a result the modified NP denotes a subset of the set of facts, namely those accepted by everyone.

(653) • Restrictive relative clause

a.	D	[$_{NP}$	N]$_i$	[$_{RC}$	REL$_i$	...	t_i	...	]
b.	het	[$_{NP}$	feit]$_i$	[$_{RC}$	dat$_i$	iedereen	t_i	aanvaardde]
	the		fact		that	everyone		accepted

'the fact that everyone accepted'

Complement clauses, on the other hand, simply specify the contents referred to by the noun phrase headed by a proposition or speech-act noun. There is no interpretative gap in the complement clause: no part of the complement clause is

coreferential with the nominal head, which therefore does not play a role in the interpretation of the complement clause.

(654) • Complement clause

a.	D	[NP	N	[CC	COMP	...	]]
b.	het	[NP	feit	[CC	dat	de aarde rond is]]	
	the		fact		that	the earth round is	

'the fact that the earth is round'

For completeness' sake, observe that the generalization that complement clauses do not contain an interpretative gap holds only for the declarative ones. Interrogative complement clauses introduced by a *wh*-word do, of course, contain a trace of the *wh*-word moved into initial position of the dependent clause, but they crucially differ from relative clauses in that the *wh*-word does not take the head noun as its antecedent.

(655) de vraag [wat$_i$ hij t_i feitelijk gezegd had]
     the question what he   actually said   had

II. The form of the linker

Both complement and relative clauses contain an element linking them to the nominal head of the noun phrase: this linker takes the form of a complementizer in complement clauses, whereas in relative clauses the linker is a relative pronoun taking the NP (the head noun and its optional modifiers), as its antecedent. In many cases the form of the linker will reveal the status of the subordinate clause, but in some cases the complementizer and the relative element can take the same form.

A. The linker in complement clauses: complementizers and wh-*words*

Complement clauses can be introduced by a number of complementizers, depending on the semantic type of the noun they modify: proposition or speech-act noun, as well as the type of speech-act noun. If a complement clause construction is headed by a proposition noun, such as *feit* 'fact', *aanname* 'assumption' or *geloof* 'belief', the complementizer *dat* must be used. This is shown in (656), as well as in (649) above.

(656) a. de aanname   dat Jan komt
         the assumption that Jan comes
         'the assumption that Jan is coming'
     b. het geloof dat er   leven is op Mars
         the belief that there life   is on Mars
         'the belief that there is life on Mars'

If the head noun is a speech-act noun, the choice of complementizer depends on the illocutionary force of the speech-act noun. If the speech act concerned is a statement, promise, threat, or prediction, the declarative complementizer *dat* must be used, as illustrated by the constructions in (657a&b).

(657) a. de mededeling   dat Jan komt
           the announcement that Jan comes
           'the announcement that Jan is coming'
      b. het bericht dat   er   leven is op Mars
           the news   COMP there life   is on Mars
           'the news that there is life on Mars'

If the illocutionary force is that of a question, the form of the complementizer depends on the kind of question formulated in the complement clause: if the complement is the equivalent of a *yes/no*-question like (658a), the complementizer *of* will be used, as in (658a′); if the complement is the equivalent of a *wh*-question like (658b), the linker will take the form of a question word like *wie* 'who', *waarom* 'why' or *hoe* 'how', as is shown in (658b′).

(658) a. Komt Jan morgen   ook?
           comes Jan tomorrow too
           'Is Jan also coming tomorrow?'
      a′. de vraag   of   Jan morgen   komt
           the question COMP Jan tomorrow comes
           'the question whether Jan is coming tomorrow'
      b. Wanneer/Waarom/Hoe komt   Peter?
           when/why/how   comes Peter
           'When/Why/How will Peter come?'
      b′. de vraag   wanneer/waarom/hoe Peter komt
           the question when/why/how   Peter comes
           'the question when/why/how Peter will come'

The examples in (659) show that if the speech act concerned is a request, order or suggestion, the complement typically takes the form of an infinitival clause (optionally preceded by the complementizer *om*); we have seen earlier that it is also marginally possible to use a finite clause introduced by *of* but we will not illustrate this here again; cf. (616d′).

(659) a. het verzoek (om) PRO   toegelaten te worden
           the request COMP   admitted   to be
           'the request to be admitted'
      b. het bevel (om) PRO te vertrekken
           the order COMP   to leave
           'the order to leave'

B. The linker in restrictive relative clauses: relative pronouns

In relative clauses, the linker takes the form of a relative pronoun. These pronouns can take a number of forms. When the antecedent is an NP, the relative pronouns *die* and *dat* can be used, depending on the gender and the number features of the noun. Examples are given in (660).

(660) The relative pronouns *die* and *dat*

	SINGULAR	PLURAL
[-NEUTER]	*de bal* **die** *daar ligt* the ball that there lies 'the ball that is lying there'	*de ballen* **die** *daar liggen* the balls that there lie 'the balls that are lying there'
[+NEUTER]	*het boek* **dat** *daar ligt* the book that there lies 'the book that is lying there'	*de boeken* **die** *daar liggen* the books that there lie 'the books that are lying there'

But this does not exhaust the possibilities. For example, question words can function as relative pronouns, as in (661a), where the antecedent NP refers to a place. The same thing holds for pronominal PPs, as in examples (661b&c), in which case the relativized element is the object of a PP. Where the antecedent has temporal reference, as in example (661d), the linker *toen* can be used, although the relative particle *dat* is usually preferred. There are more options but for these we refer the reader to Section 3.3.2.1; for our present purpose the examples in (660) and (661) suffice.

(661) a. de plaats$_i$ waar$_i$ ik geboren t_i ben
          the place REL I born   am
          'the place where I was born'

   b. de auto$_i$ waarmee$_i$ ik op vakantie t_i ben   geweest
       the car REL-with I on holiday   have been
       'the car I went on holiday with'

   c. het boek$_i$ waarin$_i$ ik zit t_i te lezen
       the book REL-in I sit   to read
       'the book I am reading'

   d. de tijd $^?$toen$_i$/dat$_i$ men nog per koets t_i reisde
       the time when/that one still by carriage traveled
       'the days people traveled by carriage'

C. The linkers of the two constructions compared

The discussion above has shown that in many cases the nature of the subordinate clause is revealed by the form of the linker. For example, the linkers *om* and *of* can only be used as complementizers introducing complement clauses, whereas the linker *die* is a relative pronoun introducing relative clauses. The linker *dat*, however, can be used to introduce both complement and relative clauses. Here, we will show how the two cases can be distinguished.

The linker *dat* behaves syntactically in a different way in the two types of clauses. When *dat* functions as the complementizer in a complement clause, its form is invariable: in contrast to the relative pronouns in (660), it does not agree with the number and gender features of the head noun. Therefore, in cases of doubt all we have to do is to replace the singular head noun by a plural one and see whether the form of the linker changes: in the (a)-examples of (662) the form of the linker remains the same and we are therefore dealing with a complement clause; in

the (b)-examples, the form of the linker changes from *dat* to *die*, which shows that we are dealing with a relative clause.

(662)   • Complement clauses
   a.   het bericht [*dat* er   leven op Mars zou   zijn]   [complement clause]
        the report that there life   on Mars would be
        'the news that there would be life on Mars'
   a′. de berichten [*dat* er   leven op Mars zou   zijn]
        the reports   that there life   on Mars would be
   b.   het bericht [*dat* ons bereikte]   [relative clause]
        the report that us   reached
        'the report that reached us'
   b′. de berichten [*die* ons bereikten]
        the reports   that us   reached

When the linker takes the form of a *wh*-word or a pronominal PP, the ambiguity still prevails, as these are insensitive to number and gender variation of the head noun. Of course, with proposition and declarative speech-act nouns the problem does not arise because such nouns can only be complemented by declarative clauses introduced by the complementizer *dat*; when such a noun is followed by a question word or a pronominal PP, as in (663), we must be dealing with a relative clause.

(663) a.   Het feit waar <aan> niemand <aan> twijfelde was dat de aarde rond is.
           the fact where on   no.one   doubted was that the earth round is
           'The fact that no one contested was that the earth is round.'
      b.   De veronderstelling waar   <over> veel discussie <over> ontstond
           the supposition   where about much discussion   arose
           was of   er   leven is op Mars.
           was whether there life   is on Mars
           'The supposition causing much discussion was whether there is life on Mars.'

However, when the speech-act noun involves a question, true ambiguity may occur. In example (664), for instance, the element *waarover* can introduce both a relative clause and an interrogative complement. In the former case, the pronominal part of the PP is coindexed with the NP *vraag* 'question', which is therefore interpreted as the theme of the verb *discussiëren* 'to discuss', and as a result, the clause provides information needed to identify the question referred to. In the latter case, the pronominal PP is interpreted independently of *vraag* and the following complement clause simply describes the contents of the question referred to.

(664) a.   De vraag_i   waar_iover   ze discussieerden, bleef   onbeantwoord.
           the question where-about they discussed   remained unanswered
           Relative clause: 'The question they discussed remained unanswered.'
      b.   De vraag   waarover   ze discussieerden, bleef   onbeantwoord.
           the question where-about they discussed   remained unanswered
           Complement: 'The question of what they discussed remained unanswered.'

The difference is again exemplified by the sentences in (665). In the relative clause in (665a) the pronominal PP *waarmee* functions as a relative pronoun, coreferential

with the antecedent *vraag* 'question', which is therefore interpreted as the complement of the verb *lastigvallen* 'to bother': as a result the relative clause provides information that is necessary to properly identify the intended question. In the complement clause in (665a) the pronominal part of the PP *waarmee* is interpreted independently of *vraag*; it refers to the instrument used to commit the murder, and the whole complement clause is simply specifying the contents of the question referred to.

(665) a. De vraag$_i$ waar$_i$mee   hij me bleef lastigvallen was zeer persoonlijk.
         the question where-with he me kept bother   was very personal
         'The question he kept harassing me with was very personal.'
      b. Hij beantwoordde de vraag   waarmee   hij de moord   had gepleegd.
         he   answered.to   the question where-with he the murder   had committed
         'He replied to the question about what he had committed the murder with.'

III. Distribution of the complement and relative clause

There are also distributional differences between complement and relative clauses. These differences are due to the fact that relative clauses contain a relative pronoun that requires an antecedent, whereas complement clauses are not dependent on the noun in that same way. As a result, complement clauses are freer in their distribution: they may function, e.g., as the subject of the object of a verb, as in (666b).

(666) a. Niemand geloofde toen [dat de aarde rond is].
         no.one   believed then that the earth round is
         'No one believed then that the earth is round.'
      b. [Dat de aarde rond is] werd toen door niemand geloofd.
         that the earth round is was   then by no.one   believed
         'That the earth is round was believed by no one then.'

They may even be used as the predicate in a copular construction, in which case they are predicated of a noun phrase headed by a proposition or speech-act noun, as in (667). This is, of course, hardly surprising, given that the nominal head denotes the same abstract entity as the clause.

(667) a. De nieuwste ontdekking is [dat de aarde rond   is].
         the newest discovery   is that the earth round is
         'The latest discovery is that the earth is round.'
      b. Het antwoord was [dat de zaak nog onbeslist   was].
         the answer   was that the case still undecided was
         'The answer was that the case was still undecided.'
      c. De vraag   is [of   we dat wel willen].
         the question is whether we that PRT want
         'The question is whether we want that.'

Relative clauses, on the other hand, never occur independently; the clause contains a relative pronoun which needs an antecedent, and, consequently, the relative clause in (668a) can be used neither as an argument nor as a predicate of a copular construction. This is demonstrated by, respectively, (668b&c) and (668d).

(668) a. De veronderstelling$_i$ die$_i$ niet aanvaard werd, was dat er leven is op Mars.
     the supposition   that not accepted was   was that there life is on Mars
     'The supposition that was not accepted was that there is life on Mars.'
  b. *Niemand veronderstelde die$_i$ niet aanvaard werd.
     no.one   supposed   that not accepted was
  c. *Die$_i$ niet aanvaard werd, werd door niemand verondersteld.
     that not accepted was   was by no.one   supposed
  d. *De veronderstelling is die$_i$ niet aanvaard werd.
     the supposition   is that not accepted was

IV. Modification

Another difference between the complement and relative clauses stems from the different communicative functions they fulfill. Finite complement clauses express the contents of some proposition or speech-act noun. As such they can be said to be uniquely determining; there is only one fact, assumption, question, request, etc. with the particular contents specified in the complement clause. This can be supported by the fact that the adjectives *interessant* and *triviaal* in (669) can only be used on a nonrestrictive (purely property-assigning) reading.

(669) a. het interessante feit dat er leven is op Mars
     the interesting fact   that there life is on Mars
  b. de triviale aanname dat de aarde rond is
     the trivial assumption that the earth round is

Another piece of evidence supporting this assumption is that NPs containing a complement clause cannot be modified by a superlative, since these presuppose a non-singleton set. Note in passing that Dutch lacks the non-superlative interpretation that is available for the English translations in (670), which amount to "extremely interesting fact/trivial assumption" or "the most interesting fact/trivial assumption possible", and which does not involve selection from a presupposed set, but nonrestrictive assignment of a property.

(670) a. *het interessantste feit dat er leven is op Mars
     the most interesting fact that there life is on Mars
     'the most interesting fact that there is life on Mars'
  b. *de triviaalste aanname dat de aarde rond is
     the most trivial assumption that the earth round is
     'the most trivial assumption that the earth is round'

Use of the comparative form is possible, but only if the comparison involves some other fact altogether. In (671a), for instance, the fact referred to is compared to some other, possibly contextually evoked, fact, which is asserted to be less interesting; likewise, the sentence in (671b) is acceptable only in relation to some other, less trivial, assumption.

(671) a. Het interessantere feit   dat er leven is op Mars   werd geheim gehouden
the more interesting fact that there life is on Mars was secret kept
(*maar niet het minder interessante dat er   water is).
but   not the less interesting   that there water is
'The much more interesting fact that there is life on earth was kept a secret
(but not the less interesting fact that there is water).'

b. De veel trivialere aanname   dat de aarde rond   is werd
the much more trivial assumption that the earth round is was
door iedereen aanvaard (*maar niet de minder triviale).
by everyone   accepted   but   not the less trivial
'The much more trivial fact that the earth is round was accepted by everyone
(but not the less trivial one).'

With relative clauses, such restrictions do not apply. Both the superlative and the comparative forms of the adjective can be used in their selective/comparative function, while adjectives can be used both restrictively and non-restrictively. Example (672a), for instance, implies that there is a larger set of facts, the most interesting of which was that there is life on Mars, and in (672b) a comparison is made between two facts, the more interesting of which is the one mentioned. In (672c), the adjective *interessant* is used contrastively: a set of two facts is implied, one interesting, the other uninteresting. Observe that a non-contrastive, nonrestrictive reading of the adjective is also possible; in that case the fact in question is simply assigned the property of being interesting.

(672) a. Het interessantste feit   dat werd aangetoond was dat er leven is op Mars.
the most interesting fact that was proved   was that there life is on Mars

b. Het interessantere feit   dat werd aangetoond was dat er leven is op Mars.
the more interesting fact that was   proved   was that there life is on Mars

c. Het interessante feit dat werd aangetoond was dat er leven is op Mars.
the interesting fact   that was proved   was that there life is on Mars
(het oninteressante dat de aarde rond   is).
the uninteresting   that the earth round is

V. Determiner selection

A final difference between the two types of clauses can be accounted for along the same lines as the previous one: due to the fact that the contents of complement clauses serve to uniquely determine the entity referred to by the noun phrase, they can only be used in combination with the definite article (provided that the complement clause is the only modifying element); use of the indefinite article yields an unacceptable result. This is demonstrated in example (673).

(673) a. het/*een feit dat de aarde rond   is
the/a fact   that the earth round is

b. de/*een veronderstelling dat er   leven is op Mars
the/a supposition   that there life   is on Mars

c. de/*een vraag of   Jan komt
the/a question whether Jan comes

Relative clauses, on the other hand, readily accept both the definite and the indefinite article, as shown by example (674).

(674) a.   Het/Een feit   dat   niemand   in twijfel trok   was dat de aarde rond was.
       the/a fact   that   no.one   in doubt   drew   was that the earth round was
       'The/A fact that no one doubted was that the earth was round.'
    b.   De/Een veronderstelling   die niemand aanvaardde   was dat er leven is op Mars.
       the/a supposition   that no.one accepted   was that there life is on Mars
       'The/A supposition that no one accepted was that there is life on Mars.'
    c.   De/Een vraag   die   niemand   kon beantwoorden   was of Jan was vertrokken.
       the/a question   that   no.one   could answer   was whether Jan had left
       'The/A question that nobody could answer was whether Jan had left.'

VI. A final note on infinitival complement clauses

Proposition nouns followed by infinitival complement clauses introduced by *om* differ from those followed by a finite complement clause in that they can be modified by an adjective and do accept the indefinite article. Some examples are given in (675).

(675) a.   een dringend/het dringende verzoek [om PRO   toegelaten te worden]
       an urgent/the urgent request   COMP   admitted   to be
       'an/the urgent request to be admitted'
    b.   een plotseling/het plotselinge bevel [om PRO   te vertrekken]
       a sudden/the sudden   order COMP   to leave
    c.   een/de grote angst [om PRO   ontslagen   te worden]
       a/the great fear   COMP   dismissed   to be
       'a/the great fear to be dismissed'

A possible explanation for this contrast with finite complement clauses can be found, first of all, in the fact that *om*-clauses do not, strictly speaking, specify the content of the head noun, but the purpose or cause of the action or emotion expressed by the proposition noun. As a result, the relation between the proposition noun and the complement clause need not be uniquely determined: there may be various ways of requesting to be admitted or of ordering a person to leave. In (675a), for instance, a particular type of request is referred to: the kind intended to achieve admission. The exact form of the request, however, is not specified.

    An alternative explanation may focus on the fact that *om*-clauses are always non-factual, specifying requests, orders, wishes, possible situations and the like (see also Section 2.3.2). Again, this means that although the complement clause is certainly used to specify the proposition noun, noun phrase and clause do not share their reference. That something like this might be on the right track is also suggested by the fact that using the infinitival complements as the predicate of a copular clause is marked compared to the fully acceptable examples in (667), discussed in III, involving finite complement clauses.

(676) a. [?]Het verzoek was [om PRO   toegelaten te worden].
     the request was COMP   admitted   to be
     'The request was to be admitted.'

    b. [?]Het bevel was [om PRO   te vertrekken].
     the order   was COMP   to leave

    c. ^{??}de grote angst   was [om PRO ontslagen   te worden]
     a/the great fear was COMP   dismissed to be
     'a/the great fear to be dismissed'

Note that the infinitival clause in (676a) can also be interpreted as a purpose clause. This is related to the fact that the *om*-clause in (677) can also be interpreted either as the complement of the noun or as an adverbial phrase indicating purpose. The fact that *om*-clauses in sentence-final position are typically interpreted as purpose clauses may well affect the judgments on (676). This concludes our discussion of complementation of nouns.

(677)   Hij   plaatste het verzoek [om PRO   toegelaten te worden].
       he   placed   the request COMP   admitted   to be
       'He made the request (in order) to be admitted.'

2.4. Bibliographical notes

Detailed overviews of nominalization in Dutch can be found in De Haas & Trommelen (1993) and Haeseryn et al. (1997: 879ff.). For a discussion of restrictions on the input verb (in particular ergative verbs) of deverbal constructions of various kinds, see Knopper (1984). For discussions of ER-nominalizations, see Booij (1986a, 1986b), Hoekstra (1986) and De Caluwe (1992, 1995). Discussions of the behavior of INF- and/or ING-nominalizations can be found in Ten Cate (1977), Van Haaften et al. (1985), Dik (1985a), Hoekstra & Wehrmann (1985), Hoekstra (1986), Looyenga (1990) and Schoorlemmer (2001), while Van den Hoek (1972) and Mackenzie (1985a) deal exclusively with GE-nominalizations. For a comparison between derivations with the affixes *ge-* and *-erij*, see Hüning (1992). Discussion of Dutch picture nouns can be found in Kaan (1992: Ch.5) and De Wit (1997). Although dealing with English rather than Dutch, the following publications may also be of interest: Zucchi (1993), who deals with the syntax and semantics of nominalization; Mackenzie (1985b, 1986, 1990, 1996), who takes a functional point of view; and Fu et al. (2001) on process nominals. For a typological study of action nominals, based on 70 languages (including Dutch), see Koptsjevskaja-Tamm (1993).

    Detailed theoretical discussions of argument structure can be found in Williams (1981, 1994) and Grimshaw (1990); for a review of these and other more recent proposals: see to Alexiadou et al. (2007: part IV, chapter 1). For discussions of relational nouns and inalienable possession, the reader is referred to Fillmore (1968), Hawkins (1981), Löbner (1985) and Guéron (1985). Although none of these studies deal with Dutch specifically, they all include material relevant for the Dutch noun phrase. Generative studies on the inheritance of arguments in Dutch include Hoekstra (1984a, 1986), Booij (1986a, 1988, 1992b), and Booij & Van Haaften

(1987); Van der Putten (1997) advocates a lexical approach, and Dik (1985a, 1985b) and Mackenzie (1985a, 1986) adopt a functional approach.

There is quite a body of literature on extraction from the noun phrase. For Dutch, the reader is referred to Coppen (1991), Kaan (1992, Ch.4) and De Wit (1997); see also Van der Does & De Hoop (1998) on the scrambling of definite noun phrases. Earlier studies on extraction include Kooij & Wiers (1977, 1978, 1979), Klein & Van der Toorn (1979) and De Haan (1979). For English, too, tests have been developed to distinguish PP-complements from PP-modifiers; cf. e.g., Radford (1988), Fries (1999) and Huddleston & Pullum (2002). Discussions of extraction from English noun phrases in a generative context can be found in Guéron (1980), Baltin (1983, 1984), Culicover & Rochemont (1990), Rochemont & Culicover (1990) and Davies & Dubinsky (2003).

Chapter 3
Projection of noun phrases II: modification

Introduction

Section 1.1.2 has suggested that the internal structure of the DP can be represented as in (1), where the determiner D and the noun N are the heads of the °projections DP and NP, respectively. The dots indicate the positions available for possible other elements, that is, for °modifiers and °complements. The present section is concerned with the various forms of modification of the NP; for a detailed discussion of complementation in the NP the reader is referred to Chapter 2, and for a discussion of modifiers in the DP to Chapter 7. The relation between the two nouns in binominal constructions like *een reep chocola* 'a bar [of] chocolate' is of a different nature, and is discussed in Chapter 4.

(1) $[_{DP} ... D ... [_{NP} ... N ....]]$

Apart from the obligatory head noun and its (optional or obligatory) complements, each noun phrase may contain one or more modifiers. These modifiers can be categorized according to their function, form and position.

I. Restrictive and non-restrictive modifiers

Modifiers can have either a restrictive or a nonrestrictive function. Restrictive modifiers restrict the denotation of the head noun and thus provide information that is required for the proper identification of the referent of the DP as a whole; we will therefore assume that they are part of the NP-domain, as in (2a). Non-restrictive modifiers, on the other hand, do not restrict the denotation of the head noun and thus do not provide information that is required for the identification of the referent of the entire DP. Rather, they provide more information about the intended referent of the DP, and we will therefore assume that non-restrictive modifiers modify the complete noun phrase; they are part of the DP-domain, and external to the NP-domain as in (2b).

(2)   a. $[_{DP} ... D ... [_{NP} MOD_{restrictive} [N (complement)] MOD_{restrictive}]]$
       b. $[_{DP} ... D ... MOD_{non\text{-}restrictive} [_{NP} N (complement)] MOD_{non\text{-}restrictive}]$

Non-restrictive modifiers are usually easily recognizable: they are separated off from their head by a specific intonation pattern (in written language by means of a comma), thus reflecting the loose relationship between head and non-restrictive modifiers. Restrictive modifiers, on the other hand, may be hard to distinguish from complements; for a discussion of the differences between restrictive modifiers and complements, see Section 2.2.1 (for PPs) and Section 2.3.3 (for clauses).

II. Form and placement

As is indicated in (2), restrictive and non-restrictive modifiers within the DP can appear in two different positions: they may precede or follow the head of the DP. The actual placement of the modifier is sensitive to the form of the modifier. Prenominal modifiers are always headed by an adjective, a present or past participle, or a modal infinitive; when these phrases are complex they may also occur postnominally. Postnominal modifiers, on the other hand, typically take the form of a prepositional phrase or a clause. Semantically, the modifying clauses can be subdivided into content, relative, and adverbial clauses. Finally, a restricted

number of adverbial phrases can be used as postnominal modifiers. Table 1 gives examples of all the relevant constructions.

Table 1: The form and position of modifiers in the DP

FORM		PREMODIFICATION	POSTMODIFICATION
Adjectival		*de vette koeien* the fat cows	*de koeien, vet en oud, ...* the cows fat and old
Participial		*de grazende koeien* the grazing cows	*de koeien, grazend in de wei, ...* the cows grazing in the field
		de geslachte koeien the slaughtered cows	*de koeien, geslacht in het slachthuis, ...* the cows slaughtered in the slaughterhouse
Infinitival		*de te slachten koeien* the cows to be slaughtered	*de koeien, binnenkort te slachten, ...* the cows soon to be slaughtered
Prepositional		—	*de koeien in the wei* the cows in the field
Clausal	Content	—	*de mededeling dat we weggingen, ...* the announcement that we away.went 'the announcement that we were leaving'
	Relative	—	*de koeien die grazen in de wei* the cows that graze in the field
	Adverbial	—	*de protesten sinds de euro werd ingevoerd* the protests since the euro was introduced
Adverbial		—	*de krant gisteren* the paper yesterday

The organization of the present section is as follows. Section 3.1 begins with a brief general discussion of the difference between restrictive and non-restrictive modifiers, and also pays some attention to the difference between modifiers and appositives. Sections 3.2 and 3.3 deal with pre- and postmodification, respectively. The discussion of premodification is comparatively short, since it is dealt with in great detail in Chapter A5.

3.1. Restrictive and non-restrictive modifiers

This section is concerned with the difference between restrictive and non-restrictive modifiers. Although this distinction is not always clear-cut, Sections 3.1.1 and 3.1.2 will discuss a number of differences in form and function, which in most cases make it possible to tell the two types of modifier apart; cf. also De Vries 2002: 181ff. Section 3.1.3 will conclude this section with a brief discussion of the distinction between modifiers and appositive phrases.

3.1.1. Differences in form

This section discusses the differences in form between restrictive and non-restrictive modifiers, in particular with regard to the intonation patterns used to distinguish the two uses. In writing, the distinction is made by means of punctuation marks like commas, parentheses and dashes, which will also be briefly discussed. Pre- and postnominal modifiers will be dealt with in separate subsections.

I. Postmodification

Both in speech and in writing, there is a fairly straightforward formal difference between restrictive and non-restrictive modifiers in postnominal position. In speech, restrictive and non-restrictive postnominal modifiers are formally distinguished by their intonation patterns: whereas in restrictive constructions the head and modifier form one intonation unit, non-restrictive constructions are characterized by an intonation break between the nominal head and the modifier. This use of an intonation break to separate off non-restrictive modifiers reflects the status of this modifier as supplying extra information; cf. Section 3.1.2. In writing, the intonation pattern is represented by, respectively, the lack or the presence of a comma: a non-restrictive modifier is preceded and followed by a comma, whereas these commas (in particular the first one) are normally absent in the case of a restrictive modifier. This is illustrated in (3) for PP-modifiers: in (3a), the commas are absent and the PP-modifier *in de schuur* 'in the shed' is interpreted as a restrictive modifier; in (3b) the PP *in de Gouden Koets* 'in the Golden Coach' functions as a non-restrictive modifier and is hence preceded and followed by an intonation break/a comma.

(3) • PP-modifiers
    a. De fiets in de schuur is van mij.
       the bike in the shed is of me
       'The bike in the shed is mine.'
    b. De koningin, in de Gouden Koets, zwaaide naar het publiek.
       the Queen ` in the Golden Coach waved to the public

In (4), we show the same for AP-modifiers like *verliefd* 'in love': the adjective *verliefd* 'in love' in (4a) forms an intonation unit with the proper noun and functions as a restrictive modifier, whereas the AP *tot over zijn oren verliefd* 'head over heels in love' in (4b) is separated from the noun by an intonation break/a comma and functions as a non-restrictive modifier.

(4) • Postnominal AP-modifiers
    a. Jan verliefd is een totaal andere persoon.
       Jan in love is a totally different person
    b. Jan, tot over zijn oren verliefd, nam elke dag bloemen mee voor Marie.
       Jan to over his ears in love   took every day flowers prt. for Marie
       'Jan, head over heels in love, brought Marie flowers every day.'

With relative clauses we find essentially the same thing, although there are some complicating factors. The examples in (5) and (6) show that non-restrictive relative clauses are preceded and followed by an intonation break/a comma, whereas restrictive relative clauses are normally not (although they may be followed by one).

(5) • Non-restrictive relative clauses
    a. Mijn nieuwe fiets, die ik gisteren heb gekocht, is vanmorgen gestolen.
       my new bike   which I yesterday have bought is this morning stolen
       'My new bike, which I bought yesterday, was stolen this morning.'
    b. De koningin, die jarig   is, houdt straks een toespraak.
       the Queen   who having.her.birthday is holds later   a speech
       'The Queen, who is celebrating her birthday, will be giving a speech later.'

(6)   • Restrictive relative clauses
    a.   De fiets die ik gisteren heb gekocht (,) is vanmorgen gestolen.
        the bike that I yesterday have bought   is this morning stolen
        'The bike that I bought yesterday was stolen this morning.'
    b.   De koningin die het langst   geregeerd heeft (,) is Koningin Wilhelmina.
        the Queen   who the longest reigned   has   is Queen Wilhelmina
        'The Queen who reigned for the longest period is Queen Wilhelmina.'

In writing, the use of a comma following the restrictive relative clause is essentially optional but common when the modified noun phrase is a subject. In particular, it is used when the verb of the relative clause immediately precedes the finite verb of the main clause, as in (6), or when the relative clause is long or complex. Note further that a restrictive clause can also be preceded by a comma when there is another (restrictive) postmodifier in between the noun and the relative clause, as in (7). Obviously, this means that the status of the relative clause, as restrictive or non-restrictive, cannot always be inferred from the use of commas alone: when the commas are absent, we may safely conclude that the relative clause is intended as restrictive, but not all relative clauses preceded by a comma are intended as non-restrictive. The conventions on comma placement can be found in language guides such as Renkema (1989: 170ff.) and Van Gessel (1992: 108ff.).

(7) a.   De motor van de auto(,) die net vervangen is,   bleek van het verkeerde type.
        the motor of the car   which just replaced is proved of the wrong type
        'The motor of the car which was just replaced, proved to be of the wrong type.'
    b.   Een vriend van mijn neef(,) die bij de politie werkt,   heeft dat gezegd.
        a friend of my cousin   who by the police works, has   that said
        'A friend of my cousin who works for the police, has said that.'

II. Premodification

In the case of premodification, there are no typographical differences between restrictive and non-restrictive constructions: the premodifier, which may be adjectival, participial or infinitival in nature, is not separated off from the head noun by means of a comma (unless it is clearly parenthetical). Thus the adjective *dappere* 'brave' in example (8a) can be either restrictive (not all Germans but only the brave ones) or non-restrictive (the Germans, all of whom are brave). Similarly, there are no commas in either (8b) or (8b′), despite the fact that they differ in interpretation of the modifier: the adjective *heerlijk* 'delicious' in (8b) is likely to receive a non-restrictive interpretation (all apples under discussion are delicious), whereas the adjective *rode* 'red' in (8b′) is likely to be given a restrictive interpretation (not the green ones).

(8)   a.   De dappere Germanen werden geprezen.
        the brave Germans   were   praised
    b.   Mag ik een kilo van die heerlijke appels?
        may I   a kilo   of those delicious apples
        'Can I have a kilo of those delicious apples?'
    b′. Mag ik een kilo van die rode appels?
        may I   a kilo   of those red apples

In speaking, on the other hand, the difference between restrictive and non-restrictive premodifiers often is indicated: restrictive premodifiers are usually stressed (in particular in contrastive contexts), whereas non-restrictive premodifiers are not. This difference in emphasis would, for instance, distinguish the restrictive reading of (8a) from the non-restrictive one.

(9) a. De dàppere Germanen werden geprezen.   [restrictive]
     b. De dappere Germànen werden geprezen.   [non-restrictive]

Once again, however, this difference does not apply to all cases. In (8b), for instance, the adjective may be stressed, even if it is used non-restrictively, in which case the property *heerlijk* 'delicious' is emphatically stressed for its own sake, not to restrict the denotation of the noun phrase or to indicate contrast.

3.1.2. Differences in function

This section briefly explains the difference in function between restrictive and non-restrictive modifiers. The discussion will be confined to constructions with specific definite, specific indefinite and generic noun phrases. More detailed discussions can be found in Sections 3.2 and 3.3 on the different types of pre- and postmodifiers, including quantified noun phrases and noun phrases with possessive pronouns.

I. Postmodification

Restrictive postmodifiers are needed to unequivocally determine the referent of the noun phrase; its semantic function is to restrict the set denoted by the head noun, and for this reason both the noun and the modifier are plausibly part of the NP-domain of the noun phrase, as indicated in (10a). In the case of non-restrictive postmodification, on the other hand, the modifier is not needed to establish the referent of the noun phrase; the non-restrictive modifier does not restrict the denotation of the head noun, but simply provides additional information about the referent of the noun phrase. In this case, the non-restrictive modifier can therefore be considered part of the DP-domain of the noun phrase, as in (10b).

(10) a. Restrictive postmodification: $[_{DP}$ D ... $[_{NP}$ [... N ...] MOD$_{restrictive}$]]
      b. Non-restrictive postmodification: $[_{DP}$ D ... $[_{NP}$ ... N ...] MOD$_{non-restrictive}$]

Note that the non-restrictive modifier seems to have the whole noun phrase in its °scope, and that for this reason it is often assumed that the non-restrictive modifier is not within the DP, as in (10b), but attached to it at some higher level. The reason for adopting the structure in (10b) will be clear from the discussion of example (19) below.

A. Definite noun phrases

Restrictive modifiers restrict the set of referents of the noun phrase, whereas non-restrictive modifiers do not. This means in the case of definite noun phrases that the restrictive modifier is needed in order to enable the listener to pick out the intended (possibly singleton) set of referents, whereas the non-restrictive modifier simply provides additional information about the intended referent of the noun phrase. Consider the examples in (11).

(11) a. De kat, naast me op het bed, ligt te spinnen.
          the cat beside me on the bed lies to purr
          'The cat, beside me on the bed, is purring.'
      b. De kat op het bed ligt te spinnen (die op de vensterbank niet).
          the cat on the bed lies to purr   that on the windowsill not
          'The cat on the bed was purring (the one on the windowsill wasn't').'

In example (11a), the cat referred to by the noun phrase is assumed to be identifiable to the hearer within the given context, and the information provided in the PP *naast me op het bed* 'beside me on the bed' simply provides additional information about the location of cat in question; if the modifier were left out, the sentence would be less informative, but still perfectly acceptable. In example (11b), on the other hand, the PP-modifier provides information that the hearer needs in order to properly identify the intended referent of the noun phrase; there are several entities in the domain of discourse (domain D) that are part of the denotation of the head noun *kat* 'cat', and the restrictive modifier provides the additional information required for the hearer to pick out the intended referent.

Restrictive modifiers can therefore be said to be required for successful communication: when domain D contains several cats and the speaker would say *de kat ligt te spinnen* 'the cat is purring', the hearer will not be able to identify the intended referent of the noun phrase, and will most certainly ask for additional information. It is not surprising, therefore, that a frequently used test to tell the difference between restrictive and non-restrictive modifiers involves the question of whether the modifier can be left out. This test is pragmatic rather than syntactic in nature, since the result is, strictly speaking, always grammatical, so that the acceptability of the resulting construction should be valued in terms of felicitousness within the given context: leaving out a non-restrictive modifier merely leads to a less informative, but unambiguously interpretable sentence, whereas leaving out a restrictive modifier yields either an insufficiently informative and therefore infelicitous sentence or an incorrect/unintended (overgeneralized) statement.

That restrictive modifiers are used to enable the hearer to pick out the intended referent(s) whereas non-restrictive modifiers provide additional information on the intended referent is also clear from the fact that uniquely referring noun phrases cannot be modified by the latter. This can be readily illustrated by considering examples like (12) in which the relative clause modifies a proper noun. Example (12a) is acceptable given that the non-restrictive relative clause simply provides information about the intended referent's mother. Example (12b), on the other hand, would only be acceptable under the exceptional circumstance that the hearer knows that there is more than one person by the name of Jan de Jong, only one of whom happens to have an Argentine mother. And, actually, even under this interpretation the example is marginal, since the proper noun would then preferably be treated as a count noun and be preceded by the definite article: *De Jan de Jong die een Argentijnse moeder heeft, spreekt vloeiend Spaans* (see also Section 1.2.1.2.1, sub II).

(12) a. Jan de Jong (, die een Argentijnse moeder heeft,) spreekt vloeiend Spaans.
          Jan de Jong   who an Argentine mother has   speaks fluently Spanish
          'Jan de Jong (, who has an Argentine mother,) speaks Spanish fluently.'
      b. ??Jan de Jong die een Argentijnse moeder heeft, spreekt vloeiend Spaans.

Something similar holds for the examples in (13) where the referent of *datzelfde boek* 'that same book' can be assumed to be known to the addressee without the information provided in the relative clause: using a non-restrictive relative clause, as in (13a), is possible since it simply provides some additional information about the book in question; adding a restrictive relative clause, as in (13b), is impossible since it suggests that one and the same book can have different contents.

(13) a. Voor datzelfde boek, dat over de oorlog gaat,   kreeg hij een prijs.
          for that same book   which about the war goes got   he a prize
          'For that same book, which is about the war, he received a prize.'
      b. *Voor datzelfde boek dat over de oorlog gaat, kreeg hij een prijs.

The examples in (12) and (13) show that restrictive modifiers cannot be used when the referent of the definite noun phrase is already uniquely determined without it. The opposite restriction seems to hold for the non-restrictive modifier: the referent of the noun phrase must be uniquely determined in domain D in order for a non-restrictive modifier to be licensed. This is illustrated by (14), in which the non-restrictive relative clauses can be used, but only if the referents of the noun phrases have been introduced into the discourse before. If this is not the case, the sentences must be pronounced/have the punctuation associated with a restrictive relative clause.

(14) a. Ik heb de auto, die erg duur was,   op afbetaling   gekocht.
          I have the car   which very expensive was on credit   bought
          'I bought the car, which was very expensive, on credit.'
      b. De student, die een Argentijnse moeder had,   sprak vloeiend Spaans.
          the student   who an Argentine mother had   spoke fluently Spanish
          'The student, who had an Argentine mother, spoke Spanish fluently.'

To conclude, we want to emphasize that although non-restrictive modifiers do not play a role in determining the proper referent set of the noun phrase, they do play an important role in the discourse. For example, the information given in the relative clauses in (14) may be construed as the motivation or reason for the proposition expressed by the main clause: (14a) suggests that the speaker has bought the car on credit, *because* it was very expensive, and (14b) suggests that the fact that the student spoke Spanish fluently *is due to* the fact that he has an Argentine mother. In some cases leaving out a non-restrictive modifier may even lead to pragmatically infelicitous sentences. This may be the case in sentences that contain an element that can only be properly interpreted on the basis of the information given by the non-restrictive modifier. Consider example (15a): if the information given in the non-restrictive modifier *net uit het ziekenhuis* 'just out of the hospital' is new to the hearer, the adverbial phrase *natuurlijk* 'of course' in example (15a) cannot be properly understood without it: the sentence is not ungrammatical without the modifier, but nevertheless infelicitous in the given

context. The same thing holds for (15b), where the proper interpretation of the element *toch* 'still' requires knowledge of the fact that my friend has six children: "despite the fact that my friend has six children, she still has time for a job."

(15) a. Mijn opa,   net uit het ziekenhuis, kan vanavond natuurlijk niet komen.
          my granddad just out.of the hospital can tonight   of.course   not come
          'My granddad, just out of the hospital, cannot come tonight, of course.'
    b. Mijn vriendin, die zes kinderen heeft, heeft toch   nog tijd voor een baan.
          my friend   who six children has   has   still   yet time for a job
          'My friend, who has six children, still has time for a job.'

B. Specific indefinite noun phrases

If the noun phrase is indefinite with a specific referent, the function of the non-restrictive modifier is again to provide additional information about the referent of the noun phrase, the main difference with definite noun phrases being that this referent is not assumed to be identifiable for the hearer. The function of the restrictive relative clause, on the other hand, does change: although its main function is still to restrict the referent set of the noun phrase, it no longer serves to enable the hearer to uniquely identify this referent (set). Let us consider the indefinite version of the examples in (12), given in (16).

(16) a. Ik heb een auto, die erg duur was,   op afbetaling gekocht.
          I have a car   which very expensive was on credit   bought
          'I bought a car, which was very expensive, on credit.'
    b. Ik heb een auto die erg duur was, op afbetaling gekocht.

The indefiniteness of the noun phrase suggests that the hearer is not assumed to be able to pick out the intended referent: the speaker may be introducing a new entity into domain D or there may be several cars in this domain. The difference between the restrictive and non-restrictive sentences is that whereas the former supply additional information, the latter restrict the set of possible referents. Since identifiability is not at stake here, omitting the relative clause gives rise to a felicitous result in both cases. However, leaving out the restrictive relative clause changes the presuppositions of the main clause, whereas this is not the case for constructions with non-restrictive relative clauses. Thus in (16a) the core message conveyed is that the speaker bought only one car, and in addition it is said about this one car that it is an expensive car; leaving out the non-restrictive relative clause does not affect the core message. In (16b), on the other hand, the use of the restrictive relative clause suggests that the speaker bought more than one car, and that only for the expensive one payment was deferred. This suggestion that the speaker bought several cars is lost when the restrictive relative clause is dropped.

C. Generic noun phrases

The difference in function between non-restrictive and restrictive modification is particularly clear in constructions with generic noun phrases introduced by an indefinite article (*een* 'a' in the singular and the empty form Ø in the plural), since these can only be modified by restrictive modifiers. Example (17a) gives

constructions with relative clauses, example (17b) constructions with prepositional postmodifiers, and example (17c) constructions with adjectival postmodifiers.

(17) a. Een student die lui is, haalt geen voldoende.
　　　　 a student who lazy is gains no pass
　　　　 'A student who is lazy will not get a pass.'
　　 a'. #Een student, die lui is, haalt geen voldoende.
　　 b. Steden met meer dan een miljoen inwoners zijn wereldsteden.
　　　　 cities with more than a million inhabitants are metropolises
　　 b'. *Steden, met meer dan een miljoen inwoners, zijn wereldsteden.
　　 c. Kinderen ouder dan 5 jaar moeten betalen.
　　　　 children older than 5 year must　　 pay
　　　　 'Children over the age of five have to pay.'
　　 c'. *Kinderen, ouder dan 5 jaar, moeten betalen.

The restrictive modifiers in the primeless examples restrict the referent set of the noun phrase. This means that in all these sentences, the noun phrase without the modifier refers to a larger set of entities than the modified noun phrase: in (17a), it is predicated of only a subset of student that they will not get a pass; in (17b) the set of all cities is restricted to the ones with more than one million inhabitants and it is to this subset that the predication applies, and (17c) contends that it is only children over the age of five that have to pay.

　　 One way to account for the unacceptability of the primed examples in (17) is to appeal to our knowledge of the world by saying that since the modifier does not restrict the referent set, it will be taken to provide additional information about the full sets denoted by the nouns. This would mean that these sentences express two propositions which are both said to be true of the full denotations of the nouns. Example (17a'), for example, states that anyone who is a student will fail the exam, while at the same time all students are said to be lazy. In (17b') both propositions expressed are clearly false: not all cities have more than one million inhabitants and not all cities are metropolises. Similarly, in (17c') the implication that all children are more than five years old is false. It is not entirely clear, however, whether appealing to our knowledge of the world is sufficient to account for the unacceptability of the primed examples in (17), since this wrongly predicts that examples in which both propositions are true should be fully acceptable: this is the case in (18a&b), which are nevertheless dubious. For completeness' sake, note that the (textbook) example in (18c), in which a definite noun phrase refers to the species/family of whales, is fully acceptable.

(18) a. ??Een walvis, die　　 een zoogdier is, komt nooit aan land.
　　　　 a whale　　 which a mammal　 is comes never to land
　　　　 'A whale, which is a mammal, never comes ashore.'
　　 b. ??Walvissen, die　　 zoogdieren zijn, komen nooit aan land.
　　　　 whales,　　 which mammals　 are come never to land
　　　　 'Whales, which are mammals, never come ashore.'
　　 c. De walvis, die　　 een zoogdier is, komt nooit aan land.
　　　　 the whale which a mammal　 is, comes never ashore
　　　　 'The whale, which is a mammal, never comes ashore.'

II. Premodification

The distinction between prenominal restrictive and non-restrictive modifiers has received much less attention. Nevertheless, the same difference in function can be perceived as in the case of postmodification: restrictive premodifiers restrict the set of possible referents of the entire noun phrase, whereas non-restrictive premodifiers simply assign an additional property to all the members of the referent set in question. As a result, leaving out the premodifier will again affect the reference of the noun phrase as well as the presuppositions involved in the case of restrictive, but not in the case of non-restrictive modification. Consider the examples in (19), which contain a definite noun phrase with an adjectival premodifier.

(19) a. Caesar prees   de dappere Germanen.
          Caesar praised   the brave Germans
      b. De dertigjarige   dader   werd direct   gearresteerd.
          the thirty.year.old perpetrator was immediately arrested

In (19a&b), the adjectives *dappere* 'brave' and *dertigjarige* 'thirty-year-old' can be given either a restrictive or a non-restrictive interpretation. In the former case, the adjective is usually stressed and functions to distinguish the relevant subsets of brave Germans and thirty-year-old perpetrators from the larger sets denoted by the nouns *Germaan* 'German' and *dader* 'perpetrator'. Leaving out the adjective would, therefore, change the reference of the noun phrases in question. In these same constructions, however, the adjectives may also fulfill a non-restrictive function. In that case the adjective is normally not stressed and the presupposition is that all Germans are brave and that there was only one perpetrator, who happened to be thirty years old. The adjectives provide additional, descriptive information; without them the DPs are less informative but still refer to the same entities.

Since we have argued that noun phrases have the structure [$_{DP}$ D [$_{NP}$ ... N ...]], the examples in (19) show that non-restrictive modifiers can be DP-internal: the non-restrictive attributive adjectives in (19) are placed between the determiner and the noun, and therefore they cannot be placed at some level higher than the DP. This has been our main reason for assuming in (10) that the postnominal non-restrictive modifiers are also DP-internal. The claim that non-restrictive modifiers are DP-internal implies that the differences in function and scope between restrictive and non-restrictive modifiers must follow from the fact that they are attached at different levels within the noun phrase; given the fact that current generative grammar distinguishes several functional layers within the noun phrase in between DP and N, there will be ample opportunity to do this. Here we will not attempt to make the structure more precise; see Section 1.1.2.2.1 and Alexiadou et al. (2007: ch.3) for relevant discussion.

Clear instances of non-restrictively used adjectives are those adjectives modifying entities that are uniquely identifiable in a given context. This is the case, for instance, with proper nouns, such as *Westertoren* (the name of a well-known tower in Amsterdam) and *Amerika* 'America' in examples (20a&b). As the referent set of these proper nouns consists of one member only, restriction is not possible. The adjective can therefore only fulfill a non-restrictive, descriptive function.

(20) a. Links ziet u   de mooie Westertoren.
        left   see   you the beautiful Westertoren
        'On your left you see the beautiful Westertoren.'
    b. Het machtige Amerika doet wat   het wil.
        the mighty America   does what it   wants

Note that, occasionally, proper nouns can be modified by a restrictive adjective. In those cases, however, the proper nouns are no longer construed as having unique reference. Some examples are given in (21). For further details, see Section 1.2.1.2.1, sub II.

(21) a. Het 17e-eeuwse Nederland was een bloeiende natie; het 19e-eeuwse niet meer.
        the 17th-century Netherlands was a flourishing nation the 19th-century no more
        '17th-century Holland was a flourishing nation; 19th-century Holland no longer was.'
    b. Het gerestaureerde Centraal Station is veel ruimer   dan het oude.
        the restored Central Station   is much more.spacious than the old
        'The restored Central Station is much more spacious than the old station.'

In the case of an indefinite modified noun phrase, the adjective may again be either restrictive or non-restrictive, although the latter interpretation is much more difficult to achieve. Thus, in example (22a) the adjective *dappere* can receive only a restrictive interpretation, regardless of which part of the noun phrase receives primary stress. In all interpretations the set of brave Germans will be understood as forming a subset of the total set of Germans. In an example like (22b), on the other hand, stress may be a disambiguating factor. If the adjective is stressed, the implication is that there are more suspects, but only one that is thirty years old; as such the adjective has a restrictive function. Unstressed, the adjective may have a non-restrictive function: there is no implication as to the number of suspects and the adjective fulfills a purely descriptive function.

(22) a. Caesar prees   dappere Germanen.
        Caesar praised   brave Germans
    b. Een dertigjarige verdachte werd direct   gearresteerd.
        a thirty.year.old suspect   was   immediately arrested

When the head noun is a proper noun, the adjective can receive only a restrictive interpretation. In (23a&b) the prenominal modifying past participle *mooi verlichte* 'beautifully illuminated' and the adjective *machtig* 'mighty' are °stage-level predicates: if the property changes, so will, at least metaphorically speaking, the entity it is assigned to. This means that in these cases the referents of the proper nouns are no longer unique, which also explains the use of the indefinite article; cf. example (20).

(23) a. Links ziet u   een mooi verlichte Westertoren.
        left   see   you a beautifully illuminated Westertoren
        'On the left you see a beautifully illuminated Westertoren.'
    b. Een machtig Amerika zal doen wat   het wil.
        a mighty America   will do   what it wants

3.1.3. *Modification versus apposition*

Before we can proceed to discuss the various forms of modification within the DP, we need to pay some attention to the notion of apposition. So far we have distinguished two types of constructions, besides the nominal head, that can form part of a noun phrase: complements and modifiers. The representation we have used to reflect the relations between these various components is given in (24a-c). If we were to include appositions in this representation, this would mean adding an extra shell, possibly external to DP. This would lead to the representation in (24d).

(24) a. Complementation: [$_{DP}$ D ... [$_{NP}$ .. [N COMPL] ...] ...]
      b. Restrictive modification: [$_{DP}$ D ... [$_{NP}$ MOD$_{restr.}$ [N COMPL] MOD$_{restr.}$] ...]
      c. Non-restrictive modification: [$_{DP}$ D ... MOD$_{non-restr.}$ [$_{NP}$ ... N ...] MOD$_{non-restr..}$]
      d. Apposition [[$_{DP}$ D ... [$_{NP}$ ... N ...] ...] APP]

Since in many cases appositions can easily be confused with (non-restrictive) modifiers, we will give a description of their form, function and position.

I. The form of appositions

Appositions can appear in a variety of forms: as shown in example (25), they can take the form of an AP, a PP, a relative clause or a noun phrase; cf. Quirk et al. (1985) and Heringa (2012). Appositions resemble non-restrictive modifiers in that they usually follow the noun phrase they modify. In speaking, they can be easily recognized by a very distinct intonation break (a pause and usually a falling intonation much more pronounced than in the case of non-restrictive modifiers), separating them quite clearly from both preceding and following material, and emphasizing their parenthetical nature. In writing, they are separated off from the noun phrase by means of a comma or they are surrounded by dashes or parentheses. To avoid confusion with non-restrictive modifiers, we will use dashes in the following discussion.

(25) a. De bruid – uitgeput aan het eind van een lange dag – staat   links op de foto.
          the bride   exhausted at the end of a long day   stands left on the photo
          'The bride—exhausted at the end of a long day—is in the left of the picture.'
      b. De bruid – helemaal in het wit – staat links op de foto.
          the bride   entirely in the white   stands left on the photo
          'The bride—entirely in white—is in the left of the picture.'
      c. De bruid – die links op de foto te zien is – is gekleed in een bijzondere creatie.
          the bride   who left on the photo to see is is dressed in a special creation
          'The bride—who can be seen left in the picture—is dressed in a special creation.'
      d. De bruid – een jong, verlegen meisje – staat links op de foto.
          the bride   a young bashful girl   stands left on the photo
          'The bride—a young, bashful girl—is in the left of the picture.'

In traditional grammar the notion of apposition is often restricted to noun phrases like *een jong, verlegen meisje* in (25d), which can never be interpreted as a restrictive or non-restrictive modifier. We do not see any principled reason, however, not to extend this notion to cases like (25a-c).

II. The function of appositions

In speech, appositions are typically used as corrections or clarifications; they are added as an "afterthought", and provide additional information that the speaker realizes—a little late—that the addressee might need. Since true corrections and clarifications only occur in spontaneous speech, in other types of text, appositions are used to characterize certain information as backgrounded but at the same time important enough to be mentioned. The additional information provided by the apposition can relate in several ways to the information of the modified noun phrase.

A. non-restrictive and restrictive appositions

Appositions can serve either a non-restrictive or a restrictive function. The former is clearly the case in the examples in (25), where the appositive provides additional information about the referent of the modified noun phrase. The restrictive use is illustrated by the sentences in example (26): in (26a) we are dealing with an appositional PP, in (26b) with an appositional relative clause, and in (26c&d) with noun phrases; we have not been able to construct restrictive examples with appositionally used adjectives.

(26) a.   Moderne horloges – uit Zwitserland althans – lopen altijd   gelijk.
           modern watches   from Switzerland at.least run   always on.time
           'Modern watches—from Switzerland at least—always keep good time.'
     b.   Moderne horloges – die uit Zw. komen althans –   lopen altijd   gelijk.
           modern watches   which from Sw. come at.least run   always on.time
           'Modern watches—those that come from Sw. at least—always keep good time.'
     c.   De boeken – die [$_N$ e] op tafel   tenminste – zijn van mij.
           the books   those on the.table anyway   are of me
           'The books—those on the table anyway—are mine.'
     d.   De hele familie – zijn vader, moeder en zusters in ieder geval – was trots.
           the whole family   his father mother and sisters at least   was proud

As can be seen from the examples in (26), appositions may include adverbial material like *althans/tenminste/in ieder geval* 'at least', which are used to explicitly mark the restrictive function of the apposition. Example (27) shows that these markers cannot form part of a restrictive modifier, so we may take the presence of such markers as an extra indication that we are dealing with an apposition.

(27) a.   *Moderne horloges uit Zwitserland althans   lopen altijd   gelijk.
              modern watches   from Switzerland at.least run   always on.time
     b.   *Moderne horloges die uit Zwitserland komen althans   lopen altijd   gelijk.
              modern watches   which from Switzerland come at.least run   always on.time

B. Identification, attribution and inclusion

The notions of identification, attribution and inclusion are only relevant when the apposition is a noun phrase, and are related to the referential/denotational properties of the two noun phrases (Quirk et al. 1985; Heringa & De Vries 2008; Heringa 2012). We are dealing with identification when the referents/denotations of the two noun phrases are identical. The examples in (28) show that the identification relation between the modified noun phrase and the apposition can be made explicit

by means of explicit markers like *weet je wel* 'you know', *oftewel* 'that is' and *ik bedoel* 'I mean'.

(28)   • Identification
　　a.　Marie – mijn oudste zuster　(weet je wel) – komt　morgen　langs.
　　　　Marie　my eldest sister　　you know　　comes　tomorrow　by
　　b.　De homo sapiens sapiens –　(oftewel) de moderne mens – ...
　　　　the homo sapiens sapiens　　that is　the modern humans
　　c.　Walvissen en dolfijnen –　(ik bedoel) zoogdieren die altijd in het water leven – ...
　　　　whales and dolphins　　I mean　　mammals that always in the water live

We are dealing with attribution when the referent set/denotation of the modified noun phrase is included in the referent set/denotation of the apposition. The examples in (29) show that the attribution relation can be made explicit by means of explicit markers like *zoals algemeen bekend* 'as is commonly known', *overigens* 'as a matter of fact', and *in feite* 'in fact'.

(29)   • Attribution
　　a.　Noam Chomsky – (zoals algemeen bekend)　een belangrijk taalkundige – ...
　　　　Noam Chomsky　　as is commonly known　　an important linguist
　　b.　De homo sapiens –　(overigens)　　　een van de jongste diersoorten – ...
　　　　the homo sapiens　as a matter of fact　one of the most.recent animal.species
　　c.　Walvissen en dolfijnen –　(in feite)　alle zoogdieren die in het water leven – ...
　　　　whales and dolphins　　in fact　　all mammals that in the water live

Inclusion, finally, can be seen as the inverse of attribution; in this case the referent set/denotation of the apposition is included in the referent set/denotation of the modified noun phrase. Two subcases can be distinguished: the apposition restricts the referent set/denotation of the modified noun phrase, or the apposition is non-restrictive but provides an example taken from the referent set of the modified noun phrase. Note that in all these cases an explicit marker of the inclusion relation is required.

(30)   • Inclusion (restrictive use)
　　a.　Verschillende taalkundigen – *(vooral) generatieve –　　hebben betoogd ...
　　　　several linguists　　　　　especially generative.ones　have argued
　　b.　Primaten –　*(in het bijzonder)　de homo sapiens –　zijn ...
　　　　primates　　particularly　　　the homo sapiens　are
　　c.　Zoogdieren die　in het water leven –　*(met name) dolfijnen –　zijn ...
　　　　mammals　that in the water live　　notably　　dolphins　　are

(31)   • Inclusion (exemplification)
　　a.　Verschillende taalkundigen – *(waaronder)　Chomsky – hebben betoogd ...
　　　　several linguists　　　　　　among.which Chomsky　have argued
　　b.　Primaten –　zoals de homo sapiens – zijn ...
　　　　primates　　like the homo sapiens　are
　　c.　Zoogdieren die　in het water　leven –　*(bijvoorbeeld) walvissen – zijn ...
　　　　mammals　that in the water　live　　for.example　whales　　are

III. The position of appositions

The examples given earlier show that appositions usually follow the DP to which they are related. At first sight, adjectival and participial appositions occasionally seem to appear in prenominal position, as in the examples in (32). However, these constructions are largely confined to written language (or scripted speech). In spoken language, it is not easy to pronounce the examples with the given intonation contour: the intonation break preceding the noun is especially difficult to realize in a natural way. It may therefore be the case that we are simply dealing with non-restrictive prenominal modifiers that the writer has set within dashes or parenthesis in order to obtain a certain stylistic effect. Note that if we were dealing with appositions in these examples, we would have to drop our earlier assumption in (24) that appositions are not within DP; cf. the discussion of the position of non-restrictive modifiers below example (19) in Section 3.1.2, sub II.

(32) a.   De –   aan het eind van de dag totaal uitgeputte –   bruid staat links op de foto.
           the   at the end of the day totally exhausted   bride stands left on the photo
           'The—at the end of the day totally exhausted—bride is in the left of the picture.'
      b.   De –   in een heel bijzondere creatie geklede –   bruid staat   links op de foto.
           the   in a very special creation dressed   bride stands left on the photo

   Sometimes it is possible to extrapose the apposition. In that case, the information is very clearly added as an afterthought, either with the purpose of correcting or clarifying the information given within the related noun phrase, or with the purpose of giving extra information about the referent of this noun phrase.

(33) a.   De bruid ziet u links op de foto –   uitgeput aan het eind van een lange dag.
           the bride see you left on the photo exhausted at the end of a long day
           'The bride is in the left of the picture; she's exhausted at the end of the day.'
      b.   Moderne horloges lopen altijd   gelijk – die   uit Zwitserland   althans.
           modern watches   run   always on.time those from Switzerland at.least
           'Modern watches always keep good time; those from Switzerland anyway.'
      c.   De boeken zijn van mij – die   op tafel   tenminste.
           the books   are   of me   those on the.table at.least
      d.   De hele familie   was trots –   zijn vader, moeder en zusters in ieder geval.
           the whole family was proud   his father mother and sisters   at least

IV. Conclusion

The discussion of appositions in this section seems to justify the conclusion that, although they may bear a certain resemblance to modifiers, appositions should be considered as a separate category. In view of their parenthetical nature, as well as the syntactic behavior they display, it seems they have to be placed outside the DP. Although there is clearly a (referential or predicative) relation between the apposition and the DP, the exact nature of this relation remains unclear. It has been popular to analyze appositions as reduced relative clauses: this might be supported by the fact that some of the cases above involve adverbial markers and can indeed be paraphrased by means of non-reduced relative clauses. It must also be noted, however, that example (29c), which involves an attribution relation, and the

examples in (30) and (31), which involve an inclusion relation, cannot be paraphrased in this way; see also McCawley (1998: ch.13) for discussion.

3.2. Premodification

Premodification within the noun phrase is usually done by means of adjectival phrases. In addition, present and past participles and so-called modal infinitives can be used as modifiers in prenominal position. This section will be brief since a detailed discussion of the syntactic properties and various uses of these modifiers can be found in Chapter A5 and Section A9.2.

3.2.1. Adjectival phrases

The examples in Table 2 show that attributive adjectives occur in prenominal position, and can be inflected with the attributive ending *-e* (pronounced as schwa /ə/). The distribution of the inflection depends on the gender of the noun it modifies. When the noun is masculine or feminine, that is, when it belongs to the *de*-group, the adjective normally is inflected; see Section A5.1 for exceptions. When the noun is neuter, that is, belongs to the *het*-group, the *-e* ending only appears in definite and plural noun phrases: attributive modifiers of singular indefinite count nouns and indefinite non-count nouns are not inflected.

Table 2: Attributive adjectives

COUNT NOUNS	SINGULAR		PLURAL	
	DE-noun	HET-noun	DE-noun	HET-noun
DEFINITE	*de oude stoel* the old chair	*het oude boek* the old book	*de oude stoelen* the old chairs	*de oude boeken* the old books
INDEFINITE	*een oude stoel* an old chair	*een oud-∅ boek* an old book	*oude stoelen* old chairs	*oude boeken* old books

NON-COUNT NOUNS	DE-noun	HET-noun
DEFINITE	*de lekkere rijst* the tasty rice	*het lekkere bier* tasty beer
INDEFINITE	*lekkere rijst* tasty rice	*lekker-∅ bier* tasty beer

Attributive adjectives denote a property of the noun they modify. In most cases they have a restrictive function: by attributing the property in question, they restrict the denotation of the head noun. Thus in example (34a), the noun phrase as a whole refers to a subset of the set denoted by the noun.

(34) a. Ik ben dol op blauwe druiven.
      I am fond of blue grapes
    b. De blauwe druiven zijn duur   dit jaar.
      the blue grapes   are expensive this year

Under certain circumstances, however, an attributive adjective can also be given a non-restrictive interpretation. This is clear from example (35a), which is acceptable

even if there is just a single crown prince in the active domain of discourse: this means that the function of the attributive adjectives is not to restrict the denotation of the head noun *crown prince*, but just to provide more information about the referent of the noun phrase. Example (35b) is ambiguous between the two readings: under the restrictive reading of the adjective *dappere* 'brave', it is contended that Caesar only praised a subset of the Germans; under the non-restrictive interpretation Caesar praises all Germans, who are said to all have the property of being brave. Note that this sentence is only ambiguous in writing: in speaking, the ambiguity will be resolved by the fact that on the restrictive reading the adjective will be emphasized; see Sections 3.1.2, sub II, for more discussion.

(35) a. De lange, blonde kroonprins   trok   in China veel aandacht.
          the tall   fair   crown.prince drew in China much attention
          'The tall, fair crown prince attracted much attention in China.'
      b. Julius Caesar prees   de dappere Germanen.
          Julius Caesar praised the brave Germans

3.2.2. *Present and past participial phrases*

Prenominal modifiers may also take the form of a past or present participial phrase. The modified noun stands in a certain °thematic relation to the prenominal participle. When the modifier is a past participle, the referent of the noun phrase will be interpreted as the theme of the participle. Hence, the participle must be derived from a (di-)transitive or an unaccusative verb, as in (36b-d); using a past participle derived from an intransitive verb, as in (36a), leads to ungrammaticality.

(36) a. *de gelachen jongen   [intransitive]
          the laughed   boy
      b. de geschuurde muur   [transitive]
          the sanded   wall
      c. de hem aangeboden baan   [ditransitive]
          the him prt.-offered job
      d. de gevallen bladeren   [unaccusative]
          the fallen   leaves

In the case of a present participle, the referent of the noun phrase is interpreted as the agent of the participle if the verb is intransitive or (di-)transitive, or as the theme if the verb is unaccusative. Examples can be found in (37).

(37) a. de lachende jongen   [intransitive]
          the laughing boy
      b. de bier drinkende man   [transitive]
          the beer drinking   man
      c. de ons advies gevende instanties   [ditransitive]
          the us   advise giving   organizations
      d. de vallende bladeren   [unaccusative]
          the falling   leaves

The difference between (36d) and (37d) is aspectual in nature: the former expresses perfective, and the latter imperfective aspect. For a more detailed discussion of the attributive use of participles, see Section A9.2. For a discussion of postmodification by participial phrases, see Section 3.3.5.2.

3.2.3. Modal infinitives

A third type of attributive premodifier is the modal infinitive. These modifiers are always preceded by the infinitival marker *te*, and express some notion of ability or obligation. The modified noun corresponds to the theme argument of a (di-)transitive verb: intransitive and unaccusative verbs normally cannot occur as modal infinitives.

(38) a. *de te lachen jongen   [intransitive]
         the to laugh boy
     b. de te schuren muur   [transitive]
         the to sand   wall
         'the wall to be sanded'
     c. de Jan aan te bieden boeken   [ditransitive]
         the Jan prt. to offer   books
         'the book to be offered to Jan'
     d. *de te vallen bladeren   [unaccusative]
         the to fall   leaves

For a more detailed discussion of the modal infinitives we refer the reader to Section A9.2. Here, we want to conclude by pointing out that the modal infinitives must not be confused with the postnominal infinitival modifiers that will be discussed in Section 3.3.3, where the antecedent is interpreted as coreferential with some phonetically silent element within the infinitival clause: the direct object in (39a), and the nominal part of, respectively, a PP-complement and PP-adjunct in (39b&c).

(39) a. Dit is een boek [om PRO in één adem uit te lezen].
         this is a book   COMP   in one breath prt. to read
         'This is a book to read out in the same breath.'
     b. een schilderij [om PRO   lang naar te kijken]
         a painting   COMP   long at   to look
         'a painting to look at for a long time'
     c. De machine [om PRO   deze muur (mee) te schuren is erg duur].
         the machine COMP   this wall with   to sand   is very expensive
         'This machine, to sand walls with, is very expensive.'

3.3. Postmodification

This section discusses postmodification of nouns. Postmodifiers of nouns normally take the form of an adpositional phrase or a clause. The adpositional modifiers will be discussed in Section 3.3.1. Clausal postmodifiers come in different sorts, but mostly in the form of a finite relative clause or an infinitival construction, which are discussed in 3.3.2 and 3.3.3, respectively. Section 3.3.4 will discuss a special case of postmodification involving restrictive postmodifiers of content nouns, which in a

sense can be considered the counterpart of the complement clauses of these nouns discussed in Section 2.3. Sections 3.3.5 and 3.3.6 conclude with a discussion of the use of adjectival and adverbial phrases as postmodifiers.

3.3.1. Adpositional phrases

This section is concerned with PPs functioning as postnominal modifiers. Some examples of noun phrases containing such a modifier are given in (40).

(40)   • Prepositional phrases
     a.   tulpen uit Amsterdam
          tulips   from Amsterdam
     b.   een meisje met rood haar
          a   girl   with red hair
     c.   een cadeautje voor mijn moeder
          a   present   for my mother
     d.   de auto van mijn buurman
          the car   of my neighbor
          'my neighbor's car'
     e.   het gekuch   tijdens de voorstelling
          the coughing during the performance

The examples in (41) show that the postnominal PP-modifier need not be prepositional in nature, but can also be post- or circumpositional.

(41)   • Post- and circumpositional phrases
     a.   de weg de berg   op
          the road the mountain up
          'the road up the mountain'
     b.   het kanaal onder de weg door
          the channel under the road through
          'the channel underneath the road'

Given that the prepositions are by far the largest group of adpositions and given that they behave similarly to the post- and circumpositions in the relevant respects, we will mainly use them in the examples to follow. For an extensive treatment of the different types of adpositions, see Broekhuis (to appear).

    The restrictive PP-modifiers in (40) and (41) reduce the set of potential referents of the nominal head: in (40a) the PP restricts the set of all tulips to those from Amsterdam, in (40b) reference is made not to any girl, but to a girl with red hair, etc. Although PP-modifiers are typically restrictive, they can also be used non-restrictively, in which case they merely provide extra information about the set denoted by the nominal head. In what follows we will discuss these two uses of postnominal PP-modifiers in some detail.

3.3.1.1. Restrictive PP-modifiers

In speech, the restrictive use of PP-modifiers can be recognized by the fact that the head noun and the PP form a single intonation unit. In writing, restrictive PP-modifiers are not characterized by any typographical features either; it is rather the

absence of such features that makes them recognizable in written text. For examples, see Section 3.1.1, sub I.

Section 3.1 has shown that restrictive modifiers serve to reduce the referent set of the noun phrase by restricting the denotation of the nominal head. This also holds for restrictive PP-modifiers in postnominal position, which may therefore be crucial for determining the truth conditions of the sentence and/or for the identifiability of the intended referent. In (42), for example, the predications only hold for the restricted sets: without the PP the sentences are grammatical, but the truth value of the sentence may change from true to false.

(42) a. Moderne horloges (uit Zwitserland) lopen altijd gelijk.
      modern watches from Switzerland run always on time
      'Modern watches (from Switzerland) always keep good time.'
   b. Je hebt niets aan een computer (met zo weinig geheugen).
      you have nothing on a computer with so little memory

In (43), the PPs restrict the set denoted by the nominal head to exactly one, thus enabling the hearer to pick out the intended referent. Without the PPs, the sentences remain grammatical, but the referent may become unidentifiable for the hearer. If so, the sentence as a whole will become infelicitous as well due to the fact that the use of a definite determiner implies identifiability of the intended referent, while the information given in the noun phrase is insufficient to warrant that implication.

(43) a. De auto (van de buurman) is in beslag genomen.
      the car of the neighbor is confiscated
      'The neighbor's car has been confiscated.'
   b. Het boek (op de tafel) is van mij.
      the book on the table is of me
      'The book on the table is mine.'

Now that we have seen that the function of restrictive PP-modifiers is to reduce the set of potential referents of the noun phrase as a whole, we will consider in the subsections below what the result of this is with several types of noun phrases.

I. Indefinite noun phrases

Indefinite noun phrases are not identifiable for the speaker and/or the addressee. This holds also for modified noun phrases. The effect of adding a PP-modifier is simply that the relevant set is smaller in size: in example (44c), for instance, the speaker expresses that the entities he has in mind are part of the subset of tulips that have the property of being from Amsterdam.

(44) a. Ik ben op zoek naar [een cadeautje voor mijn moeder].
      I am looking for a present for my mother
      'I am looking for a present for my mother.'
   b. Hij heeft [een meisje met rood haar] ontmoet.
      he has a girl with red hair met
      'He has met a girl with red hair.'

    c.   Ik heb [tulpen uit Amsterdam]   voor je meegenomen.
        I   have tulips from Amsterdam for you prt.-brought
        'I have brought you tulips from Amsterdam.'

The noun phrases in (44) can be pronounced with neutral intonation or with accent on the PP. In the former case, the speaker simply refers to a (possibly empty) set of entities with the desired properties. In the latter case, exemplified in (45), two sets are (implicitly or explicitly) contrasted: the first set is characterized by having the property denoted by the nominal head, but lacking the property denoted in the PP, whereas the second has both properties. Example (45b), for example, contrasts the set of girls with red hair with the set of girls with hair of some other color.

(45) a.   Ik ben op zoek naar [een cadeautje voor mijn MOEDER]; niet voor mijn ZUS.
        I am looking   for a present   for my mother   not for my sister
    b.   Hij heeft [een meisje met ROOD haar] ontmoet; niet met BLOND haar.
        he   has   a girl   with red hair   met   not with blond hair
    c.   Ik heb [tulpen uit AMSTERDAM] voor je meegenomen; niet uit TILBURG.
        I   have tulips from Amsterdam for you prt.-brought   not from Tilburg

Indefinite constructions of this type can also be used generically, both with singular and plural noun phrases. In example (46a), for instance, predication is said to hold for any watch from Switzerland, while in (46b) it is claimed that all tomatoes from tropical countries are delicious. Again, it is not contended that the predications hold of the larger sets of watches and tomatoes.

(46) a.   [Een horloge uit Zwitserland] loopt altijd   gelijk.
         a watch   from Switzerland runs always   on.time
        'A watch from Switzerland always keeps good time.'
    b.   [Tomaten uit tropische landen]   zijn erg lekker.
         tomatoes from tropical countries are   very nice

II. Quantified noun phrases

In quantified noun phrases, restrictive PP-modifiers again fulfill the function of restricting the denotation of the NP. As the PPs are part of the NP-domains and therefore fall within the °scope of the quantifier, they serve to restrict the domain of the quantifier. In other words, in (47a) the PP *voor mijn moeder* 'for my mother' first restricts the set of possible presents, and subsequently the noun phrase as a whole is quantified by *enkele* 'some'. As a result of these scope relations, the sentence in (47a) says nothing about the total number of presents I am looking for (which may be many), but only about the number of presents for my mother. Likewise, in (47b) the predicate of being tasty is not assigned to all tomatoes, but only to those from Italy, while in (47c) not every book, but only the ones with a red dot, are reduced in price.

(47) a.   Ik ben op zoek naar [enkele cadeautjes voor mijn moeder].
        I   am looking for   some presents   for my mother
    b.   [Alle tomaten uit Italië] zijn lekker.
         all tomatoes   from Italy are delicious

   c.   [Elk boek   met een rode stip] is in prijs   verlaagd.
         every book with a red dot   is in price reduced
         'Every book with a red dot has been reduced in price.'

III. Definite noun phrases

In definite noun phrases, the function of the PP is to enable the hearer to uniquely identify the intended referent set in the given discourse situation. Example (48a), for example, can be used in a context in which one may be expected to bring presents for one's mother. Note that, just as in the case of indefinite noun phrases in (45), stressing the PP implies the existence of yet another set of presents: in (48b), in which the PP is contrastively stressed, the hearer is assumed to know that the speaker has bought presents for a number of people.

(48) a.   Ik ben   [de cadeautjes voor mijn moeder] vergeten.
          I   have   the presents   for my mother   forgotten
          'I have forgotten the presents for my mother.'
     b.   Ik ben [de cadeautjes voor mijn MOEDER] vergeten.

When the noun phrase is singular, the referent set is said to contain exactly one referent; thus, the most likely reading of (49a) is one in which the neighbor has only one car. This effect seems lost or at least less prominent in contrastive contexts: (49b) simply expresses that one car was confiscated, and that this happened to be a car owned by my neighbor (not by someone else).

(49) a.   Ze hebben [de auto van mijn buurman] in beslag genomen.
          they have   the car of my neighbor   confiscated
          'They have confiscated my neighbor's car.'
     b.   Ze hebben [de auto van mijn BUURMAN] in beslag genomen.

The examples in (50) show that, in the case of locational prepositions, the PP-modifier can be contrasted in several ways. First consider the contrast between the PPs in the (a)- and the (b)-examples: the PP in (50a) is not contrasted and merely serves to distinguish the book on the table from any other book, whereas the PPs in the (b)-examples are contrasted, and thus imply a second set of books that is not on the table. In (50b), contrastive accent is placed on the complement of the preposition, *de tafel* 'the table', and the alternative set of books is consequently identified by its relation to some object other than the table. In (50b′), on the other hand, contrastive accent falls on the preposition, and the alternative set of books is consequently identified by having a different orientation with respect to the table.

(50) a.   [De boeken op de tafel] zijn van mij; de andere boeken niet.
          the books on the table are of me   the other books   not
          'The books on the table are mine; the other books aren't.'
     b.   [De boeken op de TAFEL] zijn van MIJ; die in de KAST   zijn van JAN.
          the books on the table   are of me   those in the bookcase are of Jan
     b′. [De boeken OP de tafel] zijn van mij; [die ONDER de tafel] zijn van Jan.
          the books on the table are of me   those under the table are of Jan

Generally speaking, when a singular definite noun phrase is modified by a PP, the nominal complement of the preposition is also definite, as shown in (51a&b). Given that definiteness typically indicates identifiability, this is not surprising; if the entity itself is identifiable, so will the properties referred to by the PP. Alternatively, one could argue that since the function of the modifier is to enable the addressee to identify the overall referent, we again expect the presence of a definite noun phrase in the PP.

(51) a. de emmer met het/$^{??}$een gat
          the bucket with the/a hole
      b. het huis   op de/$^{??}$een hoek
          the house   at the/a corner

As shown in (52), plural definite noun phrases can be modified by a PP when the noun phrase complement of the preposition is indefinite. In that case, the DP refers to a contextually determined set of entities, and the function of the PP-modifier is to restrict this set to those entities that have the property expressed by the PP.

(52) a. de emmers met een/*het gat
          the buckets with a/the hole
      b. de huizen op een/de hoek
          the houses at a/the corner

Note that the referent set of (52b) varies with the choice of the determiner: when we are dealing with the definite determiner *de*, the set consists of houses situated at a contextually determined street corner; when we are dealing with the indefinite determiner *een*, the set consists of the subset of houses situated on some street corner. For a similar reason, example (52a) with a definite noun phrase complement is unacceptable because it forces a reading in which there is a particular (identifiable) hole in each of the buckets.

The (a)-examples in (53) show that singular indefinite noun phrases have the converse property of not allowing PP-modifiers when the noun phrase complement of the preposition is definite: once a particular property is identifiable or known, so must be the entity referred to by the noun phrase as a whole. The (b)-examples are only acceptable with a definite PP-modifier when it is established knowledge that there is more than one house located at the street corner in question.

(53) a. een emmer met een/$^{??}$het gat   a′. emmers met een/$^{??}$het gat
          a bucket   with a/the hole   buckets with a/the hole
      b. een huis   op een/$^{#}$de hoek   b′. huizen op een/$^{#}$de hoek
          a house   at a/the corner   houses at a/the corner

If this line of reasoning holds water, we must conclude that in inalienable possession constructions, the addition of an indefinite *van*-PP to a definite noun phrase may make the definite noun phrase sufficiently "indefinite" to act as the modifier of an indefinite noun phrase. This is illustrated by the examples in (54), which are acceptable in any context.

(54) a. Ik wil   graag een huis   op de hoek van een straat kopen.
          I   want gladly a house   on the corner of a street   buy
          'I would like to buy a house on the corner of a street.'
     b. Zij willen allemaal graag   huizen op de hoek van een straat kopen.
          they want   all   gladly houses on the corner of a street   buy
          'They would all like to buy a house on the corner of a street.'

IV. Noun phrases with a demonstrative pronoun

Combinations of a demonstrative determiner and a restrictive PP-modifier are not very frequent. This is not surprising, since in most cases the use of a demonstrative, whether deictic or anaphoric, suggests identifiability of the referent, thus rendering the use of a restrictive PP superfluous. This accounts for the fact that in neutral contexts, with a neutral intonation, the sentences in (55) are marked.

(55) a. ??Deze auto van mijn buurman   rijdt   erg zuinig.
            this car   of my neighbor   drives   very economically
     b. *?Dit boek met een rode stip   is in prijs   verlaagd.
            this book with a red dot   is in price   reduced

There are, however, a number of special cases, in which the use of a PP-modifier gives rise to an acceptable result.

A. Contrastive contexts

As in the case of noun phrases with a definite article, the PP may be used in contrastive contexts to distinguish the intended referent from some other available entities. In the case of a deictic demonstrative, accent will fall on the demonstrative as in example (56a). If the demonstrative is used anaphorically, accent will be placed on (part of) the noun phrase within the PP, as in example (56b), or on the preposition, as in example (56c).

(56) a. Bedoelt u   DEZE auto uit Amerika, of DIE (auto uit Amerika)?
          mean   you this car   from America or that car from America)
     b. Die auto uit AMERIKA heeft vier airbags; die uit JAPAN   twee.
          that car   from America has   four airbags that from Japan two
     c. Die auto MET spoilers is veel sneller dan die (auto) ZONDER (spoilers).
          that car   with spoilers is much faster that that car   without spoilers

B. Noun phrases referring to a type

Constituents containing a demonstrative determiner and a restrictive PP-modifier are also acceptable when the nominal denotes a TYPE rather than a TOKEN. Thus in (57a) reference is made not to a particular car but to a particular type of car, which is available with or without air conditioning. In (57b) reference is made to the contents of the book rather than to the physical object.

(57) a. Deze (zelfde) auto met airconditioning   is haast   niet te verkrijgen.
          this   same   car with air.conditioning is almost not   to obtain
          'This (same) car with air conditioning is hardly available.'

b. Dit(zelfde) boek met een harde kaft is veel   duurder.
   this.same   book with a hard cover   is much more.expensive
   'This (same) book in hardcover is much more expensive.'

C. Noun phrases invoking known information

Furthermore, constructions like these are common with distal demonstratives when used to (re-)invoke certain referents that are part of the domain of discourse. An example like (58) is completely acceptable in a context in which there has been mention of the fact that we should not forget to bring the present in question. In colloquial Dutch, postnominal *van*-PPs are often used to identify persons that are not part of the active domain of discourse, but can still be assumed to be familiar to the hearer; see Section 5.2.3.2.2, sub II, for discussion.

(58) a. ?Ik ben   dat cadeautje voor mijn moeder nou toch nog vergeten.
          I   have   that present   for my mother   now still prt. forgotten
          'Now, I've still forgotten that present for my mother.'
      b. Hé, dat is die man   van dat reclamespotje!
          hey that is that man   from the commercial
          'Hey, that is the man from this commercial!'
      c. Dat kind van hiernaast   huilt de hele dag.
          that child of next.door   cries the whole day
          'That child next door is crying all day.'

V. Noun phrases with a possessive pronoun, personal pronouns and proper nouns

Restrictive PP-modifiers cannot readily be used to modify constructions with possessive pronouns, personal pronouns or proper nouns. In all cases, the referent of the noun phrase is assumed to be identifiable independently from the information provided by the PP-modifier, which is therefore superfluous. Nevertheless there are certain cases in which adding a restrictive PP-modifier is possible. These will be discussed in the following subsections.

A. Noun phrases with a possessive pronoun

PP-modifiers can be used in constructions with possessive pronouns, but only when the possessive construction by itself does not uniquely identify the intended referent. Thus, example (59) is perfectly acceptable provided the speaker owns at least one other watch.

(59)   Ik ben mijn horloge met het zwarte bandje kwijt.
          I   am   my watch   with the black strap   lost
          'I have mislaid my watch with the black strap.'

Constructions like (59) are typically used for things associated with the body that are normally referred to by means of a possessive phrase: *mijn horloge* 'my watch'. PP-modifiers are also frequent with nouns denoting family members or other human relationships; the examples in (60) are all acceptable, the implication being that the speaker has more than one cousin, aunt and uncle, or friend and that the PP serves to uniquely identify the referent for the hearer.

(60) a. Onze neef (uit Amerika) komt   vanavond ook.
         our cousin from America comes tonight   also
         'Our cousin (from America) is also coming tonight.'
    b. Mijn tante en oom (uit Laren) zijn morgen   40 jaar   getrouwd.
         my aunt and uncle from Laren are tomorrow 40 years   married
         'My aunt and uncle (from Laren) will be married 40 years tomorrow.'
    c. Mijn vriendin (met die zes kinderen) komt   vanavond eten.
         my friend   with those six children comes tonight   eat
         'My friend who has six children is coming to dinner tonight.'

It must be noted, however, that the possessive constructions in (60) may sometimes also be used in contexts where the PP does not fulfill an identifying function, in which case they come close to indefinite expressions (e.g., *een neef van me uit Amerika* 'a cousin of mine from America'); see Section 5.2.2.2.1 for discussion.

   In most other cases, co-occurrence of a possessive determiner and a PP-modifier is odd, even in contrastive contexts like (61a-c). Given that replacement of the possessive pronouns by a definite article yields felicitous sentences, we may conclude that it is not definiteness that is at stake here.

(61) a. $^{??}$Mijn boeken op de tafel   gaan over de oorlog (die in de kast niet).
         my books   on the table go   about the war   those in the bookcase not
         'My books on the table are about the war (those in the bookcase aren't).'
    b. $^?$Onze bloemen in de tuin   doen het goed (die   in de kamer minder).
         our flowers   in the garden do   it   well   those in the room   less
         'Our flowers in the garden are doing well (those in the room not so well).'
    c. $^?$Mijn buurman met de BMW   gaat   morgen   op vakantie.
         my neighbor   with the BMW goes   tomorrow   on holiday
         'My neighbor with the BMW is going on holiday tomorrow.'

Perhaps the degree of acceptability also depends on the form of the PP-modifier: when the modifier contains a bare noun phrase, as in (62), the construction seems to improve. Note, however, that these cases with bare noun phrases generally involve fixed collocations; cf. 5.1.2.3, sub II.

(62)   Mijn boeken op tafel/zolder gaan over WO II   (die in de kast niet).
         my books   on table/attic   go   about WW II those in the bookcase not
         'My books on the table/in the attic are about WW II (those in the bookcase aren't).'

B. Personal pronouns

With personal pronouns the use of PP-modifiers is severely restricted. Once again, this is not surprising, since personal pronouns are normally only used when the intended referent is assumed to be uniquely identifiable in the given context. Nevertheless, PP-modifiers can be used if the referent is not uniquely identifiable, as for instance with the deictically used pronouns in (63a&b).

(63) a. Zij   met die blauwe blouse is mijn buurvrouw.
         she   with the blue blouse   is my neighbor
    b. Hij   bij het raam is mijn broer.
         he   at the window is my brother

In colloquial Dutch it is common to modify personal pronouns by a *van*-PP containing a phrase mentioning a location associated with the referent in order to identify the intended referent, as in (64a&b). The phrase as a whole differs from those in (63) in that it is often used rather disparagingly. A special use of this construction is (64c), where the preposition *van* is followed by the family name of the person in question.

(64) a. Ik heb hem van hiernaast al   in geen tijden meer   gezien.
         I   have him of next.door already in no times   anymore seen
         'Him from next door I haven't seen for ages.'
     b. Zij van de overkant   zit   de hele dag   voor het raam.
         she from the other.side sits the whole day for the window
         'She from across sits at the window all day.'
     c. Zij van Jansen   heeft een nieuwe baan.
         she from Jansen has   a new job
         'The Jansen woman has a new job.'

C. Proper nouns

Restrictive PP-modifiers can only be used to modify proper nouns under special circumstances. Once again, this is not surprising: proper nouns normally have unique reference in a given discourse situation, which means that their referent set cannot be further restricted. There are, however, circumstances in which proper nouns do not refer uniquely, as for instance when in a given context there are more persons by the same name.

(65) a. Jan van hiernaast komt   vanavond op visite.
         Jan of next.door   comes tonight   on visit
         'Jan from next door is coming to visit us tonight.'
     b. Piet van Jan en Marie heeft een nieuwe baan.
         Piet of Jan and Marie has   a new job
     c. Marie uit Tilburg   heeft gisteren   opgebeld.
         Marie from Tilburg has   yesterday prt.-called
         'Marie from Tilburg called yesterday.'

Another situation in which a proper noun can be followed by a restrictive PP-modifier is that in which it is not the (physical) entity that is referred to, but a person's or object's characteristics. As these may change according to the circumstances, we are no longer dealing with a uniquely identifiable entity, as a result of which identification by a restrictive PP becomes possible. Constructions of this kind are typically used in contrastive contexts.

(66) a. Koningin Beatrix op vakantie is heel iemand anders
         queen Beatrix on holiday   is quite someone else
         dan Koningin Beatrix in functie.
         than Queen Beatrix   in function
         'Queen Beatrix on holiday is quite a different person from Queen Beatrix in office.'

b. Jan in Amerika is niet dezelfde persoon als Jan in Holland.
     Jan in America is not the.same person as Jan in Holland
c. In het Amsterdam uit mijn kinderjaren waren er   haast   geen auto's.
     in the Amsterdam of my childhood   were   there virtually no cars
     'There were virtually no cars in the Amsterdam of my youth.'

3.3.1.2. Non-restrictive PP-modifiers

In speech, non-restrictive PPs are typically separated from their nominal head by an intonation break. In writing, this is represented by placing the non-restrictive PP-modifiers between commas. Some examples are given in (67).

(67) a. Jan, op vakantie in Frankrijk, weet   nog van niets.
          Jan on holiday in France   knows yet of nothing
          'Jan, on holiday in France, doesn't know anything yet.'
      b. De boeken, in pakken van 20 stuks, stonden klaar voor verzending.
          the books   in parcels of 20 pieces stood   ready for shipping
          'The books, in parcels of 20, were ready for shipping.'
      c. Dat witte huis,   tegenover de bibliotheek, willen we graag   kopen.
          that white house opposite the library   want   we gladly buy
          'That white house, opposite the library, we'd very much like to buy.'
      d. Kelners, met smetteloos witte overhemden, liepen   af en aan.
          waiters   with spotless white shirts   walked off and on
          'Waiters, in spotless white shirts, walked to and fro.'

Unlike restrictive modifiers, the postnominal non-restrictive PP-modifiers do not restrict the set of entities denoted by the nominal head, but provide additional information about these entities. As such they affect neither the truth conditions of a sentence nor the identifiability of the intended referent. In (68), for example, the predications hold for all watches and computers: the sentences are both true and grammatical, but less informative, without the PP-modifier; the non-restrictive PPs actually emphasize that there is no restriction involved.

(68) a. Horloges, van welk merk dan ook, worden steeds goedkoper.
          watches   of which brand PRT PRT become ever   cheaper
          'Watches, no matter their brand, are becoming cheaper and cheaper.'
      b. Een computer,   met of zonder internetaansluiting, is onmisbaar.
          a computer   with or without internet connection is indispensable

In (69), the intended referents of the DP as a whole are assumed to be identifiable without the information provided by the PP; without the PP-modifiers, the sentences are grammatical and felicitous, but, again, less informative.

(69) a. De auto, van een Duits merk, werd in beslag genomen.
          the car   of a German make   was   confiscated
      b. De bruid, in het wit,   zag er   stralend uit.
          the bride in the white saw there radiant   prt.
          'The bride, all in white, looked radiant.'

Recall that it may be difficult to distinguish non-restrictive PP-modifiers like the ones in (68) from appositional PPs; see Section 3.1.3 for a brief discussion of the difference between the two types of construction.

Now that we have seen that non-restrictive PPs do not have an effect on the referential properties of the noun phrase as a whole and the truth value of the proposition made in the main clause, but are simply used to provide additional information about the referent set, we will discuss their use and function in several types of noun phrases.

I. Indefinite noun phrases

When the noun phrase is indefinite, the implication is that the additional information provided by the PP applies to all members of the referent set of the noun phrase, regardless of the specificity of the noun phrase. In (70a), for example, we are dealing with a nonspecific indefinite noun phrase, and it is claimed that the speaker is looking for presents; as extra information, it is added that they are intended for the speaker's mother. In (70b), we are dealing with a specific indefinite noun phrase, and the PP-modifier adds as additional information that the property of being impressed by the view holds for the person that the speaker has in mind.

(70) a. Ik ben op zoek naar cadeautjes, voor mijn moeder.
        I am looking for presents for my mother
    b. Ik zag een vriend van me, onder de indruk van het uitzicht, foto's maken.
        I saw a friend of mine under the impression of the view photos make
        'I saw a friend of mine, impressed by the view, taking pictures.'

Non-restrictive PP-modifiers can also be used when the indefinite noun phrase is interpreted generically. Perhaps the result in (71a) is somewhat marked, but insofar as this sentence is acceptable it expresses that all cuckoo clocks come from Switzerland. Sentence (71b) seems fully acceptable and expresses that all Lapps live in the north of Sweden.

(71) a. $^?$Een koekoeksklok, uit Zwitserland, loopt bijna altijd gelijk.
        a cuckoo clock from Switzerland runs nearly always on.time
        'A cuckoo clock, from Switzerland, nearly always keeps good time.'
    b. Lappen, in het noorden van Zweden, leven erg geïsoleerd.
        Lapps in the north of Sweden live very isolated

II. Quantified noun phrases

Non-restrictive PP-modifiers fall outside the scope of the quantifier in quantified DPs; consequently, they do not serve to restrict the domain of the quantifier, but provide extra information about an already quantified set. Moreover, the truth conditions of the predication are not affected by the presence or absence of the modifier. In (72a) the speaker is looking for some presents; the PP merely adds the information that they are all intended for the speaker's mother. In example (72b), the speaker states that there are many tourists in the hotel; the additional information provided by the PP is that they are all from Germany. Similarly, in the generic sentence in (72c), the additional information asserted is that all the tomatoes under discussion are from Italy. Finally, in (72d) each book is said to be reduced in

price; from a semantic point of view, the information provided by the non-restrictive PP-modifier is superfluous and is merely added for the pragmatic reason of removing potential doubt on the part of the hearer.

(72) a. Ik ben op zoek naar enkele cadeautjes, voor mijn moeder.
          I   am looking for some presents   for my mother
    b. Er   waren veel toeristen, uit Duitsland,   in het hotel.
          there were   many tourists from Germany in the hotel
    c. Alle tomaten, uit Italië,   zijn lekker.
          all tomatoes   from Italy are nice
    d. Elk boek,   met of zonder rode stip, is in prijs   verlaagd.
          every book with or without red dot   is in price reduced
          'Every book, with or without a red dot, has been reduced in price.'

III. Definite noun phrases

If the DP is definite, the function of the PP is again to provide additional information about the (possibly singleton) referent set of the noun phrase. This means that this referent set is assumed to be uniquely identifiable for the speaker without the information in the non-restrictive modifier. Thus, the most likely reading of (73a) is one in which the car in question has already been introduced into the discourse and is therefore identifiable by the addressee. The salient new information is that it has been confiscated; extra and typically new information concerning ownership is provided by the non-restrictive PP-modifier *van mijn buurman* 'of my neighbor'. Since the identifiability of the intended referent is not determined by the PP-modifier, the neighbor may actually own more than one car. Similarly, (73b) is felicitous in a context in which the speaker has already mentioned the present, without mentioning the benefactive. This latter information is now added as extra information, which is not (cannot even) be used to identify the intended referent. The cat mentioned in (73c) is identifiable for the speaker, and two things are said about it at the same time, namely that it was purring and that it was situated between soft cushions (which might well be the cause of the purring event).

(73) a. Ze   hebben de auto, van mijn buurman, in beslag genomen.
          they have   the car of my neighbor   confiscated
    b. Ik ben   het cadeautje, voor mijn moeder, vergeten mee te brengen.
          I   have the present   for my mother   forgotten prt. to bring
          'I have forgotten to bring the present, for my mother.'
    c. De kat,   tussen de zachte kussens, lag heerlijk   te spinnen.
          the cat   between the soft cushions lay pleasantly to purr
          'The cat, between the soft cushions, was purring pleasantly.'

As can be seen from example (74), non-restrictive PP-modifiers can also be used in generic contexts. Once again, the implication is that the additional information provided in the PP-modifier is new for the hearer and applies to all members of the referent set of the noun phrase.

(74)   De Lappen, uit het noorden van Zweden, kennen nog veel oude tradities.
        the Lapps   from the north of Sweden   know   still many old traditions
        'The Lapps, from the north of Sweden, still have many traditions.'

IV. Noun phrases with a demonstrative determiner

It is quite common for DPs with a demonstrative determiner to be followed by a non-restrictive PP-modifier; the use of the demonstrative, suggesting identifiability on the basis of textual or contextual information, does not clash with the function of non-restrictive modifiers. The sentences in (75) are therefore all perfectly acceptable, both with and without the PP-modifiers.

(75) a. Deze auto, van mijn buurman, rijdt   erg zuinig.
         this car   of my neighbor   drives very economically
     b. Dat meisje daar, met die blauwe trui, ken ik nog van school.
         that girl   there with that blue sweater know I   still from school
         'That girl over there, with the blue sweater, I know from school.'
     c. Dit boek,   met een rode stip, is in prijs   verlaagd.
         this book   with a red dot   is in price reduced
         'This book, with a red dot, has been reduced in price.'

Similarly, in contrastive contexts the PP-modifier does not serve to distinguish between two intended referents: the identity of the intended referents is assumed to be known on the basis of the context; the information given in the PP-modifiers is additional information about these referents. That this extra information is nevertheless relevant can be seen from example (76b), where the two non-restrictive PPs provide the reason for the claim made in the main clause (compare also (75c)).

(76) a. Bedoelt u   DEZE auto, uit Amerika, of DIE (auto),   uit Japan?
         mean   you this car   from America or that car   from Japan
         'Do you mean this car, from America, or that (car), from Japan?'
     b. DIE auto, MET spoilers, is veel sneller dan DIE (auto), ZONDER spoilers.
         that car   with spoilers is much faster than that car   without spoilers

V. Noun phrases with a possessive pronoun, personal pronouns and proper nouns

Non-restrictive PPs can be readily used to modify constructions with possessive pronouns, with personal pronouns and with proper nouns. In all cases, the referent of the noun phrase is assumed to be identifiable independently from the extra information provided by the PP-modifier. The PP-modifier can be left out without affecting the grammaticality, felicitousness or truth conditions of the predication.

A. Noun phrases with a possessive pronoun

In (77) some examples are given of non-restrictive PPs modifying noun phrases with possessive determiners. Although in all cases the PP provides additional information, the reason for providing this information varies: in (77a) it may be added to indicate that my grandfather's coming tonight is something special, considering his old age; in (77b) it is added as an explanation for the fact that my friend has little time for herself; in (77c), finally, the information provided by the PP may be seen as purely additional, that is, as unrelated to the predication.

(77) a. Mijn opa,   van 96, komt   vanavond ook.
          my granddad of 96   comes tonight   too
          'My granddad, of 96, is also coming tonight.'
      b. Mijn vriendin, met zes kinderen, heeft nauwelijks tijd   voor zichzelf.
          my friend   with six children has   hardly   time for herself
          'My friend, with six children, hardly has any time for herself.'
      c. Mijn vriendin, uit Amsterdam,   heeft net gebeld.
          my friend   from Amsterdam has   just called

B. Personal pronouns

The examples in (78) show that, although in principle the referent of the personal pronoun is assumed to be identifiable regardless of the information provided in the PP-modifier, this modifier may nevertheless add information to facilitate identification.

(78) a. Zij (daar), met die blauwe blouse, is mijn buurvrouw.
          she there   with the blue blouse   is my neighbor
      b. Hij, bij het raam daar,   is mijn broer.
          he   at the window there is my brother

A special use of plural personal pronouns with PP-modifiers is exemplified in (79). Despite the fact that the PPs are locational, they are not used here to restrict the set denoted by the pronouns *we* 'we', *jullie* 'you' or *zij* 'they' to those members who are in a particular place; as a matter of fact, the speakers need not even be at the location mentioned at the time of speaking. The PPs are rather used here to extend reference from the speaker set to a larger set of people, namely that of Dutch or German people in general.

(79) a. Wij(,) in Nederland(,)   doen dat heel anders.
          we   in the.Netherlands do   that very differently
      b. Jullie/Zij(,) in Duitsland(,) kennen dat probleem niet.
          you/they   in Germany   know   that problem   not
          'You in Germany don't have that problem.'

As is indicated in the examples by means of glosses, the intonation break seems optional: when the intonation break is present the referent set is actively limited to the people from the Netherlands, the meaning coming close to "We Dutch people do that very differently"; when the intonation break is present, the PP has the feel of an apposition: "We, the Dutch people, do that very differently".

C. Proper nouns

Non-restrictive PP-modifiers can also be used to modify proper nouns. Once again, as proper nouns normally have unique reference in a given discourse situation, their referent can be assumed to be identifiable with or without the non-restrictive modifier. Some examples are given in (80).

(80) a.   Jan, op vakantie in Frankrijk, was nog niet op de hoogte.
         Jan on holiday in France   was yet not informed
    b.   Els, in Amsterdam, wachtte op bericht van Peter, in Berlijn.
         Els in Amsterdam   waited on news   of Peter   in Berlin
         'Els, in Amsterdam, was waiting for news from Peter, in Berlin.'

3.3.2. *Relative clauses*

Relative clauses serve to provide information about an antecedent like *(het) boek* 'the book' in (81). They contain an obligatory relative element, like the relative pronoun *dat* 'that' in (81), that is coreferential with the antecedent, which we will indicate by means of coindexation. The relative element also performs a function in the relative clause, which therefore contains an interpretative gap, which is indicated by the °trace t_i in (81): in (81a), the relative pronoun functions as the object, and in (81b) as the subject of the relative clause. Relative clauses can be either restrictive or non-restrictive: the relative clause in (81a) is restrictive in the sense that its presence is required to enable the hearer to pick out the intended referent of the noun phrase; the relative clause in (81b) is non-restrictive, and simply provides additional information about the intended reference, which, in this case, provides the rationale for the proposition expressed by the main clause.

(81) a.   Het boek$_i$ [$_{RC}$ dat$_i$ ik gisteren t_i gekocht heb], was erg duur.
         the book   that I   yesterday   bought have was very expensive
         'The book that I bought yesterday was very expensive.'
    b.   Ik heb   het boek$_i$, [$_{RC}$ dat$_i$ t_i erg duur   was], maar niet gekocht.
         I   have the book   which very expensive was PRT not   bought
         'I have not bought the book, which was very expensive, after all.'

This section on relative clauses is organized as follows. After a brief general introduction in 3.3.2.1, Section 3.3.2.2 will present an overview of the various relative elements in Dutch and discuss the differences in form and function between these elements. Section 3.3.2.3 will be devoted to a discussion of the differences between and properties of restrictive and non-restrictive relative clauses. Finally, the last two sections will address two specific issues relating to the scope of the relative clause: Section 3.3.2.4 will deal with the °stacking of relative clauses, while Section 3.3.2.5 will offer a detailed discussion of relative clauses with a coordinated antecedent.

3.3.2.1. *General introduction*

Relative clauses serve to provide information about an entity introduced by a noun (phrase) in the matrix clause, the antecedent. They are obligatorily introduced by (a phrase containing) a relative element coreferential with this antecedent and contain a trace indicating the original position of the relative element. The overall structure of relative clauses is therefore as indicated in (82); see De Vries (2002: appendix III) for an overview of different syntactic analyses of relative clauses.

(82)   • Overall structure of relative clauses: *Det N*$_i$ [$_{RC}$ *REL*$_i$ .... t_i ....]

For instance, the relative pronoun *dat* in the examples in (81), repeated here as (83), is coreferential with its antecedent *boek* 'book', and the trace t_i indicates the original position of the pronoun in the relative clause.

(83) a. Het boek$_i$ [$_{RC}$ dat$_i$ ik gisteren t_i gekocht heb], was erg duur.
　　　 the book　　　 that I yesterday bought　 have was very expensive
　　 b. Ik heb het boek$_i$, [$_{RC}$ dat$_i$ t_i erg duur　　　 was], maar niet gekocht.
　　　 I have the book　 which very expensive was PRT not bought

　　 Relative clauses can be either restrictive or non-restrictive. Like other restrictive modifiers, restrictive relative clauses form an intonation unit with their antecedent, while reducing the referent set of the noun phrase by restricting the denotation of the noun. Given this, it is plausible to assume that, like other restrictive modifiers, restrictive relative clauses are part of the NP-domain: in (84), this is expressed by placing the relative clause within the NP brackets and by coindexing the relative element with some projection of the head noun smaller than NP (which may contain other restrictive modifiers).

(84) 　　 • Restrictive relative clauses: [$_{DP}$ D [$_{NP}$ [... N ...]$_i$ [$_{RC}$ REL$_i$ .... t_i ....]]]
　　 a. De man$_i$ [$_{RC}$ die$_i$ t_i naast mij woont] speelt goed piano.
　　　 the man　 who next.to me lives　 plays well piano
　　　 'The man who lives next to me plays the piano well.'
　　 b. Het boek$_i$ [$_{RC}$ dat$_i$ ik t_i wilde kopen] was uitverkocht.
　　　 the book　　 that I wanted buy　 was sold.out
　　　 'The book I wanted to buy was sold out.'
　　 c. Het huis$_i$ [$_{RC}$ waar$_i$ ik t_i geboren ben] is allang afgebroken.
　　　 the house　 where I born am is long.ago pulled.down
　　　 'The house where I was born was pulled down long ago.'

Non-restrictive relative clauses are separated from the noun by an intonation break, represented in the examples in (85) by means of commas, and merely provide additional information about the referent set of the full noun phrase, which can be established independently of the relative clause. Given this, we assume that non-restrictive relative clauses are external to the NP, and that the relative element is coindexed with the NP; see Section 3.3.2.3.1 for details.

(85) 　　 • Non-restrictive relative clauses: [$_{DP}$ D [$_{NP}$ ... N ...]$_i$, [$_{RC}$ REL$_i$ .... t_i ....]]
　　 a. Peter$_i$, [$_{RC}$ die$_i$ ik graag t_i mag], speelt goed piano.
　　　 Peter　　 who I well like plays well piano
　　 b. Dit boek$_i$, [$_{RC}$ dat$_i$ t_i erg spannend is], was al snel uitverkocht.
　　　 this book　　 which very exciting is was already soon sold.out
　　　 'This book, which is very exciting, was soon sold out.'
　　 c. Dit huis$_i$, [$_{RC}$ waar$_i$ Rembrandt t_i woonde], is nu een museum.
　　　 this house, where Rembrandt lived, is now a museum
　　　 'This house, where Rembrandt used to live, is now a museum.'

The abstract structure in (85) shows that we assume that the non-restrictive relative clause is still part of the DP-domain; the reasons for this are given in 3.1.2, sub II. Since many researchers have argued that besides the NP- and DP-projection, other

intermediate projections can be distinguished within the noun phrase, such as NumP discussed in Section 1.1.2.2.1, example (6), it might be the case that the relative elements of non-restrictive relative clauses are coindexed with some higher projection in between NP and DP. The main issue here is, however, to indicate the scope of the two types of relative clauses: a non-restrictive relative clause provides additional information about the referent of the noun phrase, and since the reference of the noun phrase is determined by the determiner, the relative clause must have this determiner in its scope; a restrictive relative clause does not provide information about the referent of the noun phrase but restricts the denotation of the noun, and it is therefore plausible that it is only the NP that falls inside its scope

 Since this section is mainly concerned with postmodification of nominal heads, the discussion will focus on relative constructions of the type in (84) and (85) above and semi-free relatives like (86a); free relative constructions like (86b), in which an overt nominal antecedent is lacking, will not be extensively discussed.

(86) a. Degene die gisteren opbelde, was mijn broer.
    the one who yesterday prt.-called was my brother
    'The one who called yesterday was my brother.'
  b. Wie nu niet weggaat, komt   te laat.
    who now not leaves   comes too late
    'Anyone who doesn't leave now will be late.'

3.3.2.2. The form and function of the relative elements

The relative element linking a relative clause to a matrix clause can take many forms. Table 3 gives an overview of the various relative elements that will be discussed in this section. The list is not intended as exhaustive, but simply illustrates some typical cases. The mark <f> indicates that the form in question is part of the formal register of the language.

Table 3: Relative elements in Dutch

TYPE	FORM	FEATURES OF THE ANTECEDENT	SECTION
Pronouns	*die*	[-NEUTER, SINGULAR] or [±NEUTER, PLURAL]	3.3.2.2.1
	dat	[+NEUTER, SINGULAR]	
	wie	[+HUMAN]	
	wat	[-HUMAN, +NEUTER, SINGULAR], AP, VP or CP	
	welke<f>	[-NEUTER, SINGULAR] or [±NEUTER, PLURAL]	
	hetgeen<f>	AP, VP or CP	
Possessive pronouns	*wiens*<f>	[+HUMAN, +MASC, SINGULAR]	3.3.2.2.2
	wier<f>	[+HUMAN, +FEM, SINGULAR] or [+HUMAN, PLURAL]	
R-pronouns	*waar* (+P)	no restrictions	3.3.2.2.3
Adverbial phrases	*waar* *waarop* *waarin* *zoals*	[+LOCATIVE] [+TEMPORAL] or [+MANNER] [+TEMPORAL]	3.3.2.2.4
Particle	*dat*	[+TEMPORAL]	3.3.2.2.5

Table 3 shows that the choice normally depends on certain features of the antecedent, such as number and gender. In (87), for example, the relative pronoun *dat* can only occur when the antecedent is a singular, neuter noun like *boek* 'book'; when the antecedent is plural or non-neuter, the relative noun *die* must be used.

(87) a. Het boek *dat* ik gekocht heb, gaat over de oorlog.
      the book that I bought have goes about the war
      'The book I have bought is about the war.'
   b. De boeken *die* ik gekocht heb, gaan over de oorlog.
      the book that I bought have goes about the war
      'The book I have bought is about the war.'
   c. De man *die* naast mij woont, speelt goed piano.
      the man who next.to me lives plays well piano
      'The man who lives next to me plays the piano well.'

In other cases, it is the function of the antecedent in the main clause that determines which element can or must be used. The relative pronouns *dat* and *die* in (87), for example, cannot occur as the complement of a preposition; in these cases we use the relative pronoun *wie* or the °R-pronoun *waar* in (88a&b). Similarly, possessive relative pronouns can only be used when they function as the possessor of a noun phrase.

(88) a. De vriend aan *wie* ik mijn fiets heb geleend, woont hiernaast.
      the friend to whom I my bike have lent lives next.door
      'The friend I lent my bike to lives next door.'
   b. De auto *waar*mee ik op vakantie ben geweest, is gestolen.
      the car where-with I on holiday am been is stolen
      'The car that I have been on holiday with has been stolen.'
   c. De vriend *wiens* fiets ik heb geleend, woont hiernaast.
      the friend whose bike I have borrowed lives next.door
      'The friend whose bike I have borrowed lives next door.'

Relative elements that function as adverbial phrases come in various sorts. Some examples are given in (89): in (89a), for example, the relative element takes the form of the R-pronoun *waar*, and in (89b) the form of the relative particle *dat*.

(89) a. Ik herinner me nog de dag *waarop* het gebeurde. [relative adverb]
      I remember REFL still the day where-on it happened
      'I still remember the day on which it happened.'
   b. De week *dat* ik op vakantie was, was het mooi weer. [relative particle]
      the week that I on holiday was was it nice weather
      'The week I was on holiday the weather was nice.'

The following sections will discuss these relative elements. The discussion will conclude in Section 3.3.2.2.6 with an overview of the circumstances in which the elements in Table 3 can be used.

3.3.2.2.1. Relative pronouns

This section discusses the relative elements from the first row in Table 3, that is, the colloquial relative pronouns *die*, *dat*, *wie*, and *wat*, as well as the more formal forms *welke* and *hetgeen*. As is indicated in Table 3, the relative pronoun *wat* can also be used with non-nominal antecedents, and the relative pronoun *hetgeen* is even used so exclusively. As our present concern is with postmodification of the noun phrase, a discussion of these pronouns in constructions like (90) would, strictly speaking, fall outside the scope of the present section. However, as such a strict approach would leave the discussion of relative elements in Dutch incomplete, and since the constructions in question have much in common with the other ones dealt with below, we will include these constructions in our discussion.

(90) a. [Jan was niet op tijd], wat/hetgeen erg vervelend was.   [CP]
       Jan was not on.time what   very annoying was
      'Jan wasn't on time, which was very annoying.'

    b. Ik probeer [(om) op tijd te komen], wat/hetgeen misschien lukt.   [CP/IP]
       I try   COMP on time to come   what   maybe   succeeds
      'I will try to be on time, which I may succeed in.'

    c. Jan [kocht een nieuwe auto], wat/hetgeen Peter ook wel wou.   [VP]
       Jan bought a new car   what   Peter also PRT wanted
      'Jan bought a new car, which Peter also would have liked to do.'

    d. Jan is [zeer intelligent], wat/hetgeen Peter niet is.   [AP]
       Jan is very intelligent   what   Peter not is
      'Jan is very intelligent, which Peter is not.'

Most relative pronouns can be used both in restrictive and in non-restrictive relative clauses. In what follows, restrictive relative clauses will be used as examples in those cases where both types can be used. When a particular (use of) pronoun is restricted to one of the two types, this will be explicitly mentioned.

I. Die*/*dat *'that'*

The relative pronouns *die* and *dat* can be seen as the standard pronouns in relative clauses with nominal antecedents. Relative clauses introduced by the pronouns *die*/*dat* can be given the global structural representations in the examples in (91); the concrete examples exemplify this for the case in which the relative pronoun functions as the subject of the clause. In the discussion below, we will focus on the properties of the relative pronouns.

(91) a. Restrictive relative clause: $[_{DP}$ D $[_{NP}$ [... N ...]$_i$ $[_{RC}$ REL$_i$ .... t_i ....]]]
       $[_{DP}$ de $[_{NP}$ student$_i$ $[_{RC}$ die$_i$ $[_{DP}$ t_i] mijn boek heeft geleend]]]
         the   student   who   my book   has borrowed
       'the student who borrowed my book'

    b. Non-restrictive relative clauses: $[_{DP}$ D $[_{NP}$ ... N ...]$_i$, $[_{RC}$ REL$_i$ .... t_i ....]]
       $[_{DP}$ de $[_{NP}$ student]$_i$, $[_{RC}$ die$_i$ $[_{DP}$ t_i] mijn boek heeft geleend]]
         the   student   who   my book   has borrowed
       'the student, who borrowed my book'

A. Features of the antecedent

The pronouns *die* and *dat* can be used with antecedents referring to both human and non-human referents. Which of the two pronouns is used depends on the gender and number of the antecedent: *die* is used for [-NEUTER, SINGULAR] or [±NEUTER, PLURAL] antecedents, whereas *dat* can only be used in the case of a [+NEUTER, SINGULAR] antecedent. In other words, *dat* can only be used with antecedents that take the neuter definite article *het*, and *die* is used in all other cases. This is illustrated in Table 4. Note that we gloss *die*/*dat* as *who* when the antecedent is [+HUMAN] and as *that* when the antecedent is [-HUMAN], in accordance with the preferred English rendering of the pronoun.

Table 4: Antecedents of the relative pronoun die/dat

		SINGULAR	PLURAL
[-NEUTER]	[+HUMAN]	*de man die daar loopt* the man who there walks 'the man who is walking there'	*de mannen die daar lopen* the men who there walk 'the men who are walking there'
	[-HUMAN]	*de bal die daar ligt* the ball that there lies 'the ball that is lying there'	*de ballen die daar liggen* the balls that there lie 'the balls that are lying there'
[+NEUTER]	[+HUMAN]	*het kind dat daar speelt* the child who there plays 'the child who is playing there'	*de kinderen die daar spelen* the children who there play 'the children who are playing there'
	[-HUMAN]	*het boek dat daar ligt* the book that there lies 'the book that is lying there'	*de boeken* die *daar liggen* the books that there lie 'the books that are lying there'

Note, however, that in informal language the pronoun *die* is increasingly used with [+NEUTER, SINGULAR] antecedents if the antecedent has a [+HUMAN] or [+ANIMATE] referent. Thus, instead of the expressions in (92a&b), we may find the corresponding primed examples.

(92) a. het/een   meisje dat daar woont
          the/a   girl_dim   that there lives
          'the girl who lives there'
     a′. het/een meisje die daar woont
     b. het/een   hondje dat daar loopt
          the/a   dog_dim   that there walks
          'the little dog that walks there'
     b′. het hondje die daar loopt

It is not entirely clear what the scope of this use is. Haeseryn et al. (1997: 330) provides a couple of examples that involve non-restrictive relative clauses with nouns referring to a person, including an example involving the diminutive of a proper noun; cf. also http://taaladvies.net/taal/advies/vraag/208/.

(93) a. Kareltje, die gejokt had, kreeg een standje.
Kareltje who fibbed had got   a reproach
'Kareltje, who had been telling a fib, got a reproach.'

b. Zijn meisje, die bij ons werkt,   is met vakantie.
his girlfriend who with us works is on vacation
'His girlfriend, who is working with us, is on vacation.'

c. Het hoofd van de afdeling, die hier al jaren werkt,   is ontslagen.
the head of the department who here already years works, has.been fired
'The head of the department, who has been working here for years, has been fired.'

Still, it is not the case that this use is restricted to non-restrictive relative clauses: it is easy to find examples involving restrictive relative clauses on the internet. Two clear cases are given in (94): the first is the title of a story on *You tube* and the second is part of a review of a theatrical performance.

(94) a. een verhaal over een meisje die   dacht   dat liefde echt was
a story   about a girl   who thought that love true was
'a story about a girl who thought that love was true'

b. Hij was het jongetje die in het oefenpartijtje scoorde.
he   was the boy   who during the exercise   scored
'He was the boy who scored during the exercise.'

It has been suggested that the examples like (92a) are common due to the fact that the neuter gender of the nominal head clashes with the sex of the referent of the noun phrase; cf. the language advice website of the journal Onze Taal (www.onzetaal.nl/advies/diedat.php). This might indeed be relevant, but it cannot be the whole story given that examples like (92b′) can be found in contexts that provide no indication of the sex of the dog: in this case, it seems the grammatical gender of the stem of the diminutive form that is the determining factor. It seems clear that more research is needed before we can say anything definitive about this phenomenon.

B. Quantified antecedents

The relative pronouns *die* and *dat* can combine with various types of quantified antecedents. This is shown in (95) for existentially quantified noun phrases, and in (96) for universally quantified noun phrases.

(95) a. iemand/niemand   die ik ken
somebody/nobody who I   know
'somebody/nobody I know'

b. iets/niets   dat ik gezien heb
something/nothing that I   seen   have
'something/nothing I saw'

(96) a. alle jongens die ik ken
all boys   who I   know
'all boys I know'

b. elke jongen die ik ken
each boy   who I   know
'each boy I know'

In archaic and literary (poetic) Dutch, the relative pronoun *die* can also take the quantified pronoun *al* 'all' as its antecedent, resulting in such constructions as *Al die dit leest is gek* 'all who read this are mad'. In (formal) Dutch, however, the relative pronoun *wie* is preferred in this context; cf. Section II, sub B, below.

C. Free and semi-free relative constructions

The relative pronoun *die* can also be used in so-called semi-free relative constructions, that is, restrictive relative clauses with an antecedent that has little semantic content and no independent reference. In these constructions, *die* is used with the antecedents *degene(n)* and *diegene(n)* 'the one(s)', both of which are used for [+HUMAN] referents only.

(97) a. Wil d(i)egene die zijn auto voor de ingang   heeft geparkeerd
        wants the/that.one who his car   in.front.of the entrance has parked
        deze a.u.b. verwijderen?
        this   please remove
        'Would the person who parked his car in front of the entrance please remove it?'
    b. D(i)egenen   die zich hebben ingeschreven krijgen spoedig bericht.
        the/those.ones who REFL have   registered   receive soon   news
        'The/those persons who have registered will soon be informed.'

The relative pronoun *dat* does not seem to be favored in these constructions: the [-HUMAN] antecedent *dat* must be followed by the relative pronoun *wat*, which is probably motivated by the fact that use of *dat* would lead to haplology. But with *datgene* as well the use of *wat* seems much favored, although numerous examples with *dat* can be found on the internet.

(98) a. Dat wat/*dat   ik gisteren gekocht heb is nu   alweer kapot.
        that which/which I yesterday bought have is now already broken
        'What I bought yesterday is already broken now.'
    b. Datgene wat/%dat   ik gisteren gekocht heb is nu   alweer kapot.
        that   which/which I yesterday bought have is now already broken
        'What I bought yesterday is already broken now.'

Since the antecedent in semi-free relative constructions does not have independent reference, relative clauses of this type are always restrictive. For completeness' sake, example (99) shows that neither *die* nor *dat* can be used in free relative constructions, that is, these relative pronouns always require an overtly realized antecedent.

(99) a. *Die dit   leest is gek.
        who this reads is mad
    b. *Die te laat   komt   wordt gestraft.
        who too late comes is   punished

D. Syntactic function of the relative pronoun

In (100), it is shown that the relative pronouns *die* and *dat* can have the same syntactic functions as a regular noun phrase, namely, as the subject or an object of the relative clause.

(100) a. de student   die mijn boek heeft geleend   [subject]
          the student who my book   has   borrowed
          'the student who has borrowed my book'
     b.   de student   die ik gisteren   heb   ontmoet   [direct object]
          the student who I yesterday have met
          'the student I met yesterday'
     c.   de student   die ik gisteren   een boek heb gegeven   [indirect object]
          the/a student who I yesterday a book   have given
          'the/a student I gave a book to yesterday'

The examples in (101) show that the relative pronouns *die* and *dat* cannot function
as the complement of a preposition, regardless of whether the PP is an argument, as
in (101a&b), or an adverbial phrase, as in (101c&d). In this respect these pronouns
behave like personal pronouns that refer to inanimate entities; cf. Chapter P5.1.

(101) a. *de student [PP aan die] ik mijn boek heb   gegeven
           the student   to whom I my book   have given
     b.   *het boek [PP van dat] ik de kaft   heb   gescheurd
           the book   of which I   the cover have torn
     c.   *de vriend [PP met die]   ik op vakantie ben   geweest
           the friend   with whom I on holiday have been
     d.   *het huis [PP in dat]   ik geboren ben
           the house   in which I   born   am

Note that stranding of the preposition, as in (102), does not improve matters, which
is of course consistent with the fact that Dutch does not allow preposition stranding
by extracting a noun phrase; cf. Section P5. Note in passing that *mee* in (102c) is the
stranded form of the preposition *met*.

(102) a. *de student die_i ik mijn boek [PP aan t_i] heb gegeven
     b.   *het boek dat_i ik de kaft [PP van t_i] heb gescheurd
     c.   *de vriend die_i op vakantie [PP mee t_i] ben geweest
     d.   *het huis dat_i ik [PP in t_i] geboren ben

This means that Dutch must appeal to other means to express the intended
meanings. Subsection II below will show that, in the case of [+HUMAN] antecedents,
this can be done by replacing *die/dat* by the pronoun *wie*. An alternative option,
which is also available when the antecedent is [-HUMAN] and which will be
discussed in Section 3.3.2.2.3, is to use a (split) pronominal PP *waar ... P*.
     The examples in (103) and (104) show that *die/dat* can also be used in
restrictive relative clauses with an antecedent functioning as a °complementive.
This is possible regardless of whether the relative pronoun functions as an argument
or a predicate in the relative clause. This is shown in the (a)- and (b)-examples,
respectively. Relative clauses of this sort will be discussed more extensively in
Section 3.3.2.3.3.1, sub III.

(103) a. Ik ben niet de dwaas die men denkt dat ik ben.   [complementive]
       I am not the fool who one thinks that I am
       'I am not the fool people think I am.'
    b. Ik ben niet een dwaas die altijd doet wat hem gezegd wordt.   [argument]
       I am not a fool who always does what him said is
       'I am not a fool who always does as he is told.'

(104) a. Ik vind Jan niet de dwaas die men denkt dat hij is.   [complementive]
       I find Jan not the fool who one thinks that he is
       'I don't consider Jan the fool people think he is.'
    b. Ik vind Jan een dwaas die altijd doet wat hem gezegd wordt.   [argument]
       I find Jan a fool who always does what him said is
       'I consider Jan a fool who always does as he is told.'

E. Possessive use

In some varieties of spoken Dutch, the relative pronoun *die* is sometimes used in possessive constructions like (105a), where it is followed by the reduced possessive pronouns *z'n* 'his' or *d'r* 'her', which can also be found in possessive constructions like *Jan z'n boek* 'Jan's book' and *Marie d'r boek* 'Marie's book'. Example (105a′) shows that the resulting construction, which is considered substandard and is not acceptable to all speakers of Dutch, is restricted to the singular, which may be related to the fact that the third person plural possessive pronoun *hun* 'their' does not have a reduced form; cf. the discussion in Section 5.2.2.5.1. Example (105b) shows that the relative pronoun *dat* markedly differs from *die* in that it can never be used in this way.

(105) a. %de docent die z'n boek ik heb geleend
       the teacher who his book I have borrowed
       'the teacher whose book I have borrowed'
    a′. *de studenten die hun examens ik heb nagekeken
       the students who their exams I have corrected
       'the students whose exams I have corrected'
    b. *het meisje dat d'r moeder ik ken
       the girl who her mother I know

II. Wie *'who'*

The relative pronoun *wie* differs sharply from *die*/*dat* in that it is typically used as the complement of a PP, as in the structures in (106). The indices indicate the relations with the structure: the index *i* indicates that the full PP has been moved into the initial position of the relative clause, and the index *j* indicates that the noun (phrase) modified by the relative clause acts as the antecedent of the relative pronoun. The relative pronoun can sometimes also be used as a nominal argument in the relative clause, that is, with the structure in (91), but its use is then more restricted than that of *die*/*dat*.

(106) a.   Restrictive relative clauses: [DP D [NP [... N ...]j [RC [PP P *wie*j]i ... ti ...]]]

[DP de [NP studentj [RC [aan wiej]i ik [PP ti] mijn boek heb   gegeven]]]

      the   student   to who(m) I   my book   have given

'the student to whom I gave the book'

   b.   Non-restrictive relative clauses: [DP D [NP ... N ...]i , [RC [PP P *wie*j]i ... ti ...]]

[DP de [NP studentj]j , [RC [aan wiej]i ik [PP ti] mijn boek heb   gegeven]]

      the   student   to who(m) I   my book   have given

'the student, to whom I gave the book'

A. Features of the antecedent

The relative pronoun *wie* is restricted to [+HUMAN] referents and can be used regardless of the gender, number or definiteness of its antecedent. This is illustrated in examples (107).

(107) a.   de/een studentnon-neuter aan wie ik gisteren   een boek heb   gegeven

      the/a student   to who I   yesterday a book   have given

'the/a student who I have given a book yesterday'

   b.   het/een meisjeneuter aan wie ik gisteren   een boek heb   gegeven

      the/a girl   to whom I   yesterday a book   have given

   c.   de studenten/meisjes aan wie ik gisteren   een boek heb   gegeven

      the students/girls   to whom I   yesterday a book   have given

B. Quantified antecedents

Example (108) shows that it is not easy for *wie* to take an existentially or universally quantified antecedent: the pronoun *die* is generally the strongly preferred option in that case. This is shown by (108).

(108) a.   (n)iemand   die/*?wie ik ken

      no/somebody   who/who I   know

'no/somebody I know'

   b.   iedereen die/*wie ik ken

      everyone who/who I   know

'everyone I know'

The examples in (109a&b) show, however, that the pronoun *wie* can be used to modify the universally quantified pronoun *al* 'all' when this pronoun is used to refer to persons, although this particular use is characterized by a high degree of formality. Note that the antecedent and pronoun can both be interpreted either as singular or (perhaps somewhat marked) as plural, as shown by the form of the finite verbs of the main and relative clause.

(109) a.   Al wie aanwezig was, werd ondervraagd.

      all who present was   was   interrogated

   b.   ?Al wie aanwezig waren, werden ondervraagd.

      all who present were   were   interrogated

Example (110a) shows that the universally quantified pronoun *al* cannot be used without the relative clause introduced by *wie*. This also explains why it cannot be

used with a non-restrictive relative clause, as shown in (110b). For more details on the quantifier *al*, see Section 7.1.2.1.

(110) a. *Al werd/werden ondervraagd.
          all was/were   interrogated
      b. *Al, wie aanwezig waren, werden ondervraagd.
          all who present were   were   interrogated

C. Free and semi-free relative constructions

Relative clauses introduced by the pronoun *wie* can readily be used as free relatives, that is, without a phonetically expressed antecedent. Some examples are given in (111). Free relatives occur most frequently as the subject of a generic matrix clause like (111a&b), but (111c) shows that it is certainly not impossible to use a free relative subject to refer to a specific individual.

(111)   • Subject
      a. [Wie dit   leest] is gek.
          who this reads is mad
          'Whoever reads this is mad.'
      b. [Wie te laat   komt] wordt gestraft.
          who too late comes is punished
          'Whoever comes late will be punished.'
      c. [Wie daar   staat] is erg knap.
          who there stands is very handsome
          'The person standing there is very handsome.'

In (111) there is matching in syntactic function between the free relative in the main clause and the relative pronoun in the relative clause, but it is also possible to have a mismatch between these two functions. In (112a), for example, the free relative functions as the subject of the main clause, whereas the relative pronoun functions as the direct object of the relative clause. The acceptability of (112a) contrasts sharply with the ungrammaticality of the German example in (112b) (cf. Van Riemsdijk 2006: 353), which is generally attributed to the fact that, unlike Dutch, German has morphological case: the relative pronoun in the German example must be accusative in order to be able to perform its role within the relative clause, but nominative in order for the free relative clause to perform its role in the main clause: this morphological clash, which is absent in Dutch, causes the ungrammaticality of (112b).

(112) a. [Wie hij niet kent]   is onbelangrijk.
           who he not knows is unimportant
          'Who he doesn't know is unimportant.'
      b. *[Wen/wer   Got schwach geschaffen hat], muss klug   sein.
           who$_{acc}$/who$_{nom}$ God weak   created   has   must clever be
          'Who God has created weak must be clever.'

    The examples in (113) show that free relatives can also function as direct objects; again the free relative can have a generic or a specific interpretation. These examples show again that Dutch is not subject to a matching restriction: the free

relative clauses in (113) function as direct objects of the main clauses whereas the relative pronouns function as subjects of the relative clauses. In German, examples like (113) are reported to be ungrammatical or archaic; see Van Riemsdijk (2006: 355-6) for discussion.

(113)   • Direct object
    a. Ik bewonder wie zoiets   kan.
        I   admire   who such.thing can
        'I admire whoever is able to do such a thing.'
    b. We straften [wie dat gedaan had] streng.
        we punished who that done   had   severely
        'We have punished the person who did it.'

Example (114a), taken from the internet, shows that a free relatives can also be used as the complement of a preposition, although it must be noted that using a free relative as part of an indirect object introduced by *aan* 'to', as in (113b), seems less favored than using a nominal indirect object.

(114)   • PP-complement
    a. Het is een hel als je wacht   op [wie er   het eerste dood gaat].
        it is a hell   if one waits for who there the first   dead goes
        'It is hell if one waits for who will die first.'
    b. Ik zal [(²aan) wie daar om gevraagd heeft] een exemplaar toesturen.
        I will   to   who there for asked   has   a copy   prt.-send
        'We will send a copy to whoever asked for one.'

    A free relative is normally analyzed as a noun phrase headed by a phonetically empty antecedent for the relative pronoun noun *wie*, and not as a clause (Van Riemsdijk 2006). Evidence in favor of this claim is that the free relatives with *wie* have the syntactic distribution of noun phrases, and not that of clauses: they must precede the verbs in clause-final position, even when an °anticipatory pronoun is present. This is illustrated in (115) by means of free relatives functioning as the subject and the object of the clause, respectively.

(115) a.   dat [wie dit leest] gek is.
         that who this reads mad is
         'that whoever will read this is mad.'
    a′. *dat (het/hij) gek is [wie dit   leest].
         that it/he   mad is who this reads
    b.   We zullen [wie dit gedaan heeft] streng   straffen.
         we will   who this done   has   severely punish
         'We will severely punish whoever has done this.'
    b′. *We zullen (het/hem) streng   straffen [wie dit gedaan heeft].
         we will   it/him   severely punish who this done   has

    The examples in (116) show that the semi-free relative constructions are marked, both compared to the corresponding free relatives in (111) and semi-free relatives like (97b&c) with the relative pronoun *die*.

(116)   • Semi-free relatives
   a.   Degene/Diegene die/^{??}wie dit leest   is gek.
        the.one/that.one   who/who this reads is mad
        'Anyone who will read this is mad.'
   b.   Degene/Diegene die/^{??}wie te laat komt   wordt gestraft.
        the.one/that.one   who/who too late comes is punished
        'Anyone who's late will be punished.'

Although the more or less idiomatic constructions in (117a&b) resemble free relative constructions, they are different in a number of ways. First, the particle *ook* is obligatorily present and adds a concessive meaning of the construction ("no matter who you ask/see..."), as a result of which the construction as a whole is more or less equivalent to constructions with a universal quantifier: (117a) could be paraphrased as "Everyone is giving the same answer" and (117b) as "Everyone has a mobile telephone". Second, the primed examples show that it is completely impossible for the construction to take an overt antecedent or to appear in the form of a semi-free relative construction.

(117) a.   Wie je   er   ook naar vraagt, ze   zeggen allemaal hetzelfde.
           who you there PRT prt. asks   they say   all   the.same
           'No matter who you ask, they all give the same answer.'
     a′. *Degene wie je er ook naar vraagt, ze zeggen allemaal hetzelfde.
     b.   Wie je ook ziet, ze   hebben allemaal een mobiele telefoon.
           who you PRT see they have   all   a mobile phone
           'Whoever you see, they all have a cellular phone.'
     b′. *Degene wie je ook ziet, ze hebben allemaal een mobiele telefoon.

The *wie*-constructions in the primeless examples furthermore do not act as arguments, but more like clausal adjuncts. Since Dutch is a °verb-second language, the finite verb in declarative main clauses is preceded by a single constituent, and since the subject occupies this position in the primeless examples in (117), the *wie*-phrase must be clause-external. This conclusion is also supported by the fact illustrated by (118) that, in contrast to regular constituents of the clause, the *wie*-phrase cannot occupy the first position of the clause itself.

(118) a.   *Wie je   er   ook naar vraagt zeggen ze   allemaal hetzelfde.
            who you there PRT prt. asks   say   they all   the.same
     b.   *Wie je ook ziet   hebben ze   allemaal een mobiele telefoon.
            who you PRT see have   they all   a mobile phone

For completeness' sake, note that according to Haeseryn et al. (1997: 361) modifiers like *onverschillig* 'indifferent' and *om het even* 'irrespective' may perform the same function as the particle *ook* in (117). Here we quote one example; to our ear, the use of *onverschillig* sounds rather formal and somewhat forced.

(119)   Om het even/Onverschillig wie hij tegenkomt, hij groet   niet.
        OM HET EVEN/indifferent   who he prt.-meet   he greets not
        'No matter who he meets, he won't greet them.'

   Another highly idiomatic type of expression, typically found in proverbs, is illustrated by the constructions in (120); cf. Stoett (1923-5: #2503). Originally, the second part of the construction functioned syntactically as a relative clause introduced by the relative pronouns *die* and *dat*. Nowadays, however, it is more common to use the pronouns *wie* and *wat*, respectively, which is clear from the hits that resulted from a Google search April 15, 2008. In (121), we provide similar examples with *wat/dat*.

(120) a. Wie niet waagt,   wie niet wint.   [14,100 hits]
           who not ventures, who not wins
           'Nothing ventured, nothing gained.'
      b. Wie niet waagt, die niet wint.   [919 hits]

(121) a. Wat niet   weet, wat niet deert.   [13,200 hits]
           what not knows, that not harms
           'What the eye doesn't see, the heart doesn't grieve over.'
      b. Wat niet weet, dat niet deert.   [1,200 hits]

D. Syntactic function of the pronoun

The examples in (122) show that the pronoun *wie* cannot function as the subject or direct object of the relative clause in Standard Dutch, although it must be noted that in some varieties of Dutch (like the dialect spoken in Amsterdam) the relative pronoun *wie* can also be used as the direct object of the relative clause, hence the % mark in (122b&c).

(122)   • Subject and direct object
      a. *de student   wie daar loopt
           the student   who there walks
      b. %de student   wie we geschorst   hebben
           the student   who we suspended have
      c. %Dit is de jongen wie ik   gisteren   gezien heb.
           this is the boy   who I   yesterday seen have

The relative pronoun *wie* normally functions instead as the object of a PP, where the PP as a whole may function either as a complement or as an adjunct of the relative clause: the examples in (123a&b) illustrate the former and involve, respectively, an indirect object and a PP-complement; example (123c) illustrates the latter.

(123)   • PP-complement
      a. de student   aan wie ik gisteren   een boek heb   gegeven
           the student to whom I   yesterday a book   have given
           'the student to whom I have given a book yesterday'
      b. de vriend   op wie   ik tevergeefs heb gewacht
           the friend on whom I in.vain   have waited
           'the friend I waited for in vain'
      c. de vriend   met wie   ik op vakantie ben geweest
           the friend with whom I   on holiday am been
           'the friend with whom I have been on holiday'

Since the pronoun *wie* functions as a regular noun phrase the preposition is obligatorily pied piped, that is, stranding the preposition, as in (124), leads to ungrammaticality; in such constructions the relative pronoun must take the form of an R-pronoun; cf. Section 3.3.2.2.3.

(124) a. *de student wie$_i$ ik gisteren een boek [aan t_i] heb gegeven
     b. *de vriend wie$_i$ ik tevergeefs [op t_i] heb gewacht
     c. *de vriend wie$_i$ ik op vakantie [met/mee t_i] ben geweest

    Although the examples in (122) have shown that the relative pronoun *wie* cannot function as the subject or the direct object, it can function as a nominal indirect object of a ditransitive relative clause. This means that the examples in (107) alternate with the examples in (125). The examples in (125) also show that bare *wie* (but not *wie* in the PP) can be replaced by the relative pronoun *die/dat*, which was discussed in Subsection I above.

(125)   • Indirect object
     a.   de student wie/die ik gisteren   een boek heb gegeven
          the student who/who I   yesterday a book   have given
          'the student whom I have given a book yesterday'
     b.   het meisje wie/dat ik gisteren   een boek heb gegeven
          the girl   who/who I yesterday a book   have given
     c.   de studenten/meisjes wie/die ik gisteren   een boek heb gegeven
          the students/girls   who/who I yesterday a book   have given

    It seems that the relative pronoun *wie* can also be used for other types of dative noun phrase, although judgments are perhaps less clear. In (126a&b) we are dealing with NOM-DAT verbs, that is, °unaccusative verbs with a dative argument (cf. V2.1.3), and it seems possible to relativize the dative argument by means of either *wie* or *die*. The two options are certainly available for examples like (126c), where the dative is not an argument of the copular verb *zijn* 'to be' but of the adjective *trouw* 'loyal'; cf. Section A2.2.

(126) a.   De man wie/die de maaltijd niet beviel, klaagde   bij de gerant.
          the man who/who the meal   not pleased complained with the manager
          'The man, who was not pleased by the meal, complained to the manager.'
     b.   De man, wie/die de maaltijd goed smaakte, zuchtte tevreden.
          the man who   the meal   well tasted, sighed contentedly
          'The man, who was pleased by the meal, sighed contentedly.'
     c.   Zij is een meisje, wie/dat ik altijd   trouw zal zijn.
          she is a girl   who   I   always loyal will be
          'She is the girl to whom I will always be true.'

E. Possessive use

In some varieties of spoken Dutch, the relative pronoun *wie* can be used in possessive constructions like (127a&b), where it is followed by the reduced possessive pronouns *z'n* 'his' or *d'r* 'her', which can also be found in possessive constructions like *Jan z'n boek* 'Jan's book' and *Marie d'r boek* 'Marie's book'. Its use is restricted to the singular, which may be related to the fact that the third person

plural possessive pronoun *hun* 'their' does not have a reduced form; cf. the discussion in Section 5.2.2.5.1.

(127) a. %de vriend   wie z'n boek ik   heb   geleend
             the friend   who his book I   have borrowed
             'the friend whose book I have borrowed'
     b. %het meisje wie d'r moeder   naast me   woont
             the girl   who her mother next.to me   lives
             'the girl whose mother lives next to me'
     c. *de vrienden wie hun boeken ik   heb   geleend
             the friends   who their books I   have borrowed

The constructions in (127a&b) are often considered substandard and are not acceptable to all speakers of Dutch. speakers that do not accept these examples normally use the genitive form *wiens* 'whose' in possessive constructions like these; cf. Section 3.3.2.2.2.

III. Wat *'which'*

The relative pronoun *wat* can be used both in restrictive and in non-restrictive relative clauses, although the conditions under which these can be used differ considerably. The constructions in (128) are similar in all relevant respects to those given for *die/dat* in (91), although we will see that the use of *wat* is much more restricted than that of *die/dat*.

(128) a. Restrictive relative clauses: [$_{DP}$ D [$_{NP}$ [... N ...]$_i$ [$_{RC}$ *wat*$_i$ .... t_i ....]]]
             [$_{DP}$ een [$_{NP}$ idee$_i$ [$_{RC}$ wat$_i$ me wel [$_{DP}$ t_i] aansprak]]]
                 an   idea   which me PRT   appealed
             'an idea that appealed to me'
     b. Non-restrictive relative clauses: [$_{DP}$ D [$_{NP}$ ... N ...]$_i$, [$_{RC}$ *wat*$_i$ .... t_i ....]]
             [$_{DP}$ een [$_{NP}$ origineel idee]$_i$, [$_{RC}$ wat$_i$ me wel [$_{DP}$ t_i] aansprak]]
                 an   original idea   which me PRT   appealed
             'an original idea, which appealed to me'

A. Features of the antecedent

Describing the use of the relative pronoun *wat* is complicated by the fact that a process of language change seems to be going on, in which the use of *wat* is on the rise (Van der Horst 1988, Schoonenboom 1997/2002); many of the uses of *wat* in the examples below seem to be relatively recent innovations in the language, and therefore meet normative opposition.

    Nominal antecedents of the relative pronoun *wat* are [+NEUTER] and [+SINGULAR]. That the antecedent must be neuter can be seen in (129a&b): despite the fact that the two nouns *voorstel* 'proposition' and *suggestie* 'proposition' are near synonyms, only the neuter noun *voorstel* can enter the construction. That the antecedent must be singular can be seen in (129c). Note that all examples in (129) are grammatical with the relative pronoun *dat* or *die*.

(129) a. Hij deed een voorstel_{neuter} wat/dat we nu   gaan uitwerken.
   he did an proposition which we now go prt.-develop
   'He made a proposition which we will develop now.'
  b. Hij deed een suggestie_{non-neuter} die/*wat we nu   gaan uitwerken.
   he did an proposition which we now go prt.-develop
  c. Hij deed twee voorstellen_{pl} die/*wat we nu   gaan uitwerken.
   he did two propositions which we now go prt.-develop

Haeseryn et al. (1997: 338) claim that *wat* can only be used with an indefinite antecedent, but they immediately add that in informal speech *wat* can be used with every singular neuter noun and is actually preferred to *dat* in large parts of the language area; a cursory look on the internet shows that this is indeed the case. A Google search performed on April 17, 2008 on the strings *het aanbod wat/dat er is* gave the results in (130). Nevertheless, it seems that *wat* is more generally accepted with an indefinite antecedent than with a definite one, hence the % mark in (130b).

(130) a. het aanbod dat er is   [45 hits]
   the supply that there is
   'the supply that is available'
  b. %het aanbod wat er is   [12 hits]

  The examples so far all involve abstract nouns. Most speakers of Dutch seem to be less willing to accept examples with concrete nouns, although examples can readily be found on the internet both with indefinite and with definite antecedents; two examples are given in (131). Note that (131b) shows again that *wat* can also occur with definite antecedents.

(131) a. Het is een mobieltje dat/%wat er leuk uitziet'.
   it is a cell phone which there nice prt.-looks
   'It is a cell phone that looks nice.'
  b. Zoek het mobieltje dat/%wat bij je past.
   look.for the cell.phone which with you fits
   'Find the cell phone that suits you best.'

The examples in (131) involve restrictive relative clauses. Judgments are different with non-restrictive relative clauses, where the use of *wat* seems to be more generally accepted, and is even preferred by some speakers with indefinite antecedents. This is illustrated in the constructed examples in (132). First, example (132a) involves a restrictive clause, and *dat* is preferred to *wat* by most speakers of the standard variety, regardless of the definiteness of the antecedent. Example (132b) involves a non-restrictive relative clause with an indefinite antecedent: all speakers accept the relative pronoun *wat*, and some (but not all) speakers even prefer it to the relative pronoun *dat*. Finally, example (132c) involves a non-restrictive relative clause with a definite antecedent, and most speakers accept both *wat* and *dat* (although speakers' preferences seem to vary from person to person). In short: although the precise status of the examples in (132b&c) is perhaps somewhat unclear, it seems safe to conclude that *wat* is accepted in non-restrictive clauses by most speakers.

(132) a.   Wij zoeken naar een/het horloge dat/[%]wat opgewonden kan worden.
          we gave him a/the watch   which   wound.up   can be
          'We are looking for a/the watch that can be wound up.'

     b.   Wij gaven hem een nieuw horloge, wat/[%]dat hij nu dagelijks draagt.
          we gave him a new watch   which   he now daily   wears
          'We gave him a new watch, which he now wears every day.'

     c.   Wij gaven hem vaders horloge, dat/wat   hij nu dagelijks draagt.
          we gave him daddy's watch   which/which he now daily   wears
          'We gave him daddy's watch, which he now wears every day.'

The examples in (132) show that *wat* can also be used when the antecedent is animate or human, although many speakers will object to these examples even more than to those with inanimate nouns in (131). The examples with *wat* in (133) are taken from the internet.

(133) a.   Het paard dat/[%]wat het hoogst in rang   is, is meestal   een oudere merrie.
          the horse which   the highest in rank is is generally an older mare
          'The horse that is highest in rank is generally an older mare.'

     b.   Daar loopt het meisje dat/[%]wat   naast me   woont.
          there walks the girl   which   next.to me lives
          'The girl who lives next to me is walking over there.'

The antecedent of non-restrictive relative clauses with the relative pronoun *wat* need not function as an argument, but can also function as a nominal predicate, and in this respect *wat* crucially differs from the relative pronouns *die* and *dat*, which normally cannot be used in this context. This is illustrated in (134). Note that the relative pronoun *wat* is not sensitive to the gender and number specification of the predicative noun phrase; this is related to the fact discussed in Subsection E below that *wat* can also take an AP predicate as its antecedent.

(134) a.   Marie is een aardig meisje, wat/*dat Els zeker   niet is.
          Marie is a nice girl   which   Els certainly not is
          'Marie is a nice girl, which certainly Els is not.'

     b.   Jan is een aardig jongen, wat/*die Peter zeker   niet is.
          Jan is a nice boy   which   Peter certainly not is
          'Jan is a nice boy, which certainly Peter is not.'

     c.   Jan en Marie zijn aardige kinderen, wat/*die Els en Peter zeker niet zijn.
          Jan and Marie are nice kids   which   Els and Peter certainly not are
          'Jan and Marie are nice kids, which certainly Peter and Els are not.'

Finally, we can point to a typical use of the pronoun *wat* in constructions with a nominal antecedent in the form of an elliptical superlative expression followed by a restrictive relative clause. Examples are given in (135a&b), where *wat* can be seen as coreferential with the phonetically empty noun [*e*] modified by the superlatives *mooiste* 'most beautiful' and *meest belachelijke* 'most ridiculous'; example (135c) has a more or less idiomatic flavor. Note that *dat* can also be used in these cases.

(135) a. Dit is het mooiste [e]   wat/dat me had kunnen overkomen.
          this is the most beautiful which me had could   happen
          'This is the best thing that could happen to me.'
     b.   Dat is het meest belachelijke [e] wat/dat je je   voor kunt stellen.
          that is the most ridiculous   which you REFL prt. can   imagine
          'That is the most ridiculous thing you can imagine.'
     c.   Dat is wel het minste [e] wat/dat hij kan doen.
          that is PRT the least   which he can do
          'That is the least he can do.'

As is shown in (136), a similar construction occurs with expressions like *enige* 'only' and *eerste*/*laatste* 'first/last', which are similar to superlative phrases in that they are normally used in definite (uniquely referring) noun phrases.

(136) a. Dit is het enige [e] wat/dat ik kan doen.
          this is the only   which I   can do
          'This is the only thing I can do.'
     b.   Ik zei het eerste [e] wat/dat in me opkwam.
          I   said the first   which in me prt.-rose
          'I said the first thing that occurred to me.'

B. Quantified antecedents

The relative pronoun *wat* is also used in combination with quantified pronominal antecedents. Some examples are given in (137). Although it is possible to use either *wat* or *dat*, in some cases one of the two pronouns is clearly preferred. This is especially clear with the examples in (137a&c): a cursory look on the internet shows that the string *[alles wat]* occurs about twenty times as often as *[alles dat]*, whereas *[zoveel dat]* is about ten times as frequent as *[zoveel wat]*; the string *[iets wat]* in (137b) occurs about two times as often as *[iets dat]*.

(137) a. Ik gaf   hem al(les) wat/$^{??}$dat ik bezat.
          I   gave him all   that/that I   owned
     b.   Dat is nou iets   wat/dat ik nooit begrepen   heb.
          that is now something that   I   never understood have
          'Now that is something I've never understood.'
     c.   Er is zoveel wat/dat ik niet begrijp.
          there is so much that   I   not understand
          'There's so much I don't understand.'

    When the antecedent is *niets*, as in (138), both *wat* and *dat* are acceptable, although the former seems to be more popular: a Google search performed in November 2008 on the string *[niets wat/dat ik]* gave 32,900 hits for *wat* and only 19,800 hits for *dat* (of which more than 2,000 hits involved the irrelevant construction *Het is niet voor niets dat ik* ... 'It is for a good reason that I ...'). Never-theless, there seem to be several interfering factors, which, to our knowledge, have not been investigated so far. Whereas in example (138a) *wat* is about four times as frequently as *dat*, our Google search also showed that in (138b) *dat* occurs about six time as frequent as *wat*. The search strings are given within square brackets.

(138) a.   [Niets   wat/dat ik doe] helpt.
          nothing which I   do   helps
          'Nothing I do is helping.'
    b.   Er   is [niets   dat/wat ik kan doen].
          there is nothing which   I   can do
          'There is nothing I can do.'

Finally, example (139a) shows that in some cases, both the use of *wat* and *dat* seem to give rise to a degraded result. The preferred way of expressing the intended thought is as given in (139b). In all likelihood we are dealing here with modification by means of a PP headed by the preposition *van* which takes a free relative as its complement; cf. *niets van dat alles* 'nothing of that all' in which *dat alles* is likewise the complement of *van*.

(139) a.   Niets $^?$dat/$^{*?}$wat hij voorspelde kwam ooit uit.
          nothing that/that he predicted   came ever out
    b.   Niets   van wat/*dat hij voorspelde kwam ooit uit.
          nothing of what/that he predicted   came ever out
          'Nothing of what he predicted ever came out.'

C. Free and semi-free relative constructions

The examples in (140) show that the relative pronoun *wat* can be used in so-called semi-free relative constructions, where it is coreferential with the antecedent *dat(gene)*. Replacing *wat* in these examples by the relative pronoun *dat* leads to an ungrammatical result, which is probably motivated by the fact that this would lead to haplology. But with *datgene* the use of *wat* also seems much favored, although numerous examples with *dat* can be found on the internet.

(140) a.   Dat wat/*dat er   niet is kun je   ook niet zien.
          that which   there not is can you also not see
          'What isn't there you can't see either.'
    b.   Ik gaf   hem al datgene wat/$^{\%}$dat ik hem beloofd   had.
          I   gave him all that   which I   him promised had
          'I gave him all that I'd promised him.'

Wat can also be used in free relative constructions, that is, without an overt antecedent. In (141) an example is given involving a subject. These examples show that the result is best when the free relative is in clause-initial position or extraposed; example (141c), in which the subject occupies the regular subject position immediately after the finite verb in the second position of the clause, is marked. This suggests that, despite the fact that free relatives are normally claimed to be part of a noun phrase with a phonetically empty antecedent, the free relative in (141) has more or less the distribution of a subject clause. In fact, the similarity with a regular clause goes deeper, which is clear from the fact that example (141b) must contain an °anticipatory pronoun *het* 'it', just as it would when we are dealing with a regular subject clause (De Vries 2002: 281; Van Riemsdijk 2006: 345). Note that whereas example (141a) seems compatible with both a generic and a specific interpretation of the free relative, example (141b) clearly favors a specific interpretation.

(141)   • Subject (main clause)
    a.   [Wat hij doet] is lovenswaardig.
        what he does is praiseworthy
        'What(ever) he is doing is praiseworthy.'
    b.   Natuurlijk is het goed   [wat hij doet].
        of course, is it   praiseworthy what he does
        'Of course, it is praiseworthy what he is doing.'
    c.   [?]Natuurlijk is [wat hij doet] goed.

The examples in (142) show more or less the same thing for embedded clauses: since topicalization is excluded in Dutch embedded clauses, the subject is preferably placed in extraposed position with the anticipatory pronoun *het* in subject position.

(142)   • Subject (embedded clause)
    a.   Marie vertelde me dat   het lovenswaardig is [wat hij doet].
        Marie told   me that it   praiseworthy is what he does
        'Marie told me that it is praiseworthy what he is doing.'
    b.   [?]Marie vertelde me dat [wat hij doet] lovenswaardig is.
        Marie told   me that what he does praiseworthy   is

    A free relative functioning as a direct object also exhibits the syntactic behavior of a clause: (143a&b) shows that the free relative is preferably placed in clause-initial or extraposed position. In the latter case the anticipatory pronoun *het* 'it' is optional, just as it would be with a regular object clause; example (143c), in which the free relative occupies the regular object position, is again marked.

(143)   • Direct object (main clause)
    a.   [Wat jij   daar zegt] zal   zij niet waarderen.
        what you there say shall she not appreciate
        'She will not appreciate what you are saying there.'
    b.   Zij zal (het) niet waarderen [wat je   daar zegt].
        she will it   not appreciate what you there say
        'She will not appreciate what you are saying there.'
    c.   [?]Zij zal   [wat je   daar zegt] niet waarderen.
        she will what you there say   not appreciate

It seems that the examples in (143) do not readily allow a generic interpretation, but that such an interpretation is not entirely impossible is clear from the constructions in (144a); example (144b) is a similar, more idiomatic expression.

(144) a.   dat hij eet wat   er   op tafel   komt.
        that he eats what there on the.table comes
        'that he eats whatever is served.'
    b.   dat hij eet wat de pot schaft.
        that he eats what the pot gives
        'that he will take potluck.'

Example (145) provides the embedded clauses corresponding to (143): since topicalization is excluded in Dutch embedded clauses, the object is preferably placed in extraposed position with an optional anticipatory pronoun het in object position.

(145)   • Direct object (embedded clause)
    a.   Ik denk dat zij (het) niet zal waarderen [wat je daar zegt].
         I think that she it   not will appreciate what you there say
         'I think that she will not appreciate what you are saying right now.'
    b.   [?]Ik denk dat zij [wat je daar zegt] niet zal waarderen.
         I think that she what you there say   not will appreciate

That free relatives with *wat* behave like regular clauses is also clear from the examples in (146), in which the free relative is part of a PP-complement of the verb: the full PP can be extraposed, as in (146a), or the free relative may be extraposed in isolation, in which case the clause must contain the anticipatory PP *er* + P. What seems impossible, however, is to place the full PP in a position preceding the clause-final verb. This is exactly the pattern that we also find with complement PPs containing a regular finite clause; cf. Section P2.4.

(146)   • PP-complement
    a.   dat hij mij wees [_{PP} op [wat er   in de kleine lettertjes stond]].
         that he me pointed   at what there in the little print   stood
         'He drew my attention to what it said in the fine print.'
    b.   dat hij mij [_{PP} erop] wees [wat er   in de kleine lettertjes stond].
         that he me there-at pointed what there in the little print   stood
    c.   ^{??}dat hij mij [_{PP} op [wat er in de kleine lettertjes stond]] wees.

The distribution of free relatives with *wat* differs sharply from that of free relatives with *wie*, discussed in Subsection IIC above, which have the distribution of noun phrases, not clauses. It is not entirely clear what the correct analysis of the examples in (141) to (146) is. De Vries (2002: 281) suggests that we may be dealing with some sort of Heavy NP Shift or Right Dislocation, with *het* or a phonetically empty pronoun *pro* occupying the original position of the free relative, as indicated in (147a). There are three problems with this proposal, however. First, it leaves unexplained why we could not have the empty pronoun *pro* with heavy DPs like *het beeldje in de etalage* in examples like (147b): it forces us to assume that *pro* is only possible with DPs that have the form of free relatives. Second, it leaves unexplained why free relatives with *wie* in examples like (147c) cannot undergo the same type of movement as free relatives with *wat*. In short, it forces us to adopt the *ad hoc* solution that *pro* is only possible with DPs that have the form of a free relative that contain *wat*. Finally, it leaves unexplained why (147a) does not require the obligatory intonation break (indicated by an em-dash) that we find in (147b).

(147) a. dat Marie het/pro mooi   vindt   [wat daar staat].
           that Marie it/pro   beautiful considers what there stands
           'that Marie considers it beautiful what is standing there.'
      b. dat Marie het/*pro mooi   vindt — [dat beeldje in de etalage].
           that Marie it/pro   beautiful considers that statue   in the shop window
      c. *dat Marie het/hem/pro mooi   vindt   [wie daar staat].
           that Marie it/hem/pro   beautiful considers who   there stands

Another possibility suggested by De Vries (2002: 281) is that we are dealing with an apposition. The main reason for assuming this is that sometimes an apposition marker like *en wel* 'namely' can be used, which he illustrates with example (148a). There are, again, several problems with this suggestion. The first problem, noticed by De Vries himself, is that the marker *en wel* requires the pronoun *het* to be present; furthermore, it is very difficult to pronounce (148b) with the intonation contour typically associated with appositions, that is, with an intonation break before the free relative, when this marker is not present.

(148) a. Ze heeft het vernield, en wel [wat jij   gemaakt hebt].
           she has it destroyed namely what you made   have
           'She has it destroyed, (namely) what you have made.'
      b. Ze heeft vernield, ^{??}(*en wel) [wat jij gemaakt hebt].

Second, adding the marker to the earlier examples with postverbal free relatives seems entirely excluded, which is illustrated in the primeless examples in (149) for the examples in (141b) and (143b). The primed examples show that the free relatives can optionally be pronounced with the intonation contour associated with appositions, which shows that an apposition reading is possible. However, this intonation contour requires that the pronoun *het* 'it' be present; this can only be illustrated when the free relative is an object, as in (149b″), given that the pronoun is always obligatory with extraposed free relative subjects.

(149) a. Natuurlijk is het goed(,)   (*en wel) [wat hij doet].
           of course, is it   praiseworthy namely   what he does
           'Of course, it is praiseworthy what he is doing.'
      a′. Natuurlijk is het goed, [wat hij doet].
      b. Zij zal het niet waarderen, (*en wel) [wat je   daar zegt].
           she will it not appreciate   namely   what you there say
           'She will not appreciate what you are saying there.'
      b′. Zij zal het niet waarderen(,) [wat je daar zegt].
      b″. Zij zal niet waarderen(*,) [wat je daar zegt].

A third, and final problem for the suggestion that we are dealing with appositions is that this predicts that free relatives with *wie* can be used in the same way, and would thus be able to occur in postverbal position; we have already seen in (147) that this expectation is not borne out. Given these problems with the two proposals discussed above, we conclude that the examples in (141) to (146) constitute an as yet unsolved problem.

We now continue the discussion with a special type of free relative construction, which may function as the predicate of the clause. Some examples can be found in (150). The predicative free relatives are sometimes called transparent free relatives given that they themselves contain a predicate (given in italics) which is semantically the most prominent part of the construction. The examples in (150), for example, are more or less equivalent to the examples in (151); the free relative simply adds the information (due to the presence of *noemen* 'to call') that we are dealing with an assessment by the speaker, which leaves open the possibility that other people have a different opinion.

(150) a. Deze auto is niet [wat ik duur   zou noemen].
          this car   is not what I expensive may call
          'This car is not what I would call expensive.'
      b. Jan is [wat ik een schurk zou willen noemen].
          Jan is what I a scoundrel may want   call
          'Jan is what I would like to call a scoundrel.'

(151) a. Deze auto is niet duur.
          this car   is not expensive
      b. Jan is een schurk.
          Jan is a scoundrel

Transparent free relatives are always introduced by *wat*, which is remarkable given that *wat* seems to function as the argument of the embedded predicate, and might therefore be expected to be sensitive to features of the subject of the clause. Nevertheless, substituting *wie* for *wat* in (150b) leads to an unacceptable result, as shown by (152).

(152)   *Jan is wie ik een schurk zou willen noemen.
          Jan is who I a scoundrel may want   call

That the free relatives in (150) are transparent in the sense that it is actually the embedded predicative phrase that is active in the main clause is especially clear in example (150a), where the embedded predicate is adjectival: just like the regular set-denoting adjectives, the predicative free relative construction can be used in attributive prenominal position, as is illustrated by (153). There are at least two things that are remarkable about the structure in (153a). First, the adjective is inflected with the attributive *-e* ending, which we also find with the regular attributively used adjective in (153b), and not with the uninflected form *duur*, which we find with the predicatively used adjective in (151b). Second, the adjective follows the clause-final verb *noemen* in (153), which would never be possible in other cases: *dat ik deze auto <duur> noem <*duur>*.

(153) a. een [wat je   zou kunnen noemen dure/*duur] auto
          a   what one may can   call   expensive   car
          'a what one could call expensive car'
      b. een dure   auto
          an expensive car

Transparent free relatives also occur in argument positions. This is most natural when the free relative is the complement of a preposition, as in (154a), which is a slightly adapted example taken from the newspaper *Het Parool* ("Kraamkamer vol ideeën"; March, 29, 2008), or a direct object; when the free relative functions as subject the result seems somewhat marked. Note that the primeless examples are, again, more or less equivalent to the primed examples: the free relative construction in the primeless examples only adds the information (due to the use of the verb *blijken* 'to turn out') that at the time that they were sold it was not known that the shares were worthless.

(154) a. Hij   verkocht zijn bedrijf   voor
           he   sold   his company for
           [wat later waardeloze aandelen bleken   te zijn].
           what later worthless shares   appeared to be
           'He sold his company for what turned out to be worthless shares.'
      a′. Hij verkocht zijn bedrijf voor waardeloze aandelen.
      b.   Hij   verkocht ons [wat later waardeloze aandelen bleken   te zijn].
           he   sold   us   what later worthless shares   appeared to be
           'He sold us what turned out to be worthless shares.'
      b′. Hij verkocht waardeloze aandelen.
      c.   ^(?)Er werden ons [wat later waardeloze aandelen bleken te zijn] verkocht.
           there were us   what later worthless shares   appeared to be sold
           'What later turned out to be worthless shares were sold to us there.'
      c′. Er werden ons waardeloze aandelen verkocht.

The markedness of example (154c) may be caused by the fact that the transparent free relative precedes the verb in clause-final position, given that example (154b) also gets somewhat marked when it is embedded; cf. (155a). It must be noted, however, that °extraposition of the transparent free relative does not improve matters; on the contrary, it worsens the result as can be seen from the fact that (155a′) is only possible with an intonation break before the free relative. That extraposition of the transparent free relative worsens the result is also shown by the unacceptability of the extraposition counterpart of (154c) in (155b).

(155) a. ^(?)dat hij [wat later waardeloze aandelen bleken   te zijn] verkocht.
               that he what later worthless shares   appeared to be   sold
      a′. ^{??}dat hij ons verkocht [wat later waardeloze aandelen bleken te zijn].
      b.   *Er werden ons verkocht [wat later waardeloze aandelen bleken te zijn].

The fact that transparent free relatives cannot be extraposed shows that they have the distribution of noun phrases; they are therefore truly different from regular free relatives with *wat*, which, as we have seen, have the distribution of clauses; cf. the discussion of (141) to (146). Another difference involves the fact, illustrated in (154c) above, that transparent free relatives can be used in an °expletive construction, which shows that they are indefinites; regular free relatives, on the other hand, are definite or generic and therefore never occur in an expletive construction. This is clear from the fact that (141a) does not have an expletive counterpart: *Er is [wat hij doet] lovenswaardig.*

The fact that transparent free relatives behave like indefinite noun phrases might give rise to the idea that they contain some phonetically empty quantificational pronoun. Such an idea might be supported by the fact that all transparent free relative constructions in (154) alternate with semi-free relative constructions headed by the pronoun *iets* 'something': *iets wat later waardeloze aandelen bleken te zijn* 'something that turned out to be worthless shares'. Still, it does not seem possible to assume that the examples in (154) contain a silent *iets*, given that the semi-free relative construction with *iets* triggers singular agreement on the finite verb, and not plural agreement, as is the case with the transparent free relative in (154c): *Er werd/*werden ons daar iets [wat later waardeloze aandelen bleken te zijn] verkocht.*

Let us conclude with the more or less idiomatic constructions in examples (156a&b), which resemble free relative constructions but are different in a number of ways. First, it is not possible for the construction to take an overt antecedent or to appear in the form of a semi-free relative construction; cf. (156a′&b′). Second, the particle *ook* (or a modifier like *onverschillig* 'indifferent' and *om het even* 'irrespective') is obligatorily present, and adds a concessive meaning to the construction (no matter what you say/do...).

(156) a.   Wat je   ook zegt, hij gelooft   het toch niet.
           what you PRT say   he believes it PRT not
           'No matter what you say, he won't believe it.'
     a′. *Datgene wat je ook zegt, ik geloof het toch niet.
     b.   Wat   je ook doet, het helpt toch niet.
           what you PRT do   it   helps PRT not
           'No matter what you do, it won't help.'
     b′. *Datgene wat je ook doet, het helpt toch niet.

Third, the *wat*-constructions in the primeless examples do not act as arguments, but more like clausal adjuncts; since Dutch is a °verb-second language, the finite verb in declarative main clauses is preceded by a single constituent, and since the subject occupies this position in the primeless examples in (156), the *wat*-phrase must be clause-external. This conclusion is also supported by the fact illustrated in (157) that, unlike regular constituents of the clause, the *wat*-phrase cannot occupy the first position of the clause itself; see also the discussion of (118).

(157) a. *Wat je   ook zegt, gelooft hij het toch niet.
            what you PRT say   believes he it PRT not
     b. *Wat je ook doet, helpt het toch niet.
           what   you PRT do helps it PRT not

Finally, note that similar constructions are possible with *wh*-phrases in first position. Given that the examples in (158) are clearly not free relatives, and given that *wat* can also be used as an interrogative pronoun, we conclude that we are not dealing with free relatives in (156) either; see Van Riemsdijk (2006: 362-3) for more arguments.

(158) a.   Welke argumenten je ook aanvoert,   hij gelooft   het toch niet.
            which arguments   je PRT put.forward he believes it PRT not
            'No matter what you supply, he won't believe it.'
      b.   Welke moeite je   ook doet, het helpt toch niet.
            what trouble you PRT take   it helps PRT not
            'No matter what trouble you take, it won't help.'

D. Syntactic function of the pronoun

Since the pronoun *wat* typically has a non-human, abstract reference, it occurs most naturally as the direct object of the relative clause. Examples of a restrictive and a non-restrictive construction can be found in (159a&b), respectively.

(159)   • Direct object
      a.   Jan deed een voorstel wat we hebben aangenomen.
            Jan did   a proposal   that we have   prt.-accepted
            'Jan made a proposal that we accepted.'
      b.   Jan deed een goed voorstel, wat   we unaniem   hebben aangenomen.
            Jan did   a good proposal   which we unanimously have   prt.-accepted
            'Jan made a good proposal, which we accepted unanimously.'

Wat can, however, also function as the subject of the relative clause in passive and unaccusative constructions, as in (160).

(160)   • Subject of passive and unaccusative verbs
      a.   Jan deed een goed voorstel, wat   unaniem   werd aangenomen.
            Jan did   a good proposal   which unanimously was prt.-accepted
            'Jan made a good proposal, which was accepted unanimously.'
      b.   De eigenaar vroeg een miljoen euro, wat   ons budget te boven ging.
            the owner   asked a million euros   which our budget exceeded
            'The owner asked a million euros, which exceeded our budget.'

The relative pronoun can also function as a nominal indirect object provided that the referent is [-HUMAN], as in (161a). Example (161b) shows, however, that it cannot occur in a prepositional indirect object (or any other PP); (161c) shows that in cases like these, a (split or unsplit) pronominal PP must be used; cf. Section 3.3.2.2.3.

(161)   • Indirect object
      a.   Jan deed een voorstel, wat   we onze steun hebben gegeven.
            Jan did   a proposal   which we our support have   given
            'Jan made a proposal, which we gave our full support.'
      b.   *Jan deed een voorstel, aan wat we onze steun hebben gegeven.
            Jan did   a proposal   to what we our support have   given
      c.   Jan deed een voorstel, waar<aan> we onze steun <aan> hebben gegeven.
            Jan did   a proposal   where-to   we our support   have   given

    Finally, the pronoun *wat* can be used as the predicate of a non-restrictive relative clause. In that case, the normal restriction that the antecedent refers to a [+NEUTER] [+SINGULAR] [-HUMAN] abstract entity does not hold. For example, in

(162a) *wat* accepts a human, non-neuter antecedent, while example (162b) shows that the antecedent can also be plural.

(162)   • Predicate
  a.   Ze zoeken een ervaren manager,   wat   ik niet ben.
       they search   an experienced manager which I   not am
       'They are looking for an experienced manager, which I am not.'
  b.   Ze zoeken ervaren managers,   wat   wij niet zijn.
       they search   experienced managers which we not are
       'They are looking for experienced managers, which we are not.'

In (162), the antecedent and the relative pronoun agree in number. The examples in (163) show, however, that this is not required: in (163a), the antecedent appears in the singular, whereas the plurality of the subject (*wij* 'we') and the verb (*zijn* 'to be') in the relative clause normally requires a plural predicate, as shown in (163a′). The inverse case in (163b&b′), where the antecedent appears in the plural, while the relative clause requires a singular predicate, is less felicitous.

(163) a.   Ze zoeken een ervaren manager,   wat   wij niet zijn.
          they search   an experienced manager which we not are
          'They are looking for an experienced manager, which we are not.'
  a′. Wij zijn ervaren managers/*een ervaren manager.
          we   are   experienced managers/an experienced manager
  b.   ??Ze zoeken ervaren managers,   wat ik niet ben.
          they search   experienced managers which I not   am
          'They are looking for experienced managers, which I am not.'
  b′. Ik ben een ervaren manager/*ervaren managers.
          I   am   an experienced manager/experienced managers

E. Non-nominal antecedents

The pronoun *wat* also accepts non-nominal antecedents. In the examples in (164), for example, the antecedent takes the form of a clause.

(164)   • Clause
  a.   Hij arriveerde vroeg, wat   ik erg   waardeerde.
       he   arrived   early, which I   very appreciated
       'He arrived early, which I appreciated very much.'
  b.   Hij liep   plotseling kwaad weg, wat   ik erg goed begreep.
       he   walked suddenly angry away, which I   very well understood
       'He suddenly walked away angry, which I could understand very well.'

Given that the relative pronoun can also take a singular, neuter nominal antecedent, this may sometimes lead to genuine ambiguity. An example is given in (165a): on the clausal antecedent reading, it is the making of the offer that is appreciated, whereas on the nominal antecedent reading it is the offer itself that is appreciated. When the potential antecedent is plural (or replaced by a non-neuter noun), the ambiguity is resolved: the use of *wat* now necessarily expresses the clausal antecedent reading, whereas the use of *die* expresses the nominal antecedent reading.

(165) a. Hij deed mij een prachtig aanbod$_{neuter}$, wat ik erg waardeerde.
     he did me a splendid offer   which I very appreciated
     'He made me a splendid offer, which I appreciated very much.'

    b. Hij deed mij prachtig aanbiedingen, die/wat ik erg waardeerde.
     he did me splendid offers   which I very appreciated
     'He made me a splendid offers, which I appreciated very much.'

The antecedent of *wat* need not be a full clause, but may also be a smaller (extended) projection of the verb. Examples can be found in (166a), where it is the VP *skiën* 'skiing' that forms the antecedent of the pronoun *wat*, and in (166b), where it is only the verb *zwemmen* 'to swim' which functions as the antecedent.

(166)   • Verbal projection
    a. Ik ga deze winter skiën, wat ik nog nooit eerder heb gedaan.
     I go this winter ski which I yet never before have done
     'This winter I'm going to ski in the Alps, which I have never done before.'

    b. Mijn broer kan goed zwemmen, wat ik helemaal niet kan.
     my brother can well swim which I completely not can
     'My brother can swim very well, which is something I certainly can't.'

Finally, the examples in (167) show that the antecedent of *wat* can also be a predicative phrase in, e.g., a copular or a *vinden*-construction. The predicate can be an AP, a noun phrase or a PP, although in the last case there is a clear preference for the use of the locative relative element *waar* 'where'.

(167)   • Predicative phrase
    a. Mijn auto is rood, wat ik een mooie kleur vind.
     my car is red which I a lovely color find
     'My car is red, which I find a lovely color.'

    b. Ik vind Jan een typische ambtenaar, wat ik nooit zou willen zijn.
     I consider Jan is a typical civil servant, which I never would want be
     'I consider Jan a typical civil servant, which I never would like to be.'

    c. Jan is al in Griekenland, waar/$^?$wat ik ook wel zou willen zijn.
     Jan is already in Greece where/which I also PRT would want be
     'Jan is already in Greece, where I would also like to be.'

IV. Welke *'which'*

The relative pronoun *welke* is only found in formal written contexts. Even in such contexts, however, replacement by *die* is always possible and generally preferred. Constructions with the relative pronoun *welke* can be represented as in (168).

(168) a. Restrictive relative clauses: [$_{DP}$ D [$_{NP}$ [... N ...]$_i$ [$_{RC}$ *welke$_i$* .... t$_i$ ....]]]
     [$_{DP}$ de [$_{NP}$ staking$_i$ [$_{RC}$ welke$_i$ [$_{DP}$ t$_i$] vanmorgen aanving]]]
     the strike which this morning commenced
     'the strike which started this morning'

    b. Non-restrictive relative clauses: [$_{DP}$ D [$_{NP}$ ... N ...]$_i$, [$_{RC}$ *welke$_i$* .... t$_i$ ....]]
     [$_{DP}$ de [$_{NP}$ staking]$_i$, [$_{RC}$ welke$_i$ [$_{DP}$ t$_i$] vanmorgen aanving]]
     the strike which this morning commenced
     'the strike, which started this morning'

A. Features of the antecedent

The relative pronoun *welke* is syntactically similar to the pronoun *die*: like *die*, it is used for singular [-NEUTER] and plural [±NEUTER] antecedents, both with human and with non-human referents. Some examples are given in (169).

(169) a.　Hij protesteert tegen de procedure　welke/die　de commissie　heeft gevolgd.
　　　　　he protests　　against the procedure which　　the committee has followed
　　　　　'He is protesting against the procedure that the committee has followed.'
　　　b.　Hij protesteert tegen de procedures　welke/die de commissie　heeft gevolgd.
　　　　　he protests　　against the procedures which　　the committee has followed
　　　c.　De brief was gericht　　aan personen welke/die zich　hadden ingeschreven.
　　　　　the letter was addressed to persons　which　　REFL had　　registered
　　　　　'The letter was addressed to persons who had registered.'

The relative pronoun *welke* has a singular [+NEUTER] counterpart, *hetwelk*, which is generally considered archaic (http://taaladvies.net/taal/advies/vraag/887/); even in formal written texts, it is normally the pronoun *dat* which is used. Given that there are only few [+HUMAN] neuter nouns, the use of *hetwelk* is mainly restricted to [-HUMAN] antecedents. An example is given in (170). In the remainder of this section, *hetwelk* will not be discussed.

(170)　　　Het verdrag hetwelk/dat beide partijen sloten　　werd snel　geschonden.
　　　　　the treaty　which　　both parties　concluded was　soon　violated
　　　　　'The treaty which both parties agreed on was soon violated.'

B. Syntactic function of the pronoun

Like *die*, the relative pronoun *welke* can fulfill various syntactic functions. In the examples in (169) above, *welke* functions as the subject of the relative clause. The examples in (171) show that it can also function as the direct object or as the indirect object of the relative clause.

(171) a.　Hij　protesteerde tegen de procedure　　welke de commissie　had gevolgd.
　　　　　he　protested　　against the procedure that　　the committee had followed
　　　　　'He protested against the procedure that the committee had followed.'
　　　b.　De stichting　　welke wij geld　hadden geschonken, bleek　malafide.
　　　　　the foundation that　we　money had　　donated　　proved unreliable
　　　　　'The foundation to which we had donated money turned out to be unreliable.'

The relative pronoun *welke* can also be used as the object of a preposition. The examples in (172) show, however, that the degree of acceptability of *welke* as a prepositional object may vary with the preposition. All these examples with *welke* are restricted to formal contexts: in other contexts, the use of *wie* (for [+HUMAN] antecedents) or a pronominal PP *waar + P* is preferred.

(172) a.　Personen tegen wie/[?]welke　een proces wordt　aangespannen hebben
　　　　　persons　against who/who a process is　　instituted　　have
　　　　　recht op een advocaat.
　　　　　right on a lawyer
　　　　　'Persons against whom proceedings are instituted have the right to a lawyer.'

b. De mensen voor wie/*?welke de regeling   geldt zijn zeer tevreden.
    the people   for whom/whom the measure holds are very satisfied
    'The people to whom the measure applies are quite satisfied.'
c. De arbeiders namens wie/welke wij optreden zijn ongeschoold.
    the workers on.behalf.of whom we act   are unskilled
    'The workers on whose behalf we act are unskilled.'
d. De stichting   waarmee/??met welke wij onderhandelen blijkt malafide.
    the foundation where-with/with which we negotiate   proves unreliable
    'The foundation with which are negotiating proves to be unreliable.'

Although the examples in (172) are all more or less marked, there is one context where the pronoun *welke* must be used, viz., when the antecedent is [-HUMAN] and the relative element is the complement of a preposition that cannot undergo R-pronominalization, that is, cannot be used in combination with an °R-pronoun. Examples of such prepositions are *tijdens* 'during' or *volgens* 'according to' in (173).

(173) a. tijdens het overleg   a'. *tijdens het   a''. *ertijdens
          during the deliberation   during it   during.it
      b. volgens de regels   b'. *volgens ze   b''. *ervolgens
          according.to the rules   according.to them   according.to.them

The fact that *welke* must be used in such contexts is related to the fact that the relative pronouns *die*/*dat* or *wat* are just like the [-ANIMATE] pronoun *het* 'it' and z*e* 'them' in (173) in that they cannot occur as the complement of a preposition; see Section P5.1 and also example (161b) above. Apparently, *welke* can be used as a last resort; see Haeseryn et al. (1997: 336/7) for more examples.

(174) a. De vergadering tijdens welke/*die/*wat het besluit   werd genomen
          the meeting   during which   the decision was taken
          was niet openbaar.
          was not   public
          'The meeting during which the decision was made was not public.'
      b. De reglementen   volgens welke/*die/*wat wij optraden waren verouderd.
          the regulations   according.to which   we acted   were outdated
          'The regulations upon which we acted were out.of.date.'

C. A special case

To conclude our discussion of the relative pronoun *welke*, we like to note that *welk(e)* can also be used attributively, in which case the pronoun heads a DP, which in turn acts as the complement of a PP, and which as a whole is coreferential with the antecedent. This kind of construction is only allowed in non-restrictive contexts like (175a), and we may be dealing in these cases not with a relative clause but with an apposition. The meaning of sentence (175a) is comparable to that of sentence (175b), where the relative element takes the form of the pronominal PP *waarmee*. Note that in this latter sentence, the relative form *waarmee* can also be coreferential with the complete clause *Jan kreeg een horloge* 'Jan was given a watch'; repetition of the antecedent, as in (175a), excludes this interpretation.

(175) a.　Jan kreeg een horloge,　met welk cadeau　hij blij　was.　[NP antecedent]
　　　　　Jan received a watch　　with which present　he　glad　was
　　　　　'Jan received a watch, which present made him very happy.'

　　　b.　Jan kreeg een horloge,　waarmee　hij blij was.　　[NP or CP antecedent]
　　　　　Jan received a watch　　where-with he glad was
　　　　　'Jan received a watch, which made him very happy.'

Occasionally, dependent clauses like (176) occur, in which the noun phrase containing *welke* does not act as the complement of a preposition. This construction seems archaic and certainly does not seem to belong to the spoken language.

(176)　　　Een staking, welk middel　we niet graag　gebruiken, is nu het enige alternatief.
　　　　　a strike　　which means　we not gladly　use　　　is now the only alternative

V. Hetgeen *'which'*

The relative pronoun *hetgeen* can in many contexts be used as a formal equivalent of the pronoun *wat*, although it is more restricted in its use: whereas *hetgeen* can always be replaced by *wat*, the reverse does not hold. For example, unlike *wat*, *hetgeen* can only be used in non-restrictive relative clauses and it is claimed that it typically takes clausal antecedents. If so, constructions with *hetgeen* must be represented as in (177). We will see, however, that the claim underlying this representation is in need of various modifications.

(177)　　　Non-restrictive use of *hetgeen*: clause$_i$, [$_{RC}$ *hetgeen*$_i$.... t_i ....]
　　　　　[Jan komt morgen thuis]$_i$, [$_{RC}$　hetgeen$_i$ t_i　ons zeer verheugt]
　　　　　Jan comes tomorrow home　　　which　　us very pleases
　　　　　'Jan is coming home tomorrow, which pleases us very much.'

A. Features of the antecedent

Haeseryn et al. (1997: 342) claim that the antecedent of *hetgeen* can only be a clause, as in (178b), and perhaps this is indeed the most typical use of *hetgeen*. However, it seems to us that the antecedent of *hetgeen* may also be a smaller (extended) projection of the verb or the predicate in a copular or *vinden*-construction. If so, *hetgeen* behaves exactly like *wat* in this respect, which will become clear by comparing the examples in (178)-(180) to those in (165)-(167).

(178)　　　• Clause
　　　a.　Hij　deed　mij　een prachtig aanbod, hetgeen ik　niet had　verwacht.
　　　　　he　did　me　a splendid offer　　which　I　not had　expected
　　　b.　Hij　deed　mij　een prachtig aanbod, hetgeen ik　erg　　waardeerde.
　　　　　he　did　me　a splendid offer　　which　I　very　appreciated

(179)　　　• Verbal projection
　　　a.　Ik　ga deze winter　skiën, hetgeen ik　nog nooit　eerder　heb　gedaan.
　　　　　I　go this winter　ski　　which　I　yet never　before　have　done
　　　b.　Mijn broer　kan goed zwemmen, hetgeen ik helemaal　niet kan.
　　　　　my brother　can well swim　　　which　I　completely　not can

(180) a.　Mijn auto is rood, hetgeen ik een mooie kleur vind.
　　　　　my car　　is red　　which　I　a lovely color　　find
　　　　　'My car is red, which I find a lovely color.'
　　　b.　Ik vind　　Jan een echte ambtenaar,　hetgeen ik nooit zou　willen zijn.
　　　　　I consider Jan a typical civil.servant, which   I　never would want　be
　　　　　'I consider Jan a typical civil servant, which I never would like to be.'

In fact, we believe that *hetgeen* can also take nominal antecedents, provided that the relative clause is non-restrictive. Like *wat*, *hetgeen* only accepts [+NEUTER] and [SINGULAR] antecedents. Some examples of relative clauses introduced by the pronoun *hetgeen* that were judged acceptable by our informants are given in (181).

(181) a.　Hij deed mij [een prachtig aanbod]$_i$, hetgeen$_i$ ik niet kon weigeren.
　　　　　he   did   me   a splendid offer   which   I   not could refuse
　　　　　'He made me a splendid offer, which I could not refuse.'
　　　b.　Hij kwam met [een prachtig idee]$_i$, hetgeen$_i$ we nu uit gaan werken.
　　　　　he   came with a great idea   which   we now prt. go   develop
　　　　　'He came up with a great idea, which we are now going to develop further.'

It is also possible to use *hetgeen* with concrete antecedents, provided it has nonspecific reference. As soon as the relative pronoun refers to a specific object, use of *dat* or *wat* seems preferred, although it must be noted that some of our informants did accept example (182b) with *hetgeen*.

(182) a.　Wij gaven hem een horloge, wat/hetgeen/$^{\%}$dat hij nu dagelijks draagt.
　　　　　we   gave   him a watch   which   he now daily   wears
　　　　　'We gave him a watch, which he now wears every day.'
　　　b.　Wij gaven hem vaders horloge, dat/wat/$^{\%}$hetgeen hij nu dagelijks draagt.
　　　　　we   gave him daddy's watch   which   he now daily   wears
　　　　　'We gave him daddy's watch, which he now wears every day.'

Some informants also accepted an animate antecedent for *hetgeen*; the only thing that was categorically rejected for *hetgeen* was a [+HUMAN] antecedent.

(183) a.　$^{\%}$Ik keek　naar zijn paard, hetgeen erg ziek was.
　　　　　I   looked at his horse   which very ill was
　　　　　'I looked at his horse, which was very ill.'
　　　b.　*Ik ontmoette het meisje van hiernaast, hetgeen in Leiden studeert.
　　　　　I   met　　　the girl from next.door   which in Leiden studies
　　　　　'I met the girl next door, who is studying in Leiden.'

It seems therefore that, in non-restrictive relative clauses, *hetgeen* has more or less the same distribution as *wat*. The latter is, however, preferred to the former, which only occurs in very formal contexts.

B. Quantified antecedents

The relative pronoun *hetgeen* commonly seems to be used with *al*; this is clear from the fact that a Google search on the string *[al hetgeen]* resulted in over 100,000 hits. The examples in (184), which are slightly adapted versions of examples found on the internet, can be found as subject, object, and the complement of a preposition.

(184) a. Al hetgeen ik hier neerschrijf is pure fictie.
          all which I   here write.down is pure fiction
          'All that I am writing here is pure fiction.'
     b.   Al hetgeen hij hier zegt kan hij staven   met bewijsstukken.
          all which   he here says can he substantiate with proofs
          'All that he claims here, he can substantiate with proofs.'
     c.   Ik dank Jan voor al hetgeen hij van het jaar heeft gedaan.
          I   thank Jan for all which   he last year   has done
          'I would like to thank Jan for all that he has done last year.'

Examples involving quantified antecedents like *alles* 'all', *iets* 'something', or *niets* 'nothing' feel severely degraded (although a few examples can be found on the internet). This suggests that we are actually not dealing in (184) with constructions in which *hetgeen* functions as a relative pronoun but in which the phrase *al hetgeen* functions as the antecedent of a relative clause with a phonetically empty relative pronoun. An argument in favor of this suggestion is that besides the examples in (184), we can find examples like (185), in which *dat/wat* seems to act as a relative pronoun that takes *al hetgeen* as its antecedent. Constructions of the form in (185) are less common, but still common enough to be taken seriously (the strings *[al hetgeen dat]* and *[al hetgeen wat]* resulted in about 5,500 hits).

(185) a. Al hetgeen dat/wat ik hier neerschrijf is pure fictie.
          all that   which I   here write.down is pure fiction
          'All I am writing here is pure fiction.'
     b.   Al hetgeen dat/wat hij hier zegt kan hij staven   met bewijsstukken.
          all that   which he here says can he substantiate with proofs
          'All that he claims here, he can substantiate with proofs.'
     c.   Ik dank Jan voor al hetgeen wat/dat hij van het jaar heeft gedaan.
          I   thank Jan for all that   which he last year   has done
          'I would like to thank Jan for all that he has done last year.'

An argument against this suggestion is that there is no independent evidence for the existence of the phonetically empty relative pronoun that must be postulated. We will therefore not speculate on the constructions in (184) and (185) any further, and leave the issue for future research.

C. (Semi-)free relative constructions

Hetgeen does not seem to be used in semi-free relatives, but a Google search on the string *[hetgeen hij]* suggests that it is frequently found in free relative constructions, that is, without an overt antecedent. Some (adapted) examples are given in (186).

(186) a. Hetgeen hij daar zegt klopt   niet.
          which   he there says is.right not
          'What he is saying there isn't right.'
     b.   Hij doet hetgeen hij geleerd heeft.
          he does which   he learned has
          'He does what he has been taught.'

    c.   Hij wees   mij op hetgeen er   in de kleine lettertjes stond.
        he   pointed me on that   there in the little print   stood
        'He drew my attention to what it said in the fine print.'

However, it must be noted that the examples in (186) alternate with those in (187), in which *hetgeen* functions as the antecedent of the relative pronouns *wat* and *dat*: a Google search with the strings *[hetgeen wat/dat hij]* resulted in more than 6000 hits, most of which instantiated the relevant construction.

(187) a.   Hetgeen wat   hij daar zegt   klopt   niet.
            that   which he there says   is.right not
            'What he is saying there isn't right.'
    b.   Hij doet hetgeen wat   hij geleerd heeft.
            he does that   which he learned has
            'He does what he has been taught.'
    c.   ??Hij wees   mij op hetgeen wat   er   in de kleine lettertjes stond.
            he   pointed me on that   which there in the little print   stood
            'He drew my attention to what it said in the fine print.'

This suggests that, just like in the case with quantified antecedents, *hetgeen* does not function as a relative pronoun in (186), but as the antecedent of a phonetically empty relative pronoun. Note that this would also immediately account for the fact noted earlier that *hetgeen* does not seem to enter semi-free relative constructions, that is, it cannot take a semantically light antecedent; this would then be due to the fact that it is *hetgeen* itself that functions as such an antecedent, and not as a relative pronoun. Given that there is no independent evidence for the existence of the phonetically empty relative pronoun that must be postulated, we will not speculate on the constructions in (186) and (187) any further, and again leave this issue for future research.

D. Syntactic function of the pronoun

Since the pronoun *hetgeen* has non-human, abstract reference, it occurs most naturally as the direct object of the relative clause. An example can be found in (188a). It can, however, also function as the subject of the relative clause when we are dealing with a passive or unaccusative construction, as in (188b&c).

(188) a.   Jan deed [een voorstel]$_i$, hetgeen$_i$ we unaniem   hebben aangenomen.
            Jan did   a proposal   which   we unanimously have   accepted
            'Jan made a proposal, which we accepted unanimously.'
    b.   Jan deed [een voorstel]$_i$, hetgeen$_i$ unaniem   werd aangenomen.
            Jan did   a proposal   which   unanimously was   accepted
            'Jan made a proposal, which was accepted unanimously.'
    c.   De eigenaar vroeg [duizend euro]$_i$, hetgeen$_i$ ons budget te boven ging.
            the owner   asked   a thousand euros which   our budget exceeded
            'The owner asked a thousand euros, which exceeded our budget.'

The relative pronoun *hetgeen* can also function as a nominal indirect object provided that the referent is [-HUMAN], as in (189a). Example (189b) shows, however, that it cannot occur in a prepositional indirect object (or any other PP),

which is in accordance with the general observation that prepositions do not accept [-HUMAN] pronouns as their complement; (189c) shows that in cases like these, a (split or unsplit) pronominal PP must be used; cf. Section 3.3.2.2.3.

(189) a. Jan deed [een voorstel]ᵢ, hetgeenᵢ we onze volle steun hebben gegeven.
       Jan did   a proposal   which   we our   full support have   given
       'Jan made a proposal, which we gave our full support.'
    b. *Jan deed een voorstel, aan hetgeen we onze volle steun hebben gegeven.
       Jan did   a proposal   to which   we our full support have   given
    c. Jan deed een voorstel, waaraan we onze volle steun hebben gegeven.
       Jan did   a proposal   to.which we our full support have   given

    In addition, the pronoun *hetgeen* can be used as the predicate of a non-restrictive relative clause. In this respect, *hetgeen* again behaves like *wat*, so that we can refer to the discussion of the examples in (162) and (163); just note that the (a)-examples in (190) show that the antecedent of predicative *hetgeen* can be a plural, non-neuter or [+HUMAN] antecedent, and that the examples in (190b&b′) show that antecedent and pronoun need not agree in number.

(190) a. Ze zoeken een ervaren manager,   hetgeen ik niet ben.
       they search   an experienced manager which   I   not am
       'They are looking for an experienced manager, which I am not.'
    a′. Ze zoeken ervaren managers,   hetgeen wij niet zijn.
       they search   experienced managers which   we   not are
       'They are looking for experienced managers, which we are not.'
    b. Ze zoeken een ervaren manager,   hetgeen wij niet zijn.
       they search   an experienced manager which   we   not are
       'They are looking for an experienced manager, which we are not.'
    b′. ??Ze zoeken ervaren managers,   hetgeen ik niet ben.
       they search   experienced managers which   I   not am
       'They are looking for experienced managers, which I am not.'

3.3.2.2.2. *Possessive relative pronouns*

Dutch has two possessive relative pronouns: the genitive forms *wiens* and *wier*. Constructions containing one of these forms can be represented as in (191). The indices indicate the relations within this structure. The index *i* indicates that the full DP is moved from the position of the trace into the initial position of the relative clause. The index *j* indicates that the noun (phrase) modified by the relative clause acts as the antecedent of the possessive relative pronoun.

(191) a. Restr. rel. clauses: [DP D [NP [... N ...]ⱼ [RC [DP *wiens/wier*ⱼ NP]ᵢ ... [DP tᵢ] ...]]]
       [DP de [NP jongenⱼ [RC [DP wiensⱼ hond]ᵢ [DP tᵢ] is overreden]]]
       the   boy   whose dog   is run.over
       'the boy whose dog has been overrun'
    b. Non-restr. rel. clauses: [DP D [NP ... N ...]ⱼ , [RC [DP *wiens/wier*ⱼ NP]ᵢ ... [DP tᵢ] ...]]
       [DP de [NP jongen]ⱼ , [RC [DP wiensⱼ hond]ᵢ [DP tᵢ] is overreden]]
       the   boy   whose dog   is run.over
       'the boy, whose dog has been overrun'

Being possessive forms, *wiens* and *wier* are always embedded within a larger noun phrase. The two forms combine with [+HUMAN] antecedents only (and perhaps nouns referring to certain domesticated animals). The examples in (192) show that *wiens* is used for singular masculine referents, whereas *wier* is used for singular feminine referents as well as for all plural referents.

(192) a.   Dat is de student$_{masc}$ wiens werk   niet in orde was.
          that is the student   whose work not in order was
          'That is the student whose work was not all right.'
      b.   Dat is de studente$_{fem}$ wier werk   niet in orde was.
          that is the student   whose work not in order was
          'That is the female student whose work was not all right.'
      c.   Dat zijn de studenten$_{pl.}$ wier werk   niet in orde was.
          that are the students   whose work not in order was
          'Those are the students whose work was not all right.'

When the antecedent is neuter, it is normally the pronoun *wiens* that is used. However, when the referent is female, it is not uncommon to find the pronoun *wier*. A Google search on April 25, 2008 for the strings *[meisje wiens]* and *[meisje wier]* resulted in, respectively, 2570 and 2280 hits. A similar search for the neuter noun *wijf* 'woman' resulted in, respectively, 12 and 7 relevant cases. We may therefore conclude that for some speakers the choice is determined by grammatical gender, and for some by sex.

(193) a.   Dat is de jongen/het jongetje wiens hond is overreden.
          that is the boy/the boy$_{DIM}$ whose dog is run.over
          'That is the boy whose dog has been run over.'
      b.   Dat is het meisje wiens/wier vader minister is.
          that is the girl   whose father   minister is
          'That is the girl whose father is a minister.'

Generally speaking, the use of *wiens* and, in particular, *wier* is rather formal and largely confined to written language. In speech, as well as in most written texts, the complex forms *van wie* and *waarvan* in (194) are used. In more informal, colloquial Dutch, a combination of the pronoun *wie* and the reduced form of a possessive pronoun, as in (195), can also be found.

(194) a.   Dat is de jongen   van wie/waarvan de hond   is overreden.
          that is the boy   of whom/of.whom the dog is run.over
      b.   Dat is het meisje van wie/waarvan   de vader minister is.
          that is the girl   of whom/of.whom the father minister is
      c.   Dat zijn de studenten van wie/waarvan het werk niet in orde was.
          that are the students of who/of.whom the work not in order was

(195) a. $^{\%}$Dat is de jongen wie z'n hond is overreden.
          that is the boy   who his dog is run.over
      b. $^{\%}$Dat is het meisje wie d'r vader   minister is.
          that is the girl   who her father minister is
      c. $^{??}$Dat zijn de studenten wie hun werk   niet in orde was.
          that are the students who their work not in order was

Finally, note that besides the possessive forms *wiens* and *wier*, which take [+HUMAN] antecedents, there are two archaic forms that take a [-HUMAN] antecedent and that can occasionally be found in very formal samples of written language: *welks* and *welker*. The examples in (196) show that the pronoun *welks* is used for singular [+MASCULINE] or [+NEUTER] antecedents, whereas *welker* is used for singular [+FEMININE] and plural referents.

(196) a.   een brief~masc~ welks taal   al te dreigend   is
            a letter   whose language all too threatening is
            'a letter the language of which is too threatening'

      b.   het bedrijf~neuter~ welks directeur hij van fraude beschuldigde
            the company   whose director he of fraud   accused
            'the company the director of which is accused of fraud'

      c.   de natie~fem~ welker economische groei het groot   is
            the nation whose economic growth   the biggest is
            'the nation whose economic growth is largest'

      d.   museums~pl.~ welker collecties de meeste bezoekers trekken
            museums   whose collections the most visitors   attract
            'museums whose collections attract the largest number of visitors'

The examples in (197) give the colloquial forms of the examples in (196), which involve extraction of the possessive pronominal PP *waarvan* 'of which' from the noun phrase.

(197) a.   een brief~masc~ waarvan~i~ [de taal *t*~i~]   al te dreigend   is
            a letter   of.which the language all too threatening is

      b.   het bedrijf~neuter~ waarvan~i~ hij [de directeur *t*~i~] van fraude beschuldigde
            the company of.which he the director   of fraud   accused

      c.   een natie~fem~ waarvan~i~ [de economische groei *t*~i~] het grootst is
            a nation   of.which the economic growth   the biggest is

      d.   museums~pl.~ waarvan~i~ [de collecties *t*~i~] de meeste bezoekers trekken
            museums   of.which the collections   the most visitors   attract

3.3.2.2.3. *The relative pronominal PP* waar + P

Relative pronominal PPs always have the form *waar + P*, but there are two slightly different patterns. The first is the so-called split pattern of the pronominal PP in (198), in which the °R-pronoun *waar* is extracted from the PP, so that the preposition is stranded in the original position of the PP; see Chapter P5, from which we will adopt the convention of giving the discontinuous PP *waar ... P* in italics. The index *i* expresses both that the R-pronoun has been extracted from the PP and that the noun (phrase) modified by the relative clause acts as the antecedent of this R-pronoun.

(198) a. Restrictive relative clauses: [$_{DP}$ D [$_{NP}$ [... N ...]$_i$ [$_{RC}$ *waar*$_i$ ... [$_{PP}$ P t_i] ...]]]
      [$_{DP}$ de [$_{NP}$ trein$_i$ [$_{RC}$ *waar*$_i$ hij [$_{PP}$ *mee t$_i$*] reist]]]
         the   train   where he   with   travels
      'the train he is traveling on'

     b. Non-restrictive relative clauses: [$_{DP}$ D [$_{NP}$ ... N ...]$_j$, [$_{RC}$ *waar*$_i$ ... [$_{PP}$ P t_i] ...]]
      [$_{DP}$ deze [$_{NP}$ trein]$_i$, [$_{RC}$ *waar*$_i$ hij [$_{PP}$ *mee t$_i$*] reist]]
         this   train   where he   with   travels
      'this train, which he's traveling on'

The second is the unsplit pattern of the pronominal PP, in which the preposition is PIED PIPED by the pronominal part *waar* into the initial position of the relative clause. In these examples, the index *i* indicates that the full PP has been moved from the position of the trace into the initial position of the relative clause, and the index *j* indicates that the noun (phrase) modified by the relative clause acts as the antecedent of the R-pronoun *waar*.

(199) a. Restrictive relative clauses: [$_{DP}$ D [$_{NP}$ [... N ...]$_j$ [$_{RC}$ [$_{PP}$ *waar*$_j$-P]$_i$ ... t_i] ...]]
      [$_{DP}$ de [$_{NP}$ trein$_j$ [$_{RC}$ [$_{PP}$ waar$_j$-mee]$_i$ hij t_i reist]]]
         the   train   where-with he   travels
      'the train he is traveling on'

     b. Non-restrictive relative clauses: [$_{DP}$ D [$_{NP}$ ... N ...]$_j$, [$_{RC}$ [$_{PP}$ *waar*$_j$-P]$_i$ ... t_i ...]]]
      [$_{DP}$ deze [$_{NP}$ trein]$_j$, [$_{RC}$ [$_{PP}$ waar$_j$-mee]$_i$ hij t_i reist]]
         this   train   where-with he   travels
      'this train, which he's traveling on'

I. Features of the antecedent

Section 3.3.2.2.1, sub II, has shown that when the antecedent is [+HUMAN] and the relative pronoun is part of a prepositional phrase in the relative clause, the pronoun *wie* can be used, as in (200b). However, this construction alternates with those in (200c&c′), where the pronominal PP *waar* + P is used.

(200) a. Ik ben al jaren   met die jongen bevriend.
      I   am already years with that boy   friendly
      'I've been friends with that boy for years.'

     b. Dit is de jongen met wie   ik al jaren   bevriend ben.
      this is the boy   with whom I   already years friendly am
      'This is the boy with whom I have been friends for years.'

     c. Dit is de jongen *waar* ik al jaren   *mee* bevriend ben.
      this is the boy   where I   already years with friendly am
      'This is the boy I have been friends with for years.'

     c′. Dit is de jongen waarmee ik al jaren   bevriend ben.
      this is the boy   where-with I   already years friendly am

There seems to be a mild normative pressure that favors the use of the form *P + wie* (cf. http://taaladvies.net/taal/advies/vraag/887/), which may be due to the fact that pronominal PPs are normally not used to refer to [+HUMAN] entities in other contexts. However, the actual use of relative pronominal PP does not seem to be less frequent than that of the relative form *P + wie*. This will be clear from the fact

that a Google search performed in November 2008 on the strings [*jongen met wie*] and [*jongen waarmee*] resulted in, respectively, 6,000 and 5,000 hits. In fact, the relative pronominal PP *waar + P* may turn out to be far more popular than the numbers above suggest, given that the pronominal PP also occurs in the split pattern: a search on the combination of [*jongen waar*] and *[mee]* gave an additional 19,000 hits, a substantial part of which instantiated the split pattern in (200c).

The examples in (201b) show that the R-pronoun *waar* is not sensitive to the gender of the antecedent. Neither is it sensitive to the number of the antecedent, as is shown by (201c).

(201) a. Hij werkt al jaren   met dit systeem$_{neuter}$/deze software$_{non-neuter}$.
      he   works already years   with this system/this software
      'He has been working with this system/software for years.'

   b. Dat is het systeem/de software waar<mee> hij al jaren <mee> werkt.
      that is the system/the software where-with he already years   works
      'That is the system/software he has been working with for years.'

   c. Dat   zijn de systemen waar<mee> hij al jaren <mee> werkt.
      these are the systems   where-with he already years   works
      'These are the systems he has been working with for years.'

II. Syntactic function of the pronoun

The examples in (202) show that the relative R-pronoun *waar* in (201b) cannot be replaced by the relative pronouns *die* or *dat*. Observe that we do not give the counterpart of the split pattern in (201), since preposition stranding is only possible with R-pronouns.

(202) a. *Dat is het systeem$_i$ met dat$_i$ hij al jaren   werkt.
           that is the system   with that he already years works
      b. *Dat is de software$_i$ met die$_i$ hij   al jaren   werkt.
           that is the software with that he already years   works

The examples in (202) and (201b) show that the relative pronouns *die* and *dat* resemble the pronoun *het* in requiring R-pronominalization to take place (see Chapter P5); the relative pronoun *wie*, on the other hand, does not undergo this process. Descriptively speaking, we have the rules in (203). After R-pronominalization has taken place the pronominal PP can be put in the initial position of the relative clause, or be split so that only the R-pronoun is placed in clause-initial position.

(203) a. P + het $\Rightarrow$ er + P   a'. *met het   a''. *ermee* 'with it'
      b. P + die/dat $\Rightarrow$ waar+P b'. *met die   b''. *waarmee* 'with which'
      c. P + wie   c'. *met wie* 'with whom' c''. n.a.

In the following two subsections we will show that the relative pronominal PP *waarmee* may function as an argument or a complement of the relative clause. In the third subsection we will discuss a complicating factor in describing the distribution of relative *waarmee*.

A. Extractability

Normally, the relative pronominal PP *waar* + *P* can only be used if the PP can undergo R-pronominalization in other contexts as well. An example is given in (204): example (204b) shows that the locational PP *op een stoel* in (204a) can be readily pronominalized, and correspondingly, the pronominal PP *waarop* can also be used in (204c), either in its split or unsplit form.

(204) a. Ik zit op een stoel.   b. Ik zit erop.
           I   sit on a chair   I   sit there-on
           'I am sitting on a chair.'   'I am sitting on it.'
     c. De stoel waar<op> ik <op> zit is erg oud.
          the chair where-on I   sit is very old
          'The chair I am sitting on is very old.'

The examples in (205) are, however, exceptional: example (205b) shows that R-pronominalization of temporal PPs is normally not possible, whereas example (205c) shows that the relative pronominal PP *waarop* can have a temporal function. The main difference with the examples in (204) is that the temporal PP cannot be split. More examples of relative adverbial phrases that behave in this way will be given in Section 3.3.2.2.4 on relative adverbs.

(205) a. Ik trouwde op de dag dat ...   b. *?Ik trouwde erop.
           I   married on the day that ...   I   married   there-on
           'I got married on that day.'
     c. De dag waar <op> ik <*op> trouwde vergeet ik nooit.
          the day where-on I   married forget I   never
          'The day I got married I will never forget.'

B. Complements and adjuncts

The examples below show that the relative pronominal PP *waar* + *P* can be used for both complements and adjunct PPs: the examples in (206) contain the PP-complement *op een walvis* 'on a whale' and the examples in (207) contain the PP-adjunct *met de trein* 'with the train'. In both cases *waar* can be used, either together with the preposition or with the preposition stranded.

(206) a. Hij jaagt op een witte walvis.
          he   hunts on a white whale
          'He is hunting a white whale.'
     b. De walvis waar   <op> hij <op> jaagt is wit.
          the whale where   on   he   hunts is white
          'The whale he is hunting is white.'

(207) a. Hij komt   met de trein.
          he   comes with the train
          'He's coming by train.'
     b. De trein waar   <mee> hij <mee> reist   is vertraagd.
          the train where with   he   travels is delayed
          'The train he's traveling on has been delayed.'

A caveat is perhaps in order here. The examples in (208) show that, as expected, the relative pronoun *die* cannot replace *waar* in the (b)-examples. It must be noted, however, that (208a) is acceptable when the adposition and the verb are interpreted as the particle verb *opjagen* 'to rout'; in that case, the relative pronoun *die* is an accusative noun phrase, not the complement of the adposition *op*. The two cases differ not only in meaning but also in intonation pattern: the particle *op* normally bears stress (*dat we de walvis* OP *jagen* 'that we rout the whale'), whereas stress is normally assigned to the verb (or some other element) when we are dealing with a stranded preposition (*dat we er al tijden op jagen* 'that we have hunted it for ages').

(208) a. #De walvis die   hij op jaagt   is wit.
           the whale that he   on hunts is white
     b. *De trein   die   hij mee reist   is vertraagd.
           the train   that he   with   travels is delayed

C. A problematic case

Describing the distributional properties of the relative pronominal PP is complicated by the fact that some adpositions can be used either as a preposition or as a postposition, and in these cases *die*/*dat* and *waar* seem to alternate. In order to set the stage for the discussion, first consider example (209), in which we find the stranded preposition *mee*. The relevant observation is that this stranded preposition *mee* must precede the clause-final verbal sequence, and cannot permeate it; cf. Van Riemsdijk (1978: 162/163).

(209) a.   Dat is de software   *waar*   hij jaren *mee*   heeft gewerkt.
            that is the software   where he years with   has   worked
            'That is the software he has been working with for years.'
     b.   *Dat is de software *waar* hij jaren heeft *mee* gewerkt.

Postpositions behave differently in this respect: the examples in (210) show that postpositions can readily permeate the clause-final verb cluster. From the data in (209) and (210), we may conclude that, whenever we find an adposition within the verb cluster, we are dealing with a postposition (or a particle), not with a stranded preposition.

(210) a.   omdat   hij die boom <in> is <in>   geklommen.
            because he that tree into is   climbed
            'because he has climbed into that tree.'
     b.   omdat   de kapitein/boot de haven   <in> is <in>   gevaren.
            because the captain/boat the harbor into is   sailed
            'because the captain/boat has sailed into the harbor.'

Now, consider the primeless examples in (211), in which the complement of the adposition *in* can be realized either as the relative pronoun *die* or as the R-pronoun *waar*. Given that the adposition *in* can permeate the verb cluster, we must conclude that we are dealing with a postposition in both cases. These examples therefore suggest that the complement of a postposition can be realized either as a regular relative pronoun or as the relative R-pronoun *waar*.

(211) a. de boom die/waar hij <in> is <in> geklommen
          the tree that/where he into is   climbed
          'the tree he has climbed into'
      b. de haven die/waar de kapitein/boot <in> is <in> gevaren
          the harbor that/where the captain/boat into is   sailed
          'the harbor the captain has sailed into'

This conclusion seems to be contradicted by example (212b); in this example the complement of the postposition *in* cannot be realized as the relative pronoun *die*, but must be realized as an R-pronoun (although even this option does not seem to be fully acceptable).

(212) a. omdat de kapitein het schip de haven <in> heeft <in> gevaren.
          because the captain the ship the harbor into has   sailed
          'because the captain has sailed the ship into the harbor.'
      b. de haven [?]waar/*die de kapitein het schip <in> heeft <in> gevaren
          the harbor where/that the captain the ship into has   sailed

The crucial difference between the examples in (211b) and (212) seems to be related to the status of the verb *varen* 'to sail': it acts as an unaccusative verb in (211), and the °logical SUBJECT of the directional PP (*de kapitein/het schip* 'the captain/ship') surfaces as the subject of the clause; the verb in (212), on the other hand, is not unaccusative, so that the external argument of the PP (*het schip* 'the ship') surfaces as an object. It will be clear that this problem merits further discussion, which will be given in Section P5.2.2 (where we will actually not reach a definite conclusion either).

3.3.2.2.4. *Relative adverbial phrases*

Dutch has a number of pronominal relative elements, which may function as a specific type of prepositional complement or adverbial phrase in the relative clause. For short, we will refer to these elements as relative adverbs; relative clauses with these adverbs can be given the structural representation in (213). The relative adverb may take various forms, depending on the semantic function (location, reason, manner, time, type) of the prepositional adjunct in question. We will discuss the various forms below.

(213) a. Restrictive relative clauses: $[_{DP}$ D $[_{NP}$ [... N ...]$_i$ $[_{RC}$ [adverb]$_i$...$[_{PP}$ t_i] ...]]]
          $[_{DP}$ de $[_{NP}$ dag$_i$ $[_{RC}$ waarop$_i$ ik geboren $[_{PP}$ t_i] ben]]]
              the   day   where-on I born   am
          'the day I was born'
      b. Non-restrictive relative clauses: $[_{DP}$ D $[_{NP}$ ... N ...]$_i$, $[_{RC}$ [adverb]$_i$... $[_{PP}$ t_i] ...]]
          $[_{DP}$ deze $[_{NP}$ dag]$_i$, $[_{RC}$ waarop$_i$ ik geboren $[_{PP}$ t_i] ben]]
              this   day   where-on I born   am
          'this day, when I was born'

I. The R-pronoun *waar*

The relative adverb *waar* corresponds to a locational PP, just like the demonstrative R-pronouns *daar* 'there' or *hier* 'here'. In (214) it functions as an adverbial phrase,

and in (215) as the obligatory complement of the verb *wonen* 'to live'. As shown in (214b&c), relative clauses introduced by *waar* can be either restrictive or non-restrictive.

(214) a.   Ik ben geboren in dat huis/daar.
              I   am   born   in that house/there
              'I was born in this house.'
     b.   Dat is het huis$_i$ waar$_i$ ik geboren ben.
              that is the house where I   born   am
              'That is the house where I was born.'
     c.   Dit huis,   waar ik geboren ben, wordt binnenkort afgebroken.
              this house where I   born   am is   soon   demolished
              'This house, where I was born, will soon be demolished.'

(215) a.   Ik woon in deze stad/hier.
              I   live   in this city
     b.   Dit is de stad$_i$ waar$_i$ ik woon.
              this is the city where I   live

Note that the categorial status of the relative adverb *waar* differs from the categorial status of its antecedent: the (a)-examples show that *waar* is a pro-form of a locational PP, whereas the antecedent is an NP (in the case of a restrictive relative clause) or a DP (in the case of a non-restrictive relative clause). This poses a problem for the assumption adopted earlier, according to which the relative pronoun is referentially dependent on its antecedent. This problem can be solved by assuming that pro-forms like *daar*/*hier* 'there/here' and *waar* are actually PPs containing a covert preposition (cf., e.g., Van Bart et al. 1998): the analysis of examples in (214b&c) and (215b) would then be completely on a par with relative constructions in which the relative pronoun pied pipes a preposition. Here, we will not discuss whether such an analysis is tenable, but leave this to others to decide.

Relative clauses introduced by *waar* can also be used as free relatives, in which the head is not overtly expressed (cf. *de plaats waar hij woont* 'the place where he lives'). Examples can be found in (216).

(216) a.   Waar hij woont, is niet bekend.
              where he lives   is not   known
              'Where he lives is unknown.'
     b.   Ik weet niet waar   ik geboren ben.
              I   know not   where I   born   am
              'I don't know where I was born.'

Although the more or less idiomatic construction in (217a) can possibly also be regarded as a free relative, it is different in a number of ways. First, the particle *ook* is obligatorily present, which seems to add a concessive meaning to the construction (no matter where you come ...). Second, (217b) shows that it is impossible for the *waar*-construction to take an antecedent.

(217) a. Waar je   ook komt, ze   kennen hem.
      where you   PRT come   they know   him
      'Wherever you come, they know him.'
   b. *(Op) de plaats waar je   ook komt, ze   kennen hem.
       at   the place where you PRT come   they know   him

Finally, the *waar*-phrase does not act as an argument or adjunct in the main clause, but is external to it. Given that Dutch is a °verb-second language, the finite verb in declarative main clauses is preceded by a single constituent. Given that the subject occupies this position in (217a), the *waar*-phrase must be clause-external. This conclusion is also supported by the fact illustrated by (218a) that the *waar*-phrase cannot occupy the first position of the clause itself. In this respect it differs from constituents of the clause, as is shown by the minimally different example in (218b), in which the relative adverb *waar* takes as its antecedent the universally quantified *overal* 'everywhere', which functions as a spatial adverbial phrase.

(218) a. *Waar je   ook komt kennen ze   hem.
      where you   PRT come know   they him
   b. Overal   waar je   komt, kennen ze   hem.
      everywhere where you come   know   they him
      'Wherever you come they know him.'

II. waar + P (temporal/manner adverbs)

This subsection discusses two relative adverbs that have the form of a pronominal PP, like *waarop* and *waarin*. These pronominal PPs do not have a non-relative counterpart and cannot be split, that is, the preposition must be pied piped to the initial position of the relative clause, contrary to what is the case with other types of pronominal PPs. This has already been illustrated for *waarop* in (205). The relative adverb *waarop* can be used in two ways: its antecedent may be an NP with a temporal referent (denoting a relatively short period of time) or an NP with a manner referent. In the relative clause, this relative adverb functions as a prepositional adjunct of time and manner, respectively. Examples can be found in (219).

(219) a. Dit was het moment$_i$ [$_{RC}$ waarop$_i$ hij besloot in   te grijpen].   [time]
      this was the moment   where-on he decided prt. to intervene
      'This was the moment he decided to intervene.'
   a′. Zaterdag is de dag$_i$ [$_{RC}$ waarop$_i$ ik uitga].   [time]
      Saturday is the day   where-on I   go.out
      'Saturday is the day I go out.'
   b. Dat is de manier$_i$ [$_{RC}$ waarop$_i$ ik het zou   hebben gedaan].   [manner]
      that is the way   where-on I   it would have   done
      'That is the way I would have done it.'
   b′. De wijze$_i$ [$_{RC}$ waarop$_i$ hij zich gedraagt] keur   ik af.   [manner]
      the way   where-on he REFL behaves disapprove I   prt.
      'I disapprove of the way he is behaving.'

Note that many, but not all, speakers can replace *waarop* in (219b&b′) by the interrogative manner adverb *hoe* 'how': a Google search performed in May 2008 gave 2,790,000 hits for the string *[de manier waarop]* and nearly 79,000 hits for the string *[de manier hoe]*. Interestingly, the manner adverb *hoe*, but not the relative adverb *waarop*, can also be used in a free relative construction (Haslinger 2007).

(220) a.　Ik　bewonder　de manier [$_{RC}$ waarop/$^{%}$hoe　jij　het gedaan hebt].
　　　　　I　admire　the way　where-on/how　you it done　have
　　　　　'I admire the way you have done it.'
　　b.　Ik　bewonder [$_{RC}$ hoe/*waarop jij　het gedaan hebt].
　　　　　I　admire　how/where-on you it done　have

The relative adverb *waarin* is used in a similar fashion with temporal nouns denoting longer periods of time, such as *maand* 'month', *week* 'week', *periode* 'period', *winter* 'winter' etc. This is illustrated in the primed examples in (221), which also show that the split pattern is excluded. The primeless examples show that there is no non-relative form of the pronominal PP.

(221) a.　Ik　ben　in januari/*erin　geboren.
　　　　　I　am　in January/in it　borne
　　　　　'I was born in January.'
　　a′.　De maand waarin　ik　geboren ben　was　het erg koud.
　　　　　the month where-in I　born　am was it　very cold
　　　　　'The month I was born it was very cold.'
　　b.　Ik　was in maart/*erin　op vakantie.
　　　　　I　was in March/in it　on holiday
　　　　　'I have been on holiday in March.'
　　b′.　De week waarin　ik　op vakantie was, is er　erg veel　gebeurd.
　　　　　the week where-in I　on holiday　was　is there　very much happened
　　　　　'The week I was on holiday a lot happened.'

Although the relative adverbs *waarop* and *waarin* are the most frequent ones, other forms like do occur, which is clear from the results of a Google search performed in May 2008 on the strings shown in (222): note that most hits for the string *[de dag waarvoor]* involved cases in which the pronominal PP *waarvoor* had a non temporal meaning.

(222) a.　*de dag waarop* 'the day on which': 556,000 hits
　　b.　*het jaar waarin* 'the year in which': 303,000 hits
　　c.　*de dag waarna* 'the day after which': 1,490 hits
　　d.　*de dag waarvoor* 'the day before which': < 1,120 hits

To conclude, we want to stress that the inability to take the form of a non-relative pronominal PP or to occur in the split pattern is not common to all adverbial phrases. Instrumental PPs, for example, are generally considered adverbial phrases, but still they allow the formation of a pronominal PP, which in addition can be split. This is demonstrated again in example (223); see Section 3.3.2.2.3 for more discussion.

(223) a. Hij heeft met dat systeem/ermee   gewerkt.
        he has   with that system/there-with worked
        'He has worked with that system/it.'
    b. Dit is het systeem waar\<mee\> hij \<mee\> gewerkt heeft.
        this is the system   where-with he   worked   has
        'This is the system he has worked with.'

III. Toen*/*wanneer *'when'*

Temporal phrases can be relativized not only by means of the relative adverbs *waarop*/*waarin*, but also (at least marginally) by means of the elements *toen* and *wanneer*. The difference between the latter two elements is that *toen* refers to a moment in the past, as a result of which it can only introduce a relative clause containing a finite verb in the past tense, whereas *wanneer* can only be used in present or future tense relative clauses. Some examples are given in (224) and (225).

(224) a. ^(?)De tijd toen men nog per koets   reisde   ligt ver achter ons.
        the time when one still by carriage traveled lies far behind us
        'The days when people traveled by carriage are far behind us.'
    b. [?]De lente   toen ik geboren werd was het ontzettend koud.
        the spring when I   born   was was it extremely cold
        'The spring I was born it was extremely cold.'
    c. ^{??}De dag toen ik geboren werd was het ontzettend koud.
        the day when I   born   was was it   extremely cold
    d. ^{??}Het moment toen ik naar buiten   ging begon het te regenen.
        the moment when I   to   outside went began it to rain
        'The moment I went out it started to rain.'

(225) a. [?]Het jaar wanneer ik tachtig word,   vergaat   de wereld.
        the year when   I   eighty become perishes the world
        'The year I turn eighty the world will perish.'
    b. ^{??}De tijd wanneer iedereen een computer heeft is nog ver weg.
        the time when   everyone a computer   has   is still far away
        'The time when everyone has a computer is still far away.'
    c. ^{??}De dag wanneer ik de loterij   win stop ik met werken.
        the day when   I   the lottery win stop I with work
        'The day I win the lottery I'll stop working.'
    d. ^{??}Het moment wanneer ik terugkom bel ik je   op.
        the moment when   I   return   call I   you prt.
        'The moment I return I'll call you.'

Although the examples above can readily be found on the internet, we have judged them as marked to questionable. The reason for this is that the relative adverbs can always be replaced by the relative particle *dat*, which will be discussed in 3.3.2.2.5, which is more frequent and always gives rise to a fully acceptable result.

IV. Waarom *'why'*

At first sight, the relative adverbs *waarop* and *waarin* seem similar to the form *waarom* 'why' in (226a). However, the latter form differs from the former in that it

can be used as part of a free relative (without an antecedent). This will become clear by comparing (226a) to (226b&c).

(226) a. (De reden) waarom ik het gedaan heb, vertel ik liever niet.
         the reason why   I it done   have tell I rather not
         '(The reason) why I did it I'd rather not tell.'
    b. *(De manier) waarop ik het gedaan heb, was niet efficiënt.
         the way   where-on I it done   have was not efficient
    c. *(De week) waarin ik op vakantie was, is er   erg veel   gebeurd.
         the week   where-in I on holiday was   is there very much happened

We must, however, keep in mind that there might be an analysis of (226a) that does not involve a relative but a complement clause, in which case the noun *reden* would not be construed as the antecedent of *waarom* but as a proposition noun. An argument in favor of such an analysis is that, as shown in (227), the part of the clause excluding the adverb *waarom* can be deleted.

(227)   De reden waarom ~~ik~~ ~~het gedaan~~ heb, vertel ik liever niet.
        the reason why   I it done have tell I rather not
        'The reason why (I did it) I'd rather not tell.'

This phenomenon, which is know as sluicing, is a typical property of clausal complements of verbs of saying and nouns derived from them; cf. (228). Since the examples in (229) show that relative clauses do not allow sluicing, the acceptability of (227) strongly suggests that we are dealing here with a clausal complement as well. If so, we must conclude that *waarom* is not a relative adverb.

(228) a. Jan vroeg waarom (hij niet kwam).
         Jan asked why   he not came
         'Jan asked why (he didn't come)'
    b. de vraag   waarom (hij niet kwam)
         the question why   he not came
         'the question why (he didn't come)'

(229) a. Het moment waarop ^{*?}(hij besloot in   te grijpen)   was goed gekozen.
         the moment where-on he decided prt. to intervene was well chosen
    b. De week waarin *(ik op vakantie was,) is er   erg veel   gebeurd.
         the week where-in   I on holiday was   is there very much happened

The argument may be weakened, however, in light of the fact that relative manner adverbs can be used without the remainder of the clause. It might be the case that we are dealing with a more or less idiomatic case here, but it will be clear that this is not the place to interpret the data in this subsection any further.

(230)   De manier waarop (ik het gedaan heb,) was niet efficiënt.
        the way   where-on I it done   have was not efficient
        'The way I did it was not very efficient.'

V. Zoals

Clauses introduced by the element *zoals* differ from the relative clauses discussed so far in that it does not restrict the TOKEN-set of the antecedent, but its TYPE. In the

relative clause, the conjunction *zoals* functions as a kind of adjunct specifying the type of entity referred to by the head of the construction (and in this respect it functions much as it does in *een man (zo)als hij* 'a man like him'). In order for this to be possible, the antecedent itself must also be realized in pronominal form in the relative clause. In (231a), the type of the antecedent *kerken* 'churches' (that is, *zulke kerken* 'such churches') seems to be relativized by the element *zoals*, which seems to function as an adjunct to the obligatorily present demonstrative pronoun *die* 'those' within the relative clause, which is coreferential with the antecedent of *zoals*. The same thing holds for the sentence in (231b), where the personal pronoun *ze* 'they' is used to refer back to the antecedent *boeken*. In (231c), °quantitative *er* is used to refer back to the non-referential (predicative) noun phrase *een man* 'a man' in the main clause.

(231) a.   Kerken zoals men *(die) vroeger bouwde, zie je niet veel meer.
            churches like   they those earlier built   see you not much more
            'Churches like the ones they built earlier, one doesn't see much anymore.'
    b.   Boeken zoals Mulisch *(ze) schrijft, zijn mij te literair.
            books   like Mulisch   them writes   are me too literary
            'Books like the ones Mulisch writes are too literary for me.'
    c.   Jan is een man zoals je   *(er) niet veel tegenkomt.
            Jan is a man   like you   ER   not much prt.-meet
            'Jan is the kind of man one doesn't meet very often.'

It is clear that we are dealing here with restrictive clauses; the question of whether we are dealing here with relative clauses in the proper sense of the word, however, we leave open for future research, while noting that Heringa & De Vries (2008) claim that we are dealing with appositions in these examples.

3.3.2.2.5.   *The relative particle* dat

The relative particle *dat* differs from all other relative elements in a number of ways. In what follows its most important features will be discussed.

I. Form: the relative particle is invariable

The relative particle differs from the regular relative pronoun (cf. Table 4) in that its form does not depend on the gender and number of the antecedent: it invariably surfaces as *dat*, and in this respect it resembles the declarative complementizer *dat* 'that': in (232a), *dat* is used despite the fact that the antecedent is headed by the non-neuter noun *week* 'week', and in (232b) we use *dat* regardless of whether the neuter noun *moment* 'moment' is singular or plural.

(232) a.   De week dat we op vakantie waren, regende het voortdurend.
            the week that we on holiday were   rained   it   constantly
            'The week we were on holiday it rained constantly.'
    b.   Op het moment/de momenten dat het niet regende, gingen we naar buiten.
            on the moment/the moments that it not rained   went   we to outside
            'At the moment(s) it didn't rain we went inside.'

II. Function: the relative particle is an adverbial adjunct of time

Within the relative clause, the relative particle *dat* (or its corresponding gap) can only function as an adverbial time adjunct; its antecedent is always a temporal noun. This can be seen from the examples in (233).

(233) a.　Wij　trouwden [de dag na Pasen]$_{TEMP\text{-}ADJ}$.
　　　　　we　married　the day after Easter
　　　　　'We got married the day after Easter.'

　　　a′.　Dat　was　de dag [$_{RC}$ dat$_{TEMP\text{-}ADJ}$　wij trouwden].
　　　　　that was the day　　that　　　　we married
　　　　　'That was the day we got married.'

　　　b.　[Die week]$_{TEMP\text{-}ADJ}$ waren　wij　op vakantie.
　　　　　that week　　　　　were　we　on holiday
　　　　　'That week we were on holiday.'

　　　b′.　De week [$_{RC}$ dat$_{TEMP\text{-}ADJ}$　we op vakantie waren]　is hij overleden.
　　　　　the week　　that　　　　we on holiday were　　is he died
　　　　　'The week we were on holiday he died.'

Apart from such obvious cases as *dag* 'day', *week* 'week', *maand* 'month', *jaar* 'year', *moment* 'moment' etc., the temporal antecedent may also take the form of nouns which can, but need not, be used to refer to a period of time, such as *vakantie* 'vacation', *maaltijd* 'meal', etc.

(234) a.　Dat　was de vakantie　dat onze spullen　gestolen　werden.
　　　　　that was the holiday　that our things　stolen　　were
　　　　　'That was the holiday our things were stolen.'

　　　b.　$^?$De maaltijd　dat　hij me ten huwelijk　vroeg　zal　ik　nooit vergeten.
　　　　　the meal　　　that he me to marriage　asked　will I　never forget
　　　　　'The meal during which he proposed to me I will never forget.'

Since the relative pronoun for singular, neuter antecedents has the same form as the relative particle, confusion may sometimes arise as to which form we are dealing with. This is illustrated by the primeless examples in (235): although the form *dat* is used in both cases, pluralization reveals that we are dealing with the regular pronoun *dat* in (235b), since its form changes into *die*, whereas we are dealing with the invariant particle *dat* in (235a).

(235) a.　Het enige weekend dat　het mooi weer　　　was, hebben　we gewandeld.
　　　　　the only weekend　that it　beautiful weather was　have　　we walked
　　　　　'The only weekend the wheather was good we took a walk.'

　　　a′.　De weekenden dat　het mooi weer　　　was hebben　we gewandeld.
　　　　　the weekends　that it　beautiful weather was have　　we walked

　　　b.　Het weekend dat　we samen　doorbrachten zal　ik　nooit vergeten.
　　　　　the weekend　that we together prt.-spent　　will I　never forget
　　　　　'The weekend we spent together I will never forget.'

　　　b′.　De weekenden die　we samen　doorbrachten zal　ik　nooit vergeten.
　　　　　the weekends　　that we together prt.-spent　　will I　never forget

The difference between the two sets of examples is related to the syntactic function of the relative element. In (235a) the relative particle clearly functions as an adverbial modifier of time, whereas in (235b) the relative pronoun functions as the object of the particle verb *doorbrengen* 'to spend'. Sometimes the form *dat* is ambiguous. This is the case in (236a): apparently, the relative clause can be interpreted either with *dat* as a temporal adjunct or with *dat* as an object of the complex verb *samen zijn* 'to be together'.

(236) a.   Het weekend dat we samen waren zal ik nooit vergeten.
          the weekend that we together were   will I   never forget
          'The weekend we were together I will never forget.'

   b.   De weekenden die/dat we samen waren zal ik nooit vergeten.
          the weekends   that   we together were   will I   never forget
          'The weekends we were together I will never forget.'

Since the relative particle *dat* functions as a temporal adjunct in the relative clause, it is not surprising that in many cases it can be replaced by the temporal relative adverbs *waarop* and *waarin* (cf. *op die dag* 'on that day', *in die maand* 'in that month'). Some examples are found in (237), in which the two types of relative elements can be used without a perceivable change in acceptability or meaning.

(237) a.   Dat was de dag dat/waarop   ik mijn eerste auto kocht.
          that was the day that/where-on I   my first car   bought
          'That was the day I bought my first car.'

   b.   Het moment dat/waarop   ik hem voor het eerst zag vergeet ik nooit.
          the moment that/where-on I   him for the first   saw forget   I   never
          'The moment I first saw him I will never forget.'

   c.   De maand dat/waarin   ik jarig   ben valt in de zomer.
          the month that/where-in I   having.my.birthday. am   falls in the summer
          'My birthday is in summer.'

   d.   De momenten dat/waarop   we mooi weer   hadden waren schaars.
          the moments   that/where-on we beautiful weather had   were   scarce
          'The moments we had good weather were scarce.'

The examples in (238) show, however, that in some cases, one of the two forms may be preferred: in (238a), use of the relative adverb *waarop* seems to be the only option, whereas in (238b&c) the use of the relative adverb *dat* is clearly preferred to that of the relative adverb *waarop*, which gives rise to a somewhat marked result.

(238) a.   Woensdag is de dag   waarop/*?dat ik geboren ben.
          Wednesday is the day where-on/that I   born   am
          'Wednesday is the day on which I was born.'

   b.   Sinds de dag dat/??waarop   ik geboren ben woon ik in deze straat.
          since the day that/where-on I   born   am live   I   in this street
          'Since the day I was born, I have lived in this street.'

   c.   De dagen dat/??waarop   het hier regent, kun je   op één hand tellen.
          the days   that/where-on it   here rains   can you on one hand   count
          'The days on which it rains here one can count on the fingers of one hand.'

Although it may be difficult to detect a clear difference in meaning between these examples, the attested preferences seem related to that between the examples in (239), which clearly do have a difference in meaning: the temporal adjunct in (239a) takes the form of a bare nominal, and is taken to refer to a particular day in the past (in this case last Wednesday), whereas the temporal adjunct in (239b) takes the form of a PP and is taken to convey that the baby was born on a particular day of the week, namely on a Wednesday (but not necessarily last Wednesday).

(239) a. De baby is woensdag   geboren.   [= last Wednesday]
          the baby is Wednesday born
          'The baby was born Wednesday.'
      b. De baby is op (een) woensdag geboren.   [= on a Wednesday]
          the baby is on a Wednesday   born
          'The baby was born on a Wednesday.'

This explains the oddness of example (238a) with the particle *dat*: the most likely interpretation of this example is that in which reference is made to a particular day of the week, in which case the use of a PP is preferred. In example (238b), on the other hand, reference is made to a particular time in the past; hence the preference for the relative particle *dat* over the relative adverb *waarop*. Similarly, in example (238c) reference is made to the set of days that it rains in a particular place, not to any particular days of the week that it rains.

   Another interesting difference can be found in constructions allowing both the relative adverb *waarin* and the relative particle *dat*. Consider the examples in (240). The two primeless sentences in (240) can both be taken to mean that the speaker is away on holiday throughout the week referred to, or only for part of the week. However, the preferred reading differs for the two examples: in (240a) the preference seems to be for the former, and in (240b) for the latter interpretation. As soon as a relative construction is used, the difference in meaning becomes more pronounced. Thus the construction in (240a′) implies that it is the whole week that is referred to, whereas (240b′) indicates that the vacation takes up only part of the week.

(240) a. Die week ben ik op vakantie.
          that week am I   on holiday
          'That week I will be away on holiday.'
      a′. Dat is de week   dat ik op vakantie ben.
          that is the week that I   on holiday am
          'That is the week I'll be away on holiday.'
      b. In die week   ben ik op vakantie.
          in that week   am I   on holiday
          'In that week I'll be away on holiday.'
      b′. Dat is de week   waarin   ik op vakantie ben.
          that is the week where-in I   on holiday am
          'That is the week in which I'll be away on holiday.'

A final property of the relative particle that needs to be mentioned is that it cannot function as a prepositional object; in this respect it behaves like an inanimate pronoun. This is illustrated in example (241).

(241) a. *Dat was de dag op dat ik   mijn eerste auto kocht.
        that was the day on that I   my first car   bought
   b. *Het moment op dat ik hem voor het eerst zag vergeet ik nooit.
        the moment on that I   him for   the first   saw forget   I   never
   c. *De maand in dat ik jarig   ben valt in de zomer.
        the month in that I having.my.birthday   am fall in the summer

3.3.2.2.6. Conclusion

By way of conclusion, Table 5 presents the relative elements discussed in this section and the circumstances in which they can be used; <f> marks the forms that are part of the formal register.

Table 5: Relative elements in Dutch

TYPE	FORM OF PRONOUN	FEATURES OF ANTECEDENT	SYNT. FUNCTION IN RELATIVE CLAUSE	
			RESTRICTIVE	NON-RESTRICTIVE
Pronoun	*die*	[-NEUTER, SG] or [±NEUTER, PL]	SU, DO, IO, Pred.	SU, DO, IO
	dat	[+NEUTER, SG]	SU, DO, IO, Pred.	SU, DO, IO
	wie	[+HUMAN]	IO, complement of PP	
	wat	[-HUMAN, +NEUTER, SG] AP, VP, CP	SU, DO —	SU, DO, Pred. SU, DO
	welke<f>	[-NEUTER, SG] or [±NEUTER, PL]	SU, DO, IO, complement of PP	
	hetgeen<f>	AP, VP, CP	—	SU, DO, Pred.
Possessive pronoun	*wiens*<f>	[+HUMAN, +MASC, SG]	possessor	
	wier<f>	[+HUMAN, +FEM, SG] or [+HUMAN, PL]		
R-pronoun	*waar* (+P)	no restrictions	complement of PP (extracted)	
Relative adverb	*waar* *waarop* *waarin* *zoals*	[+LOCATIVE] [+TEMPORAL]/[+MANNER] [+TEMPORAL]	location adjunct/complement temporal/manner adjunct time adjunct type adjunct	
Particle	*dat*	[+TEMPORAL]	temporal adjunct	

3.3.2.3. Restrictive and non-restrictive relative clauses

Section 3.3.2.2 has focused on the form and function of the relative elements. This section will mainly be concerned with the distinction between restrictive and non-restrictive constructions: 3.3.2.3.1 will discuss some general differences between these two types of relative clauses, whereas 3.3.2.3.2 and 3.3.2.3.3 will discuss the two subtypes in more detail.

3.3.2.3.1. Differences between restrictive and non-restrictive relative clauses

Section 3.1 has shown that restrictive and non-restrictive relative clauses differ both in function and in form. As far as function is concerned, restrictive relative clauses serve to restrict the referent set of the antecedent, whereas non-restrictive relative clauses simply provide additional information without restricting this referent set. As for form, restrictive relative clauses form an intonation unit with their antecedent, while non-restrictive relative clauses are separated from their antecedent by means of an intonation break, represented in writing by commas preceding and following the relative clause. There are, however, other differences between restrictive and non-restrictive relative clauses, the most important of which are discussed in the following subsections.

I. Type of antecedent

Restrictive relative clauses must have a nominal antecedent, whereas non-restrictive relative clauses can take almost any category as their antecedent. The examples in (242) show that the antecedent can be a finite or infinitival clause or a smaller projection of the verb, and those in (243) show that the same thing holds for predicative APs, PPs and noun phrases. In all cases, the information given in the relative clause is additional information, and does not restrict the set of possible referents of the antecedent.

(242) a.   [$_{CLAUSE}$ Hij ontkende alle betrokkenheid]$_i$, wat$_i$ een juiste reactie was.
             he denied   all involvement   what a right reaction   was
         'He denied all involvement, which was the right reaction.'
    b.   Jan zag [$_{CLAUSE}$ het schip zinken]$_i$, wat$_i$ niet lang duurde.
         Jan saw   the ship sink   what not   long lasted
         'Jan saw the ship sink, which didn't take long.'
    c.   Jan heeft [$_{VP}$ zich teruggetrokken]$_i$, wat$_i$ Piet nooit zal doen.
         Jan has   REFL withdrawn   what Piet never will do
         'Jan has withdrawn, which Piet will never do .'

(243) a.   De jongen was [$_{AP}$ erg bang]$_i$, wat$_i$ ik ook zou   zijn geweest.
             the boy   was   very afraid what I   also would be   been
         'The boy was afraid, which I would also have been.'
    b.   Hij woont [$_{PP}$ achter het station]$_i$, waar$_i$ een nieuwe wijk is gebouwd.
         he   lives   behind the station   where a new quarter   is built
         'He lives behind the station, where a new residential area has been built.'
    c.   Jan is [$_{NP}$ communist] , wat$_i$ ik niet ben.
         Jan is   communist   what I   not am
         'Jan is a communist, which I am not.'

Note that if the antecedent takes the form of an AP, both the AP and the relative pronoun must occur in predicative position. Thus in example (244a), the relative pronoun *wat* is coreferential with the predicative AP *briljant* 'brilliant', whereas in (244b) the relative pronoun cannot take the attributive AP *briljante* as its antecedent, but only the DP *een briljante onderzoeker* 'a brilliant researcher' as a whole.

(244) a. Jan is [$_{AP}$ briljant]$_i$, wat$_i$ ik niet ben.
          Jan is   brilliant, which I not am
          'Jan is brilliant, which I am not.'
      b. We zoeken [$_{DP}$ een [$_{AP}$ briljante]$_j$ onderzoeker]$_i$, wat$_{i/*j}$ Jan niet is.
          we search a   brilliant   researcher,   which Jan not is
          'We are looking for a brilliant researcher, which Jan is not.'

II. Scope of the determiner/quantifier

An important difference between restrictive and non-restrictive relative clauses concerns the °scope of the determiner or the quantifier of the antecedent: whereas the determiner/quantifier has scope over restrictive relative clauses, this does not hold for non-restrictive relative clauses. In the following two subsections, we will discuss the implications of this for the two types of element at hand.

A. The definite article

The use of a definite article conveys that the referent set is "identifiable" in the sense of being given in or recoverable from the context. Since restrictive relative clauses serve to restrict the potential number of referents of the antecedent, this implies that the article has scope over both the antecedent and the relative clause. Non-restrictive relative clauses, on the other hand, provide additional information about the referent of the antecedent and do not serve to identify the referent of the antecedent: if this referent is assumed to be identifiable, it will be so independently of the information contained in the relative clause, and the definite article can therefore be assumed to have scope over only the antecedent. This difference in scope can be represented as in (245). In (245a) the relative clause is placed within the NP-domain, and hence in the scope of the determiner. In (245b), on the other hand, the relative clause is placed outside the NP in order to express that it does not affect the denotation of the noun, and hence has no influence on the size of the referent set of the complete DP; see Section 3.1.2, sub II, for a discussion of some problems concerning the internal structure of DPs containing non-restrictive modifiers.

(245) a. Restrictive relative clause: [$_{DP}$ D [$_{NP}$ [... N ...]$_i$ [$_{RC}$ REL$_i$ ... t_i ...]]]
          [$_{DP}$ de [$_{NP}$ fiets$_i$ [$_{RC}$ die$_i$ Jan t_i kocht]]]
              the   bike   that Jan bought
          'the bike Jan bought'
      b. Non-restrictive relative clause: [$_{DP}$ D [$_{NP}$ ... N ...]$_i$, [$_{RC}$ REL$_i$...t_i...]]
          [$_{DP}$ de [$_{NP}$ fiets]$_i$, [$_{RC}$ die$_i$ Jan t_i kocht]]
              the   bike   which Jan bought
          'the bike, which Jan bought'

In (245a), the choice of the definite determiner depends on the information provided in the relative clause: the definite article can be used, because the referent of the antecedent (*fiets* 'bike') is identifiable on account of the fact that the relative clause restricts the set of bikes to exactly one. In (245b), on the other hand, the choice of the article does not depend on the information given in the relative clause: the

referent of the antecedent is assumed to be identifiable independently of the relative clause.

B. Quantified antecedents

If the antecedent noun is quantified, the scope of the quantifier varies according to the type of relative clause used: if the relative clause is restrictive, the quantifier has scope over both the antecedent noun and the relative clause; if the relative clause is non-restrictive, only the antecedent falls within the scope of the quantifier. This is illustrated in example (246) for the universal quantifier *alle* 'all'. The difference in scope here corresponds to a straightforward difference in meaning: whereas (246b) expresses that all persons present were offered a meal, (246a) implies that only a subset of the persons present (namely, those that came from afar) were offered a meal.

(246) a.   Alle aanwezigen   die van ver   gekomen waren, kregen een maaltijd.
           all persons present who from far come   were   got   a meal
           'All those present who had come from afar were given a meal.'
      b.   Alle aanwezigen, die van ver gekomen waren, kregen een maaltijd.

Not all quantified noun phrases allow modification by both types of relative clause. Modification of a universally quantified noun phrase by a non-restrictive relative clause is only possible when the noun phrase denotes a group, as in (246); when we are dealing with a set of singular entities, as in the case of *ieder(een)* 'every(one)' in (247) or *elk* 'every/each' in (248), the modifying relative clause can only be restrictive.

(247) a.   Iedereen/Iedere gast   die van ver   gekomen was, kreg een maaltijd.
           everyone/every guest who from far come   was got a meal
           'Everyone/Every guest who had come from afar was given a meal.'
      b.   *Iedereen/Iedere gast, die van ver gekomen was, kreg een maaltijd.

(248) a.   Elke leerling   die te laat   kwam, werd gestraft.
           every student who too late came   was punished
           'Every student who came too late was punished.'
      b.   *Elke leerling, die te laat kwam, werd gestraft.

In the case of existential quantifiers like *enkele* 'some', *sommige* 'some' and *de meeste* 'most', on the other hand, the interpretation can be complicated by the fact that the quantifier itself can have two different readings, a purely quantitative reading (some/most N) and a partitive one (some/most of the N). First consider the examples in (249), which involve restrictive relative clauses. As expected, the quantifiers *enkele* 'some' and *de meeste* 'most' have scope over the relative clause: example (249a) contends that there is a set of books that are marked down, and that the speaker bought some of them, and example (249b) that there is a set of clocks that were broken, and that the speaker repaired most of them.

(249) a. Ik heb   enkele [$_{NP}$ boeken$_i$ die$_i$ afgeprijsd   waren gekocht].
          I   have some   books   which marked.down were   bought
          'I have bought some books which were marked down.'
      b. Ik heb   de meeste [$_{NP}$ klokken$_i$ die$_i$ stuk   waren gerepareerd].
          I   have the most   clocks   which broken   were   repaired
          'I have repaired most of the clocks that were broken.'

The interpretation of the corresponding examples with non-restrictive relative clauses varies depending on whether the quantifier has a purely quantitative or a partitive reading.

(250) a. Ik heb enkele [$_{NP}$ boeken]$_i$, die$_i$ afgeprijsd waren, gekocht.
      b. Ik heb de meeste [$_{NP}$ klokken]$_i$, die$_i$ stuk waren, gerepareerd.

On the purely quantificational reading, the information in the non-restrictive relative clause is taken to apply to the complete quantified set: (250a) contends that some books were reduced in price and that the speaker bought these, and (250b) that many clocks were broken and that the speaker repaired these. On the partitive reading, on the other hand, there is a particular set of books or clocks that has been previously introduced into the discourse, and the quantified expression refers to a subset of this set. The relative clause, however, does not take the quantified expression as its antecedent, but the original, non-quantified set. In this case, the relative clause will be given contrastive emphasis and will, in terms of scope relations, be equivalent to the explicit partitive constructions given in (251).

(251) a. Ik heb   enkele van [de boeken]$_i$, die$_i$ afgeprijsd   waren, gekocht.
          I   have some of the books   which marked.down were   bought
      b. Ik heb   de meeste van [de klokken]$_i$, die$_i$ stuk   waren, gerepareerd.
          I   have the most   of the clocks   which broken   were   repaired

   Negative noun phrases behave more or less like the universally quantified noun phrases in (247) and (248) in not allowing non-restrictive relative clauses. Some examples are given in (252).

(252) a. Geen enkele stad die ik ken, is zo mooi als Amsterdam.
          no single city   that I   know is so beautiful as Amsterdam
          'Not one city that I know is as beautiful as Amsterdam.'
      a'. *Geen enkele stad, die ik ken, is zo mooi als Amsterdam.
      b. Ik ken   niemand die   van horrorfilms houdt.
          I   know no.one   who of horror films   likes
          'I know no one who likes horror films.'
      b'. *Ik ken niemand, die van horrorfilms houdt.

In the primeless examples, the negation expressed by *geen* and the *n-* part of the existential quantifier *niemand* have sentential °scope. The interpretation has the general format in (253), where N stands for the property expressed (the set denoted) by the modified NP and V for the property expressed by the VP. The effect of the restrictive relative clauses in the primeless examples in (252) is that the set denoted

by the modified NP is smaller than the set denoted by the unmodified noun, which leads to the paraphrases in (253a&b).

(253)   ¬∃x (Nx & Vx): there is no x, such that x has both the property N and V
   a.   There is no city x which I know and which is as beautiful as Amsterdam.
   b.   There is no person x who I know and who likes horror films.

The paraphrases in (253) show that the primeless examples in (252) do not exclude the existence of cities that are as beautiful as Amsterdam or of people known by the speaker. Given that non-restrictive relative clauses do not affect the referent set of the noun phrase, the primed examples do have these implications, and this is, in fact, the reason why they are unacceptable; since an empty set does not have any members about which one can give additional information, the use of a non-restrictive relative clause leads to a contradiction or at least a semantically incoherent interpretation. Sentence (252a′), for example, is incoherent given that it expresses that the members of the *empty* intersection of the set of cities and the set of entities that are as beautiful as Amsterdam are known to the speaker. Similarly, sentence (252b′) expresses that the members of the *empty* set of people known by the speaker like horror movies.

   Note in passing that non-restrictive relative clauses crucially differ in this respect from appositives, which can modify negative noun phrases. Example (254), for instance, is fully acceptable due to the fact that, although the apposition is added as an afterthought, it is still restrictive in nature; cf. the discussion in Section 3.1.3, sub II.

(254)   Geen enkele stad – die ik ken   althans – is zo mooi als Amsterdam.
          no single city   that I know at.least   is so beautiful as Amsterdam
          'No city, at least no city that I know, is as beautiful as Amsterdam.'

III. Definiteness/Indefiniteness of the antecedent

The examples in (255) show again that both restrictive and non-restrictive relative clauses are possible with definite antecedents, with the difference in meaning discussed in Subsection II: in the non-restrictive, primed examples the (possibly singleton) referent set of the definite antecedent is assumed to be identifiable without the information given in the relative clause; in the restrictive, primeless examples, on the other hand, the relative clause makes the referent set identifiable by restricting the denotation of the NP.

(255) a.   De koekoeksklok die   uit Zwitserland afkomstig was, liep het best.
      a′. De koekoeksklok, die   uit Zwitserland afkomstig was, liep het best.
           the cuckoo clock which from Switzerland came   ran   the best
      b.   De koekoeksklokken die   uit Zw. afkomstig waren, liepen het best.
      b′. De koekoeksklokken, die   uit Zw. afkomstig waren, liepen het best.
           the cuckoo clocks   which from Sw. came   ran   the best

Modification of an indefinite antecedent is more restricted. Whereas restrictive relative clauses can always be used, non-restrictive relative clauses are only fully acceptable with indefinite antecedents when the noun phrase is given a generic

interpretation: when the indefinite antecedent is interpreted specifically, a non-restrictive clause often leads to unacceptability, although there are also cases where the result is fine; non-restrictive clauses are excluded when the antecedent is nonspecific.

A. Generic antecedents

The examples in (256) show that generic antecedents accept both restrictive and non-restrictive relative clauses, although the result is somewhat marked when the generic antecedent is singular, as in (256a′). The restrictive relative clauses in the primeless examples once more function to restrict the whole class of entities referred to by the antecedent noun. The non-restrictive relative clauses in the primed examples are used to provide extra information about the referent of the generic antecedent NP, that is, the entire class of objects denoted.

(256) a. Een koekoeksklok die   uit Zw. afkomstig is, loopt altijd   goed.
      a′. ?Een koekoeksklok, die   uit Zw. afkomstig is, loopt altijd   goed.
          a cuckoo clock   which from Sw. comes   runs always well
      b. Koekoeksklokken die   uit Zw. afkomstig zijn, lopen altijd   goed.
      b′. Koekoeksklokken, die   uit Zw. afkomstig zijn, lopen altijd   goed.
          cuckoo clocks   which from Sw. come   run   always well

B. Specific antecedents

The examples in (257) show that combinations of specific indefinite antecedents and restrictive relative clauses are perfectly acceptable. The restrictive relative clause serves to restrict the specific referent set of the antecedent, but the use of the indefinite article conveys that the noun phrase fails to uniquely identify the referent set for the hearer, that is, the resulting set still consists of more than one potential referent set.

(257)   • Restrictive relative clauses
      a. Een koekoeksklok die   uit Zw. afkomstig was, liep het best.
          a cuckoo clock   which from Sw. came   ran the best
          'A cuckoo clock which came from Switzerland kept the best time.'
      a′. Twee koekoeksklokken die   uit Zw. afkomstig waren, liepen het best.
          two cuckoo clocks   which from Sw. came   ran   the best
      b. Hij had een koekoeksklok die   uit Zw. komt uitgekozen.
          he   had a cuckoo clock   which from Sw. comes prt.-chosen
          'He had chosen a cuckoo clock which comes from Switzerland.'
      b′. Hij had twee koekoeksklokken die   uit Zw. komen uitgekozen.
          he   had two cuckoo clocks   which from Sw. come prt.-chosen

Non-restrictive relative clauses, on the other hand, can less easily be combined with a specific indefinite antecedent. The sentences in (258), for example, are definitely marked, and may even require an appositive reading of the relative clause; cf. Section 3.1.3.

(258) • Non-restrictive relative clauses
 a. ^{??}Een (bepaalde) koekoeksklok, die   uit Zw.   afkomstig was, liep het best.
   a particular cuckoo clock   which from Sw. came   ran the best
   'A (certain) cuckoo clock, which came from Switzerland, kept the best time.'
 b. ^{??}(Bepaalde) koekoeksklokken, die uit Zw.   afkomstig waren,
   particular cuckoo clocks   which from Sw. came
   liepen het best.
   ran   the best

The sentences in (259) are acceptable, but not on the intended reading. Although the antecedent in these constructions has specific reference, the (present-tense) relative clauses provide information about the class as a whole. Thus, the most likely interpretation of these examples is one in which the additional information given in the relative clause applies to all cuckoo clocks, not just to the one(s) we have bought.

(259) • Non-restrictive relative clauses
 a. [#]Hij had een koekoeksklok, die   uit Zw.   afkomstig is, uitgekozen.
   he had a cuckoo clock   which from Sw. comes   prt.-chosen
   'We have chosen a cuckoo clock, which comes from Switzerland.'
 b. [#]Hij had twee koekoeksklokken, die uit Zw.   afkomstig zijn, uitgekozen.
   he had two cuckoo clocks   which from Sw. come   prt.-chosen

That it is not impossible for non-restrictive relative clauses to modify specific indefinite antecedents can be seen from the examples in (260), where the only possible reading is the intended one: the relative clauses provide additional information about the clocks under discussion.

(260) • Non-restrictive relative clauses
 a. Ik had een dure klok,   die   uit Zwitserland   kwam, gekocht.
   I   had an expensive clock which from Switzerland came   bought
   'I had bought an expensive clock which came from Switzerland.'
 b. Ik had twee dure klokken,   die   uit Zwitserland   kwamen, gekocht.
   I   had two expensive clocks which from Switzerland came   bought

C. Nonspecific antecedents

The examples in (261) show that nonspecific antecedents only accept restrictive relative clauses. This is not surprising given the difference in function between restrictive and non-restrictive relative clauses. The speaker can readily use a restrictive relative in order to narrow down the set of possible, nonspecific referents: the primeless examples simply exclude all clocks that do not come from Switzerland. However, given that the identity of the referents in the referent set of the noun phrase is also unknown to him, the speaker is not able to provide more information about these referents in the form of a non-restrictive relative clause. As a result, the primed examples are only acceptable on a specific or generic reading of the noun phrase.

(261) a. Ik wil mijn broer alleen een klok die   uit Zw. afkomstig is   geven.
         I want my brother only   a clock   which from Sw. comes   give
     a′. #Ik wil mijn broer alleen een klok, die uit Zw. afkomstig is, geven.
     b.   Ik wil mijn broer alleen klokken die   uit Zw. afkomstig zijn geven.
         I want my brother only   clocks   which from Sw. come   give
     b′. #Ik wil mijn broer alleen klokken, die uit Zw. afkomstig zijn, geven.

IV. Binding

The difference in semantic function of restrictive and non-restrictive relative clauses may also account for the fact that whereas restrictive clauses always allow °binding into the relative clause, non-restrictive relative clauses only do so under certain circumstances. Example (262a) shows that the reflexive *zichzelf* can be bound by the proper noun *Jan* contained in the restrictive relative clause with the resulting interpretation that the book referred to is the one that Jan wrote about himself. Example (262b), in contrast, shows that this binding relation is blocked with the constituent *Jan* occurring in a non-restrictive relative clause.

(262) a. Het [boek over zichzelf$_i$]$_j$ dat$_j$ Jan$_i$ (onlangs) geschreven heeft, is erg goed.
         the book about himself that Jan recently   written   has is very good
         'The book about himself which Jan (recently) has written, is very good.'
     b. *[Het boek over zichzelf$_i$]$_j$, dat$_j$ Jan$_i$ geschreven heeft, is erg goed.
          the book about himself   that Jan written   has is very good

If we take into consideration the function of the non-restrictive relative clause, we can exclude example (262b) for pragmatic reasons. Since the antecedent in (262b) has independent reference, the identifiability of the referent should not depend on the information given in the relative clause, which should only provide additional information about this antecedent. The fact that the antecedent has independent reference implies that the referent of the anaphor *zichzelf* is known, that is, bound by an implicit argument of the picture noun that refers to the author of the book (cf. 2.2.5.2). Consequently, we must conclude that the identity of the author of the book is also known, which means that the information provided by the non-restrictive relative clause is superfluous. This makes the sentence infelicitous. This line of reasoning predicts that the sentence becomes acceptable if we add information to the non-restrictive relative clause that is not already implied. Example (263) shows that this is indeed the case: sentence (262b) becomes fully acceptable if we add the information that the book was written recently.

(263)   [Het boek over zichzelf$_i$]$_j$, dat$_j$ Jan$_i$ onlangs geschreven heeft, is erg goed.
           the book about himself   that Jan recently written   has is very good

    Something similar holds for the possessive pronoun *zijn* 'his' in example (264): the contrast between (264a) and (264b) shows that the pronoun can be bound by the proper noun *Rembrandt* if the latter is part of a restrictive relative clause, but not if it is part of a non-restrictive relative clause with the sole function of identifying the painter of the portrait. As soon as the relative clause provides other (new, focal) information, as in example (264c), the construction is acceptable.

(264) a. Het [portret van zijn$_i$ zoon]$_j$ dat$_j$ Rembrandt$_i$ schilderde, hangt in zaal 10.
      the portrait of his son   that Rembrandt painted   hangs in room 10
      'The portrait of his son that Rembrandt painted is in room 10.'

   b. *[Het portret van zijn$_i$ zoon]$_j$, dat$_j$ Rembrandt$_i$ schilderde, hangt in zaal 10.
      the portrait of his son   which Rembrandt painted   hangs in room 10

   c. [Het portret van zijn$_i$ zoon]$_j$, dat$_j$ Rembrandt$_i$ schilderde in 1647,
      the portrait of his son   which Rembrandt painted in 1647
      hangt in zaal 10.
      hangs in room 10

V. Negative polarity

The examples in (265) show that °negative polarity items like *ook maar iets* 'anything at all' can occur in a restrictive relative clause that modifies a universally quantified noun phrase, but not in a non-restrictive clause. The difference can be accounted for in terms of scope of the quantifier, when we assume that a negative polarity item can be licensed by a universal quantifier. In example (265a) the quantifier *alle* 'all' has scope over both the antecedent and the restrictive relative clause, and as a result also the expression *ook maar iets* falls within the scope of a quantifier. In (265b), on the other hand, the non-restrictive relative clause falls outside the scope of the quantifier, and as a result the negative polarity item is not licensed; note that the example is grammatical when we replace the negative polarity item by the existential quantifier pronoun *iets*.

(265) a. Alle atleten die ook maar iets   met de zaak   te maken konden
      all athletes who OOK MAAR something with the case to do   could
      hebben, werden geschorst.
      have,   were   suspended
      'All the athletes who could have anything to do with the case were suspended.'

   b. *Alle atleten, die (*ook maar) iets   met de zaak te maken konden
      all athletes   who OOK MAAR something with the case to do   could
      hebben, werden geschorst.
      have   were   suspended

VI. Stacking

Restrictive and non-restrictive relative clauses differ with regard to the possibility of °stacking. Whereas stacking is fully acceptable in the case of restrictive relative clauses, stacking of non-restrictive relative clauses often leads to unacceptable or questionable results. Some examples are given in (266). For a detailed discussion of stacking of relative clauses, see Section 3.3.2.4.

(266) a. De student$_i$ [die$_i$ hier gisteren was] [die$_i$ Engels studeert] is erg aardig.
      the student who here yesterday was who English studies is very nice
      'The student who was here yesterday who studies English, is very nice.'

   b. *?De student$_i$, [die$_i$ hier gisteren was] , [die$_i$ Engels studeert] , is erg aardig.
      the student   who here yesterday was who English studies   is very nice
      'The student, who was here yesterday, who studies English, is very nice.'

3.3.2.3.2. *Restrictive relative clauses*

The examples in (267) show that noun phrases modified by a restrictive relative clause can fulfill a variety of syntactic functions in the clause: subject, (in)direct object, PP-complement, predicate and adverbial phrase.

(267) a. De man [die daar woont] speelt goed piano. [subject]
the man who there lives plays well piano
'The man who lives there plays the piano well.'

b. Jan heeft gisteren   de man [die daar woont] ontmoet. [direct object]
Jan have yesterday the man who there lives met
'Yesterday, Jan met the man who lives there.'

c. Ik heb   de man [die daar woont] een CD gegeven. [indirect object]
I   have the man who there lives   a CD   given
'I have given the man who lives there a CD.'

d. Ik heb   naar de man [die daar woont] geluisterd. [PP-complement of V]
I   have to the man   who lives there listened
'I have listened to the man who lives there.'

e. Jan is de beste pianist [die ik ken] [predicate]
Jan is the best pianist who I   know
'Jan is the best pianist that I know.'

f. Ik heb gisteren   gedanst met de man [die daar woont]. [adv. phrase]
I   have yesterday danced   with the man who there lives
'Yesterday I danced with the man who lives there.'

Noun phrases modified by a restrictive relative clause can furthermore be used as complement or modifier within another noun phrase. This is illustrated in (268).

(268) a. Mijn bewondering voor de man [die daar woont] is groot. [PP-complement]
my admiration   for the man   who there lives   is great
'My admiration for the man who lives there is .'

b. De muziek van de man [die daar woont] is erg mooi. [PP-modifier]
the music   of the man   who there lives   is very beautiful

Section 3.3.2.3.2.1 will show, however, that the function of the relative clause itself is the same in all these cases. This is followed in Section 3.3.2.3.2.2 by a discussion of the position of restrictive relative clauses and their antecedent in the clause.

3.3.2.3.2.1. The function of restrictive relative clauses

Restrictive relative clauses serve to restrict the set of possible referents of their antecedent. Although restrictive relative clauses have this function regardless of the form of the antecedent, it has different implications for relative clauses with definite antecedents and those with indefinite antecedents. In what follows, these two types of relative clauses will therefore be treated separately.

I. Restrictive relative clauses with definite antecedents

What the sentences in (267) and (268) have in common is that the relative clause restricts the set of possible referents of the definite antecedent noun in such a way that the hearer can be assumed to be able to identify its intended referent. From a

communicative point of view the presence of the relative clause is required, since if it were left out, the hearer would not have sufficient information to pick out the intended referent of the DP. The fact that the restrictive relative clause serves to restrict the referent set of the antecedent is also clear from the dialogue in (269): the definite article in the first sentence suggests that the hearer is able to identify the intended referent of the noun phrase *de man*. B's question, however, makes clear that the hearer fails to do so, and B provides additional information in the form of a restrictive relative clause, which restricts the set of male persons to the unique male person who lives next to him/her.

(269) a. De man speelt goed piano.   [speaker A]
           the man plays   well piano
      b. Welke man?   [speaker B]
           which man
      c. De man [die naast mij   woont].   [speaker A]
           the man who next.to me lives
           'The man who lives next to me.'

As a logical result of their restrictive function, restrictive relative clauses cannot felicitously be used to modify antecedents with unique referents. This will be illustrated below for proper nouns and noun phrases with unique referents, antecedents with demonstrative determiners and possessive pronouns, and antecedents in the form of personal pronouns.

A. Proper nouns and noun phrases with unique reference

Restrictive relative clauses are infelicitous with proper nouns and uniquely referring noun phrases as antecedents; since there is no need for additional information to identify the intended referent, restrictive relative clauses are simply superfluous. Actually, using a restrictive relative clause in such situations will only lead to confusion, as it will suggest a referent set with more than one member. Consider in this respect the sentences in (270). Sentence (270a) is acceptable in any context, because in the default case there is only one sun in the domain of discourse (domain D), so that no further identifying information is needed for the hearer to pick out the intended referent. Adding a restrictive relative clause, as in (270b), has the effect of canceling the default value by suggesting that the set of suns in domain D has a cardinality greater that one.

(270) a. De zon gaat elke dag   weer onder.
           the sun goes every day again under
           'The sun sets every day.'
      b. $De zon [die 's morgens   op komt] gaat elke dag   weer onder.
           the sun that in the morning rises   goes every day again under
           'The sun which rises every morning sets every day.'

Something similar holds for proper nouns: (271a) is acceptable in any context, given that in the default case there is one person with the given name in domain D: adding a restrictive relative clause normally leads to unacceptability, as shown by example (271b).

(271) a. Wibi Soerjadi speelt mooi   piano.
           Wibi Soerjadi plays   beautifully piano
           'Wibi Soerjadi plays the piano beautifully.'
     b. *Wibi Soerjadi [die naast mij woont] speelt goed   piano.
           Wibi Soerjadi who next me lives   plays   beautifully piano

The only context in which a proper noun can be followed by a restrictive relative clause is when the proper noun fails to uniquely identify the intended referent within the given context. In that case the referent set denoted by the proper noun is indeed larger than one, which means that the restrictive relative clause has the function of enabling the hearer to select the intended referent. Thus, in the given situation, where both father Jozef and son Isaac are well-known painters, sentence (272a) is perfectly acceptable. Note, however, that in such cases the proper noun no longer functions as a proper noun but as a common noun phrase, as shown by the obligatory use of the definite determiner *de* 'the'. The acceptability of (272b), which also includes a proper noun modified by a restrictive relative clause, can be accounted for in a similar way. See also Sections 1.2.1 and 5.1.2.1 for a more detailed discussion of proper nouns.

(272) a.   De Israëls [die het beroemdst is]   was een impressionist.
          the Israels that the most.famous is was an impressionist
     b.   De Kennedy [die is omgekomen] was een zoon van de voormalige president.
          the Kennedy who is killed   was a son of the former president
          'The Kennedy who was killed was a son of the former president.'

B. Demonstrative pronouns

Example (273b) shows that, in the general case, restrictive relative clauses cannot easily be used in noun phrases that contain a demonstrative determiner. This is due to the fact that the demonstrative suggests that there are other (linguistic or extra-linguistic) means available to uniquely identify the referent in question.

(273) a.   Het concert [waar ik gisteren   naar toe ben geweest] was fantastisch.
           the concert where I   yesterday to   TOE am been   was fantastic
     b. *?Dit concert [waar ik gisteren   naar toe ben geweest] was fantastisch.
           this concert where I   yesterday to   TOE am been   was fantastic

In contrastive contexts like those in (274), demonstratives can co-occur with restrictive relative clauses. This is as might be expected, since in such contexts there are always two or more referents which need to be distinguished: the relative clause functions to set the contrasted referents apart from any other elements, while the demonstrative serves to distinguish the contrasted elements from each other.

(274) a.   DIT concert dat ik van hem heb bijgewoond was beter dan het VORIGE.
          this concert that I of him   have attended   was better than the previous
     b.   DAT schilderij dat hij van haar gemaakt heeft, is mooier dan DIT hier.
          that painting   that he of her   made   has   is nicer   than this here
          'That painting that he has made of her is nicer than this one here.'

In non-contrastive contexts, the distal demonstratives *dat*/*die* 'that/those' can be used in combination with a restrictive relative clause provided that the demonstrative does not have its usual (uniquely) identifying function. In (275a), for instance, the demonstrative *dat* is used to introduce an entity into the discourse (comparable to English *this*), while in (275b) the deictic force of the demonstrative *die* is insufficient to identify the referent in question. In (275c) the stressed demonstrative is used to refer to an as yet unidentifiable, generic referent set. In all these sentences it is possible to replace the demonstrative by the definite article, whereas leaving out the relative clause will yield unacceptable results in the given contexts.

(275) a. Dat concert waar ik het gisteren   over had, was fantastisch.
        that concert where I   it yesterday about had was fantastic
        'This concert I was talking about yesterday was fantastic.'
    b. Die jongen die daar bij het raam   zit, woont naast mij.
        that boy   who there at the window sits lives next.to me
        'That boy who is sitting at the window over there is living next to me.'
    c. Ik bezoek alleen *die* concerten waarvoor studenten korting krijgen.
        I visit   only   those concerts where-for students discount get
        'I go only to those concerts for which students get a discount.'

C. Possessive pronouns and genitive possessors

Noun phrases containing a possessive pronoun or a genitive possessor behave in much the same way as noun phrases containing a demonstrative pronoun. Generally speaking, the use of a possessor suffices to pick out the intended referent, and, as a result, they typically do not co-occur with a restrictive relative clause. This is shown by example (276a). Once again, exceptions must be made for those cases in which the possessor does not uniquely identify the intended referent within the given context. This is typically the case with family names in examples like (276b); cf. also Section 5.2.2.2.1. Moreover, as with the demonstratives in (274), constructions with a possessor can be more or less felicitously restricted by a relative clause in a contrastive context like (276c).

(276) a. *Mijn boek dat ik gisteren   gekocht heb, was duur.
        my book that I   yesterday bought have was expensive
    b. Mijn oom die voor een Amerikaans bedrijf werkt, is vaak in New York.
        my uncle who for an American company   works is often in New York
    c. [?]ZIJN boek dat Gerard Reve gesigneerd heeft is veel ouder dan het MIJNE.
        his book   that Gerard Reve signed   has   is much older than the mine
        'His book which Gerard Reve has signed is much older than mine.'

D. Personal pronouns

A personal pronoun can only be modified by a restrictive relative clause if the pronoun itself does not provide sufficient identifying or restrictive information in the given context; cf. also Section 3.3.2.3.2.2, sub V. Consequently, restrictive relative clauses cannot be used to modify the singular first person pronoun *ik* in (277), whose referent is contextually identified as the speaker.

(277) a. ^{*?}Ik die uit Nederland   kom, ben wel gewend aan een nat klimaat.
       I   who from the.Netherlands come am PRT used   to a wet climate
    b. *Ik die je zo geholpen heeft/heb, verdien toch wel een bedankje.
       I   who you so helped   has/have earn   PRT   PRT a thank.you

Plural first person pronouns can be relativized, but only in generic contexts. Thus, the pronoun *wij* 'we' in example (278a) has generic reference: it denotes the entire class of Dutch people. In example (278b), on the other hand, *wij* refers to a contextually determined set of persons, and in that case the use of a restrictive relative clause is unacceptable. Note that the pronoun in (278a) must be stressed, which is probably due to the fact that the referent of a reduced pronoun is always recoverable from the linguistic context.

(278) a. Wij/*we die uit Nederland   komen, zijn gewend aan veel regen.
      we   who from the.Netherlands come   are used   to a lot of rain
      'We from the Netherlands are used to a lot of rain.'
    b. *Wij die uit Nederland   komen, gaan het toernooi   winnen.
      we who uit Nederland   come   go   the championship win
      'We from the Netherlands will win the championship.'

Second person pronouns can also be relativized only in exceptional cases, that is, when the use of the pronoun alone does not sufficiently narrow down the set of possible referents. In (279a), the pronoun is used to address some person who is standing among other people, and the restrictive relative clause is used to properly identify the intended person as the person who is laughing more loudly than the others. In (279b), on the other hand, the pronoun refers to a uniquely identified hearer, and the addition of a restrictive relative clause is infelicitous. Note that the pronoun in (278a) must again be stressed.

(279) a. Jij/*je die daar zo hard lacht, moet nu   maar eens werken.
      you   who there so loudly laughs should now PRT   PRT   work
      'You who are laughing so loudly better go to work now.'
    b. ^{*?}Jij die me zo geholpen heeft/hebt, hebt wel een bedankje verdiend.
      you who me so helped   has/have   has PRT a thank.you earned

Third person pronouns more freely accept relativization provided that they are non-reduced. For pronouns with (regular) specific reference, this is illustrated in example (280).

(280)   • Third person pronouns with specific reference
    a. dat hij/*ie die daar zo mooi   piano speelt woont naast mij.
      that he   who there so beautifully piano plays lives next.to me
      'He who is playing the piano so beautifully lives next to me.'
    b. Zij/*ze die naast me   woont, heeft me dat verteld.
      she   who next.to me lives   has   me that told
      'She who lives next to me told me that.'
    c. Ik heb hem/*'m die naast me   woont een tijd niet meer gezien.
      I   have him   who next.to me lives a time not more seen
      'I haven't seen him/her who lives next to me for some time.'

In the primeless examples of (281), the same thing is shown for the more special use of pronouns with nonspecific singular reference. Since the pronouns in these examples lack a specific referent and have very little semantic content, the resulting constructions are very similar to so-called semi-free relatives discussed in 3.3.2.2.1, sub IC. Thus, the antecedent personal pronouns in these constructions can be replaced by the element *degene(n)* 'the one(s)', although this will result in the loss of the gender information expressed by the masculine and feminine pronouns in (281).

(281) • Third person pronouns with nonspecific reference
    a.   Wil   hij/*ie die de sleutels heeft deze zo snel mogelijk   terugbrengen.
          wants he   who the keys   has   these so quickly possible return
          'Could he/the person who has the keys return them as quickly as possible?'
    a′. Wil degene die de sleutels heeft deze zo snel mogelijk terugbrengen.
    b.   Zij/*ze die haar sleutels heeft verloren kan deze hier ophalen.
          she   who her keys   has   lost   can these here   collect
          'She/the female person who has lost her keys can collect them here.'
    b′. Degene die haar sleutels heeft verloren kan deze hier ophalen.

In the primeless examples of (282), the same thing is shown for pronouns with nonspecific universal reference. In this case the pronoun with universal reference can be replaced by quantifiers like *iedereen* 'everyone', in which case the universal reference of the antecedent is emphasized; in (282b′) this, of course, requires that the number specification of the verbs is adjusted to the singular feature of the quantifier *iedereen*.

(282) • Third person pronouns with universal reference
    a.   dat hij/*ie die te laat komt, wordt gestraft.
          that he   who too late comes is   punished
          'that any person who is late will be punished.'
    a′. dat iedereen die te laat komt,   wordt gestraft.
          that everyone who too late comes is   punished
    b.   Zij/*ze die zich hebben ingeschreven, krijgen tijdig   bericht.
          they   who REFL have   registered   receive in good time news
          'Those persons who have registered will be informed in good time.'
    b′. Iedereen die zich heeft ingeschreven, krijgt   tijdig   bericht.
          everyone who REFL has registered   receives in good time news

The examples in (283) show that there is no restriction on the syntactic function of the relativized personal pronoun in the matrix clause: in these examples, the antecedent pronoun functions as, respectively, subject, direct object and indirect object. Note that, just like the subject pronoun, the object pronouns must be non-reduced. As will be clear from (283c), the syntactic function of the antecedent pronoun in the main clause need not correspond to that of the relative pronoun in the relative clause: the former functions as the indirect object of the main clause and the latter as the subject of the relative clause. Note that the pronoun antecedent must have the form required by its syntactic function in the matrix clause; using the form required by a pronoun with the syntactic function of the relative pronoun, as in (283c′), leads to severe ungrammaticality.

(283) a. Zij/*ze [RC die daar binnenkomt] is mijn buurvrouw.
　　　　she　　　　who there enters　　　is my neighbor
　　　　'She who is just coming in is my neighbor.'

　　b. Ik ken　hem/*'m [RC die ze ontslagen hebben] niet persoonlijk.
　　　　I　know him　　　　who they fired have　　　not personally
　　　　'I don't know him who they have fired personally.'

　　c. (?)Ze hebben haar/*'r [RC die de hoofdrol　speelt] een Oscar toegekend.
　　　　they have　her　　　who the leading part plays an Oscar　awarded
　　　　'They have awarded her who plays the lead an Oscar.'

　　c′. *Ze hebben zij [RC die de hoofdrol　speelt] een Oscar toegekend.
　　　　they have　she　who the leading part plays an Oscar　awarded

　　　Above we have repeatedly pointed out that modification by a restrictive relative clause is only possible with the strong form of the pronouns. Given that the neuter singular third person pronoun is normally pronounced in its reduced form *'t* 'it', it will not come as a surprise that modification of this pronoun is not possible; as is shown in example (284c), the demonstrative form *dat* 'that' is used instead (with the pronoun *wat* as relative element).

(284) a. *We hebben het/'t dat we zo graag hebben wilden, gisteren　gekocht.
　　　　we have　it　that we so much have　wanted yesterday bought

　　b. We hebben dat wat　we zo graag hebben wilden, gisteren　gekocht.
　　　　we have　that which we so much have　wanted yesterday bought
　　　　'We have bought this/that which we wanted to have so much, yesterday.'

II. Restrictive relative clauses with indefinite antecedents

The examples in (285) show that restrictive relative clauses can also have an indefinite antecedent. Again, the relative clauses have a restricting function, although the use of the indefinite article *een* or the quantifier *enkele* 'some' indicates that in this case they do not serve the purpose of identifying one particular referent for the hearer; the relative clause simply serves to restrict the set of possible referents by providing relevant additional information. In (285), the set of students is restricted to those individuals that attend the speaker's class.

(285) a. Een student die mijn colleges volgt, heeft een boek van me　geleend.
　　　　a student　who my classes follows has　a book　from me borrowed
　　　　'A student who attends my classes borrowed a book from me yesterday.'

　　b. Ik heb　een boek geleend aan enkele studenten　die mijn college volgen.
　　　　I　have a book　lent　to some students　　who my classes follow
　　　　'I have lent a book to some students who attend my classes.'

Indefinite antecedents of restrictive relative clauses can be specific, that is, known to the speaker but not to the hearer, or nonspecific, that is, neither known to the speaker nor the hearer. This is illustrated by (286a) and (286b&c), respectively.

(286) a. Ik ontmoette daar　een paar mensen die　ik　nog van vroeger kende.
　　　　I　met　　　there a few people　who I　yet of before　knew
　　　　'I met some people that I knew from the old days there.'

b. Ik ben op zoek   naar een student die geïnteresseerd is in taalkunde.
    I   am on search to a student   who interested   is in linguistics
    'I am looking for a student who is interested in linguistics.'

c. Ik ben op zoek   naar studenten die geïnteresseerd zijn in taalkunde.
    I   am on search to students   who interested   are in linguistics
    'I am looking for students who are interested in linguistics.'

The primeless examples in (287) show that indefinite antecedents of restrictive relative clauses can also have a generic interpretation. When the semantic content of the head antecedent noun is small or predictable, these constructions are similar in meaning to semi-free relative constructions or constructions with nonspecific third person pronoun antecedents. Examples of both are given in the primed examples in (287).

(287) a. Een student die   bij mij college loopt, moet hard werken.
          a student   who with me class walks must hard work
          'A student who attends my classes has to work hard.'

a′. Degene/Hij die bij mij   college loopt, moet hard werken.
     the.one/he who with me class   walks must hard work

b. Studenten die   bij mij college lopen, moeten hard werken.
    students who   with me class   walk   must   hard work
    'Students who attend my classes have to work hard.'

b′. Degenen/Zij die college bij mij lopen, moeten hard werken.
     those/they who class   with me walk   must hard work

3.3.2.3.2.2. The positions of antecedent and relative clause

Relative clauses always follow their antecedent. Although we will see shortly that they need not be adjacent to it, in most cases the relative clause does immediately follow the antecedent. Some examples are given in (288).

(288) a. [De man [RC die naast mij woont]] speelt goed piano.
          the man   who next.to me lives   plays well piano
          'The man who lives next to me plays the piano well.'

b. Ik heb   gisteren   [de man [RC die naast me   woont]] ontmoet.
    I   have yesterday the man   who next.to me lives   met
    'I met the man who lives next to me yesterday.'

c. Ze   hebben [de actrice [RC die in deze film speelt]] een Oscar toegekend.
    they have   the actress   who in this film plays   an Oscar   awarded
    'They have awarded the actress who stars in this film an Oscar.'

That the relative clause need not immediately follow the antecedent can be seen from example (289), in which the relative clause is extraposed. °Extraposition of the relative clause is quite common, due to the tendency to place salient or heavy information in sentence-final position.

(289)   Ik heb   gisteren   de man ontmoet [RC die naast me   woont].
         I   have yesterday the man met   who next.to me lives

It is normally not possible, however, to split the antecedent and the relative clause by means of leftward movement of the antecedent: the (a)-examples of (290) show that scrambling of the antecedent must pied pipe the relative clause, and the (b)-examples show that the same thing holds for topicalization.

(290) a. Ik heb de man [die naast me woont] gisteren ontmoet.
    a′. *Ik heb de man gisteren [die naast me woont] ontmoet.
    b. De man [die naast me woont] heb ik gisteren ontmoet.
    b′. *De man heb ik gisteren [die naast me woont] ontmoet.

Note that the ban on scrambling and topicalization of the antecedent normally also holds when the relative clause is extraposed. The unacceptability of the examples in (291) may be a special instantiation of the so-called °freezing principle, that is, the more general rule that extraction from a moved phrase is excluded. There may, however, be more to it since we will see in Subsection IV that *wh*-movement of the antecedent is sometimes possible with extraposed relative clauses.

(291) a. *Ik heb de man gisteren ontmoet [die naast me woont].
    b. *De man heb ik gisteren ontmoet [die naast me woont].

In what follows we will consider in more detail the constructions in which the relative clause is extraposed or the antecedent is moved leftward. In all cases, the notion of °focus will play a crucial role: extraposition is only acceptable if the relative clause contains focal information, while topicalization/*wh*-movement is only possible in those cases where the antecedent carries focus. We will end with a discussion of constructions with personal pronoun antecedents, which form an exception to the general observation that it is possible to topicalize both antecedent and relative clause.

I. Extraposition and the syntactic function of the antecedent

Extraposition of the relative clause does not seem to depend on the syntactic function of the full noun phrase, although there are certain factors that may interfere. Below, we will discuss a number of cases.

A. Extraposition from direct and indirect object

First, the examples in (292) show that extraposition from direct object DPs is possible. This, of course, does not imply that extraposition is always possible: Subsection II, for example, will show that extraposition from the direct object requires that the relative clause contains salient/new information and Subsection IV that the antecedent has not been scrambled, that is, belongs to the focus (new information) of the clause.

(292)   • Direct object
    a. Ik heb de film gezien [$_{RC}$ die vorige week zo'n goede recensie kreeg].
        I have the film seen   that last week   such a good review got
        'I have seen the film which got such a good review last week.'
    b. Mijn neef heeft een tekening gekocht [$_{RC}$ die Rembrandt in 1643 maakte].
        my cousin has a drawing   bought   that Rembrandt in 1643 made
        'My cousin has bought a drawing that Rembrandt made in 1643.'

The examples in (293) show that extraposition from a prepositional indirect object is also readily possible.

(293)   • Prepositional indirect object
   a.   Ik heb   hetzelfde advies aan de man gegeven [$_{RC}$ die naast mij woont].
        I   have the.same advice   to the man   given   who next.to me lives
        'I gave the same advice yesterday to the man who lives next to me.'
   b.   Ik wil advies   aan iemand vragen [$_{RC}$ die verstand   heeft van kunst].
        I want advice to someone ask   who knowledge has   of art
        'I want to ask the advice of someone who knows about art.'

This does not hold, however, for the nominal indirect objects in (294): the (a)- and (b)-examples in (294) show that extraposition of the relative is possible but only when the direct object is moved to a position preceding the indirect object. It seems that this fact has to do with the definiteness of the direct object, given that example (294b) much improves if we replace the demonstrative by the indefinite noun phrase *advies* 'advice'; this is shown in (294c).

(294)   • Nominal indirect objects
   a. $^{??}$Ik heb   de man hetzelfde advies gegeven [$_{RC}$ die naast mij   woont].
        I   have the man the.same advice   given   who next.to me lives
        'I gave the same advice yesterday to the man who lives next to me.'
   a′. Hetzelfde advies heb ik de man gegeven [$_{RC}$ die naast mij woont].
   b.   *Ik wil   iemand   dit   vragen [$_{RC}$ die verstand   heeft van kunst].
        I   want someone this ask   who knowledge has   of art
        'I want to ask this of someone who knows about art.'
   b′. Dit wil ik iemand vragen [$_{RC}$ die verstand heeft van kunst].
   c.   Ik wil   iemand   advies vragen [$_{RC}$ die verstand   heeft van kunst].
        I   want someone advice ask   who knowledge has   of art
        'I want to ask the advice of someone who knows about art.'

Example (295) shows that the acceptability of extraposition from a direct object may likewise be influenced by the presence of material to the right of the direct object. The examples in (295) show that it is easier to extract a restrictive relative clause from a direct object in a double object construction when the direct object is preceded by a nominal indirect object than when it is followed by a prepositional indirect object.

(295) a.   Jan heeft Peter het boek [$_{RC}$ dat   zo'n goede recensie had] gegeven.
           Jan has   Peter the book   that such a good review   has   given
           'Jan has given Peter the book that received such a good review.'
   a′.   Jan heeft Peter het boek gegeven [$_{RC}$ dat zo'n goede recensie had].
   b.   Jan heeft het boek [$_{RC}$ dat zo'n goede recensie had] aan Peter gegeven.
          Jan has   the book   that such a good review   had   to Peter given
          'Jan has given the book that received such a good review to Peter.'
   b′. $^{??}$Jan heeft dat boek aan Peter gegeven [$_{RC}$ dat zo'n goede recensie had].

B. Extraposition from prepositional complement

Example (296a) shows that extraposition from PP-complements of a verb is fully acceptable, just like extraposition from prepositional indirect objects in (293). The same seems to hold for extraposition from the PP-complement of a noun or an adjective, although some people may consider examples like these somewhat marked, which may be related to the fact that the primeless examples compete with the primed examples in which the complete PP-complement is extraposed.

(296)   • Prepositional complements
    a.   dat   Jan   op de man   wachtte [$_{RC}$ die hem naar huis zou brengen].
          that Jan   on the man   waited   who him to house would bring
          'that Jan was waiting for the man who would take him home.'
    a′. dat Jan wachtte [$_{PP}$ op de man [$_{RC}$ die hem naar huis zou brengen]].
    b.   ^(?)dat ik   bewondering voor de man heb [$_{RC}$ die dit mogelijk heeft gemaakt].
          that I   admiration   for the man   have   who this possible has made
          'that I have admiration for the man who has made this possible.'
    b′. dat ik bewondering heb voor de man [$_{RC}$ die dit mogelijk heeft gemaakt]].
    c.   ^(?)dat ik   vreselijk boos   op de man   ben [$_{RC}$ die naast mij woont].
          that I   terribly angry   on the man   am   who next.to me lives
          'that I am extremely angry at the man who lives next to me.'
    c′. dat ik vreselijk boos ben [$_{PP}$ op de man [$_{RC}$ die naast mij woont]].

C. Extraposition from subject

The primeless examples in (297) show that extraposition of a relative clause from a subject also yields a fully acceptable result. Extraposition is prohibited, however, when the subject occupies the regular subject position right-adjacent to the complementizer (or finite verb), which is clear from the fact that the corresponding primed examples are degraded under neutral intonation.

(297)   • Subject
    a.   dat   er   een man naast me   woont [$_{RC}$ die prachtig piano speelt].
          that there a man   next.to me lives   who beautifully piano plays
          'that there lives a man next to me who plays the piano beautifully.'
    a′. *dat een man naast me woont [$_{RC}$ die prachtig piano speelt].
    b.   dat   gewoonlijk die mensen   worden gekozen [$_{RC}$ die goed piano spelen].
          that usually   those people are   chosen   who well piano play
          'that only those people are chosen who play the piano well.'
    b′. ^{*?}dat die mensen gewoonlijk worden gekozen die prachtig piano spelen.

The reason for this contrast is probably related to the information structure of the clause. Subsection II will show that extraposition of relative clauses requires the noun phrase to be focal, whereas subjects in the regular subject position are typically the topic of discourse; subjects that are part of the new information of the clause normally occupy some more rightward position in the clause, following °clause adverbs like *gewoonlijk* in (297b). In this sense the contrast concerning the subject in the primeless and primed examples is completely parallel to those between non-scrambled and scrambled objects; cf. Broekhuis 2007/2008: ch.4. In

generative grammar, this parallel is accounted for by assuming that, just like the scrambled position of an object, the regular subject position is a derived position; the base position of the subject is claimed to be lower in the structure as part of the lexical projection of the verb (VP), whereas the regular position is part of the functional structure of the clause (IP).

D. Extraposition from PP-adjunct

Extraposition from a PP-adjunct also seems acceptable, though the result is occasionally marked. Some examples are given in (298), which involve, respectively, a commitative, a spatial, and a temporal adverbial phrase. Note that the markedness of the primeless examples may again have something to do with the fact that they compete with the primed examples in which the complete adverbial PP is extraposed.

(298)　　　• Adverbial phrases
　　　a.　$^{(?)}$Dat heb　ik　met de man　afgesproken [$_{RC}$ die　naast mij　woont].
　　　　　that have　I　with the man agreed　　　　who　next.to me lives
　　　　　'That I have agreed with the man who lives next to me.'
　　　a′.　Dat heb ik afgesproken [$_{PP}$ met de man [$_{RC}$ die naast mij woont]].
　　　b.　$^{?}$Moeder wil　niet dat Jan in het huis　speelt [$_{RC}$　dat gesloopt wordt].
　　　　　mther　want not that Jan in the house plays　　that pulled.down is
　　　　　'Mother doesn't want Jan to play in the house that is being pulled down.'
　　　b′.　$^{?}$Moeder wil niet dat Jan speelt [$_{PP}$ in het huis [$_{RC}$ dat gesloopt wordt]].
　　　c.　$^{?}$Ik wil dat　voor de vergadering bespreken [$_{RC}$ die　straks　plaats　vindt].
　　　　　I want that before the meeting　discuss　　　that later　place　takes
　　　　　'I want to discuss that before the meeting that takes place later.'
　　　c′.　Ik wil dat bespreken [$_{PP}$ voor de vergadering [$_{RC}$ die straks plaats vindt]].

II. Extraposition and information structure

The notion of focus seems to be at the core of the phenomenon of extraposition of relative clauses. Extraposition is possible in those cases where the relative clause contains focal information; cf. Guéron 1980. It may be that the relative clause carries emphatic or contrastive focus, as discussed in Subsection A below, but the information in the relative clause may also simply be new or otherwise salient. Subsection B will show that the preference for extraposition also correlates with the length or weight of the relative clause, which is not surprising given that the information tends to be more salient in lengthy phrases. In Subsection C we will see that extraposition of the relative clause is favored when the entire DP is indefinite, which, again, will not come as a surprise given that indefinite DPs are more likely to contain new or otherwise focal information than definite DPs. Subsection D, finally, will briefly consider the possibility of multiple extraposed relative clauses.

A. Emphatic and contrastive focus

The examples in (299) show that in some cases (for example, when the relative clause is not too long) the relative clause can appear both adjacent to its antecedent and in extraposed position. The difference between the two orders can usually be accounted for in terms of end focus, that is, by appealing to the general tendency of

having the focal elements in sentence-final position: in (299a) the relative clause will be interpreted as containing the new or focal information, and will, as such, be given main emphasis; in (299b), on the other hand, the most neutral reading is one in which both the relative clause and the past participle *ontmoet* 'met' are expressing new information, and both are given main emphasis.

(299) a.   Ik heb daarnet   voor het eerst de man ontmoet [die naast mij woont].
             I   have just now for the first   the man met   who next.to me lives
             'I have met just now the man who lives next to me for the first time.'
      b.   Ik heb daarnet voor het eerst de man [die naast mij woont] ontmoet.

The examples in (300) show that extraposition is strongly preferred when the relative clause carries contrastive focus: the order in (300b) is only acceptable with accent on the past participle, an option that is not available in the contrastive example given.

(300) a.   Ik heb   een boek gekocht [dat   over *WO II*   gaat] (niet over *WO I*).
             I   have a book   bought which about WW II goes not about WW I
             'I have bought a book which deals with *WW II* (not about *WW I*).'
      b.   ^{??}Ik heb een boek [dat over *WO II* gaat] gekocht (niet over *WO I*).

B. Weight of the relative clause

The preference for extraposition correlates with the length of the relative clause: the longer the relative clause, the larger the preference for its placement in sentence-final position. Thus, the order in (301a), with the lengthy relative clause extraposed, feels more natural than the order in (301b), with the relative clause adjacent to the antecedent.

(301) a.   Ik heb daarnet   voor het eerst   de man ontmoet
             I   have just now for the first time the man met
             [die een maand geleden naast mij   is komen wonen].
             who a month ago   next.to me is come live
             'I just met for the first time the man who came to live next door a month ago.'
      b.   [?]Ik heb daarnet voor het eerst de man [die een maand geleden naast mij is
           komen wonen] ontmoet.

Once again, end focus is at work here: the longer the relative clause, the more likely it is that it will contain new or otherwise salient information. This also means that length in itself is not always enough to make extraposition of the relative clause possible. Thus, there may be other weighty or salient information present in the sentence with which the relative clause has to compete for the sentence-final position. An example is given in (302), where extraposition of the relative clause is barred by a relatively weighty VP *uitnodigen voor een kopje koffie*.

(302) a. Ik heb de man [die een maand geleden naast mij is komen wonen]
          I have the man who a month   next.to me is come live
          uitgenodigd voor een kopje koffie.
          invited   for a cup of coffee
          'I have invited over for a cup of coffee the man who came to live next door a
          month ago.'
    b. *?Ik heb de man uitgenodigd voor een kopje koffie [die een maand geleden
          naast mij is komen wonen].

C. Definiteness

The question of whether or not there is a preference for extraposition of the relative clause also depends on the definiteness of the antecedent: the (a)-examples in (303) show that with definite antecedents both orders are acceptable, whereas the (b)-examples show that with indefinite antecedent extraposition is clearly preferred. If the antecedent is an existential quantifier like *iemand* 'someone', as in the (c)-examples, the contrast seems even clearer. These observations are, of course, in accordance with the assumption that extraposition requires the presence of focus, as indefinite DPs are more likely to contain focal/new information than definite ones.

(303) a. Ik heb gisteren de man [RC die prachtig piano speelt] ontmoet.
          I have yesterday the man   who beautifully piano plays met
          'Yesterday I met the man who plays the piano beautifully.'
    a′. Ik heb gisteren de man ontmoet die prachtig piano speelt.
    b. ?Ik heb gisteren een man [RC die prachtig piano speelt] ontmoet.
          I have yesterday a man   who beautifully piano plays   met
          'Yesterday I met a man who plays the piano beautifully.'
    b′. Ik heb gisteren een man ontmoet die prachtig piano speelt.
    c. ??Ik heb gisteren iemand [RC die prachtig piano speelt] ontmoet.
          I have yesterday someone   who beautifully piano plays   met
          'Yesterday I met someone who plays the piano beautifully.'
    c′. Ik heb gisteren iemand ontmoet die prachtig piano speelt.

A similar contrast can be found for subjects in °expletive constructions: since the subject receives a nonspecific indefinite interpretation in these constructions, we expect extraposition to be the preferred option. That this expectation is indeed borne out is illustrated in (304) by means of, respectively, an intransitive and an unaccusative construction.

(304) a. ??dat er zes mensen [RC die in vaste dienst   zijn] werken.
          that there six people   who in permanent employment are   work
          'Six people who hold a permanent position are working there.'
    a′. dat er zes mensen werken die in vaste dienst zijn.
    b. ?Er zijn zes mensen [RC die in vaste dienst   waren] ontslagen.
          there are six people   who in permanent employment were   fired
    b′. Er zijn zes mensen ontslagen die in vaste dienst waren.

D. Multiple extraposed relative clauses

Differences in acceptability of extraposition of relative clauses also occur in those cases where two restrictive relative clauses are extraposed, one extracted from a direct object, and one from a subject. The result of such extraposition is clearly unacceptable in those cases where the relative clause extracted from the subject precedes the one extracted from the direct object, as in (305b′). Where the relative clause extracted from the subject follows that extracted from the direct object, as in (305b), the result is slightly better, but still highly questionable; cf. Rochemont & Culicover (1997: 280) for similar English data.

(305) a. dat een student [RC1 die interesse heeft in taalkunde]
        that a student   who interest has   in linguistics
        een artikel [RC2 dat ik had uitgedeeld] gelezen heeft
        an article   that I   had handed.out read   has
        'that a student who is interested in linguistics read the article I had handed out.'
    b. ??dat een student een artikel gelezen heeft [RC2 dat ik had uitgedeeld] [RC1 die interesse heeft in taalkunde].
    b′. *dat een student een artikel heeft gelezen [RC1 die interesse in taalkunde heeft] [RC2 dat ik had uitgedeeld].

The contrast becomes clearer in (306) when the subject is given extra emphasis. Two cases can be distinguished. example (306a) involves contrastive focus, and has the implication that there are other students who have read the article but that they are not interested in linguistics. Example (306b) involves restrictive focus, and implies that there is only one student interested in linguistics and that only that one student has read the article. The order of the relative clauses in the primeless examples seems to give rise to a fully grammatical result (although the sentences may remain hard to process), whereas the order of the relative clauses in the primed examples is completely excluded.

(306) a. dat slechts *één* student het artikel heeft gelezen [RC2 dat ik uitgedeeld had]
        that only *one* student   the article has read   that I handed.out had
        [RC1 die interesse heeft in *taalkunde*].
            who interest has   in *linguistics*
        'that (only) *one* student has read the article I had handed out who is interested in *linguistics*.'
    a′. *dat (slechts) *één* student het artikel heeft gelezen [RC1 die interesse in taalkunde heeft] [RC2 dat ik uitgedeeld had].
    b. dat alleen *die* student het artikel gelezen heeft [RC2 dat ik had uitgedeeld]
        that only *that* student   the article read   has   that I had handed.out
        [RC1 die interesse heeft in *taalkunde*].
            who interest has   in *linguistics*
        'that only *that* student has read the article I had handed out who is interested in *linguistics*.'
    b′. *dat (alleen) *die* student het artikel heeft gelezen [RC1 die interesse in taalkunde heeft] [RC2 dat ik uitgedeeld had].

III. *Leftward movement of the antecedent*

Subsection II has shown that the restrictive relative clause and its antecedent can be split by extraposition of the relative clause. In principle, this split pattern could also arise as the result of leftward movement of the antecedent by means of, for example, scrambling or topicalization with stranding of the relative clause in the original position of the noun phrase. The examples in (307) and (308) show, however, that this is not an option: (307) shows that scrambling of the direct object is possible but requires pied piping of the restrictive relative clause and (308) show the same for topicalization.

(307) • Scrambling
    a.   Hij heeft de man [RC die naast me woont] gisteren ontmoet.
         he has the man who next.to me lives yesterday met
         'He met the man who lives next to me yesterday.'
    b. *Hij heeft de man gisteren [RC die naast me woont] ontmoet.

(308) • Topicalization
    a.   De man [RC die naast me woont] heeft hij gisteren ontmoet.
         the man who next.to me lives has he yesterday met
         'The man who lives next to me, he met yesterday.'
    b. *De man heeft hij gisteren [RC die naast me woont] ontmoet.

Although in the case of *wh*-movement, pied piping never leads to a fully acceptable result (see also the discussion of examples (313) and (314) in Subsection IV), the examples in (309) still clearly show that pied piping is strongly preferred to stranding of the relative clause.

(309) • *Wh*-movement
    a.   ??Welke man [RC die naast me woont] heeft hij gisteren ontmoet?
         which man who next.to me lives has he yesterday met
         'Which of the men who live next to me did he meet yesterday?'
    b. *Welke man heeft hij gisteren [RC die naast me woont] ontmoet?

The data above, which can be readily replicated for noun phrases with a syntactic function other than direct object, clearly show that stranding of the relative clause by leftward movement of the antecedent is excluded.

IV. *Extraposition and leftward movement of the antecedent*

Subsection I has shown that extraposition of restrictive relative clauses is possible from all types of syntactic constituents, and Subsection III has shown that it is not possible to strand the relative clause by leftward movement: the relative clause is normally pied piped. This still leaves open the possibility that the noun phrase is split by simultaneously extraposing the relative clause and leftward movement of the antecedent. This section will show that the acceptability of the resulting structure depends on the type of leftward movement involved: it is excluded in the case of scrambling, sometimes marginally possible with topicalization, and pretty common with *wh*-movement. The fact that the pattern is possible in the case of *wh*-movement suggests that an account in terms of the °freezing principle (the more

general restriction that extraction from a moved phrase is excluded), is not in order. It therefore seems that we have to appeal to the information structural effect of the leftward movement.

A. Scrambling and Topicalization

The examples in (310) show that extraposition of a restrictive relative clause from a direct object is possible, provided that the antecedent of the relative clause has not been scrambled or topicalized.

(310) a. Ik heb nog nooit de man ontmoet [$_{RC}$ die naast me   woont].
          I   have still never the man met   who next.to me lives
          'So far, I have never met the man who lives next to me.'
       b. *Ik heb de man$_i$ nog nooit t$_i$ ontmoet [$_{RC}$ die naast me woont].
       c. *De man$_i$ heb ik nog nooit t$_i$ ontmoet [$_{RC}$ die naast me woont].

Often, this is described in terms of freezing: a phrase that has been moved (the scrambled/topicalized noun phrase) is an °island for extraction (extraposition of the relative clause). Appealing to the freezing principle is problematic, however, given that we will see in the next subsection that *wh*-movement of the antecedent *is* possible when the relative clause is extraposed. For this reason it seems better to appeal to the information structural effects of scrambling and topicalization. Since the type of scrambling we are discussing here is only possible with noun phrases that are part of the presupposition ('old' information) of the clause, we can exclude extraposition in (310b) by appealing to our earlier conclusion in Subsection II that the noun phrase must be sufficiently focal in order to license extraposition. Given the fact that topicalization generally involves discourse topics we can provide a similar account for the impossibility of (310c).

It must be noted, however, that scambled and topicalized phrases can sometimes be contrastively focused; although judgments on the precise status may differ among speakers, on this reading examples like (310b&c) become more acceptable. The relative acceptability of the examples in (311) provides direct support for the claim that an account in terms of the information structural properties of the movements involved is superior to an account in terms of freezing.

(311) a. [%]Ik heb de MAN nog nooit ontmoet [$_{RC}$ die naast me   woont]; de VROUW wel.
          I have the man stil never met   who next.to me lives   the woman AFF
       b. [%]De MAN heb ik nog nooit ontmoet [$_{RC}$ die naast mij woont]; de VROUW wel.
          the man have I yet never   met   who next.to me lives; the woman AFF
          'I haven't met the MAN yet who lives next to me, but I HAVE met the WOMAN.'

B. Wh-movement

That an account in terms of freezing is not adequate is also clear from the fact that it is readily possible to simultaneously have *wh*-movement of the antecedent and extraposition of the relative clause. The discontinuous construction in (312a), for instance, is clearly preferred to the one in (312b), in which *wh*-movement applies to the DP as a whole. The data in (312) are consistent with the information structural account given that *wh*-phrases are focal by definition.

(312) a. Hoeveel mensen heb jij   ontmoet [_{RC} die echt   goed piano spelen]?
      how.many people have you met   who really   well   piano play
      'How many people have you met who play the piano really well?'
    b. *?Hoeveel mensen [_{RC} die echt goed piano spelen] heb jij ontmoet?

However, not all questioned constructions allow extraposition of the relative clause. In order to allow this the *wh*-phrase may not be °D-linked, that is, it may not presuppose that the set of questioned entities is non-empty in domain D. This requirement is indeed met in (312); this question does not presuppose that there are persons in domain D that play the piano well. A minimal contrast arises when we replace the *wh*-phrase in these examples by the partitive phrase *hoeveel van de mensen [*_{RC} *die echt goed piano spelen]* 'how many of the people that play the piano well'.

(313) a. ??Hoeveel van de mensen heb   jij   ontmoet [_{RC} die echt goed piano spelen]?
      how.many of the people have   you met   who really well piano play
      'How many people have you met who play the piano really well?'
    b. Hoeveel van de mensen [_{RC} die echt goed piano spelen] heb jij ontmoet?

The examples in (313) presuppose that domain D contains a non-empty set of people that play the piano well, and as a result the split pattern is worse than the unsplit one. *Wh*-phrases headed by the interrogative determiner *welke* are also D-linked, and again the result of splitting the noun phrase is a degraded result.

(314) a. Welke mensen [_{RC} die in het orkest   spelen] heb jij   ontmoet?
      which people   who in the orchestra play   have you met
    b. ??Welke mensen heb jij ontmoet [_{RC} die in het orkest spelen]?

The fact that *wh*-movement of a D-linked antecedent is not allowed is again in line with the general assumption that preposed antecedents must be focal: although *wh*-phrases are focal by definition, the D-linked ones presuppose knowledge of a particular set related to domain D and are as such less focal than their non-presupposed counterparts. Extraposition is also less acceptable in example (315), which is again due to the fact that in this case the *wh*-phrase is D-linked (which is clear from the use of the definite noun phrase *het orkest* 'the orchestra'). Note that (315b) becomes acceptable when the antecedent carries emphatic or contrastive focus, but in that case the construction is likely to be used as an echo-question

(315) a. Hoeveel mensen [_{RC} die in het orkest spelen]   hebben je uitgenodigd?
      how.many   who in the orchestra play have   you invited
      'How many people who play in the orchestra have invited you?'
    b. *?Hoeveel mensen hebben je uitgenodigd [_{RC} die in het orkest spelen]?
    c. HOEVEEL mensen hebben jou   uitgenodigd [_{RC} die in het orkest spelen]?

Example (312b) shows that the split pattern is preferred when the interrogative noun phrase has the syntactic function of object. The same thing holds for the subject of an °expletive construction, although in this case the contrast between the split and the unsplit pattern is less pronounced. This is illustrated in (316a&b) for, respectively, intransitive and unaccusative constructions.

(316) a. [?]Hoeveel mensen [_{RC} die in vaste dienst   zijn] werken er?
        how.many people   who in permanent employment are   work   there
        'How many people are working there who hold permanent jobs?'

    a′. Hoeveel mensen werken er die in vaste dienst zijn?

    b.   Hoeveel mensen [_{RC} die in vaste dienst   waren] zijn er ontslagen?
        how.many people   who in permanent employment were are there fired
        'How many people have been fired who held permanent jobs?'

    b′. Hoeveel mensen zijn er vertrokken die in vaste dienst waren?

C. Conclusion

This subsection has shown that leftward movement of the antecedent is possible when the relative clause is extraposed, but that this option is restricted by the information structural condition that the complex noun phrase is sufficiently focal; cf. Subsection II. The fact that *wh*-movement is possible when the restrictive relative clause is extraposed unambiguously shows that an analysis in terms of freezing cannot be upheld. This is in line with more recent approaches to extraposition that reject the claim implied by the freezing account that scrambling and topicalization intrinsically precede extraposition. Such proposals reanalyze extraposition as stranding: the object is claimed to be base-generated in postverbal position, and what seems to be extraposition of the relative clause is actually stranding of the relative clause in the base-position of the object; cf. Kayne (1994). Note that such an analysis would still allow us to appeal to the freezing principle in order to account for the ungrammaticality of leftward movement with stranding of the relative clause in *preverbal* position (cf. the discussion in Subsection III), since in that case the relative clause would be stranded in the *derived* preverbal position of the object. Another strand of research that is compatable with the findings in this section assumes that the postverbal phrase has never been part of the preverbal phrase but is generated as an independent phrase; see Koster (2000), De Vries (2002:ch.7/2011) and references cited there for interesting proposals of this sort.

V. A special case: personal pronoun antecedents

Although Subsection IV has shown that in the general case topicalization of the antecedent pied pipes the restrictive relative clause, this subsection will show that this does not always hold when the antecedent is a personal pronoun. First, recall that Section 3.3.2.3.2.1, sub I, has shown that the syntactic function of the modified personal pronoun and that of the relative pronoun need not be the same. Examples like (317), in which the personal pronoun functions as the object of the matrix clause and the relative pronoun as the subject of the relative clause, are acceptable as long as the object form of the personal pronoun is used.

(317) a. Ik heb hem/*hij [_{RC} die daar binnenkomt] niet eerder gezien.
        I   have him/he   who there prt.-enters   not before seen
        'I have never seen him who has just come in before.'

    b.   Ze hebben haar/*zij [_{RC} die de hoofdrol   speelde] een Oscar toegekend.
        they have her/she   who the leading part played an Oscar   prt.-awarded
        'They have awarded her who played the leading part an Oscar.'

Topicalization of the complete direct object is strongly preferred in those cases where antecedent and relative pronoun have the same syntactic function. Thus the constructions in (318a&b), where the antecedent *hem* 'him' and the relative pronoun *die* both function as direct objects, are fully acceptable; the same thing is true of example (318c), where the antecedent pronoun and the relative pronoun both function as indirect objects. The split patterns in the primed examples are marked compared to the unsplit one (but of course acceptable under a non-restrictive reading, in which case the relative clause is preceded by an intonation break).

(318) a.   Hem [$_{RC}$ die ze ontslagen hebben], ken ik niet persoonlijk.
          him   who they fired have   know I   not personally
          'Him they have fired I don't know personally.'

     a′. *?Hem ken ik niet persoonlijk [$_{RC}$ die ze ontslagen hebben].

     b.   Hem [$_{RC}$ die Marie aan me voorstelde], had ik nooit eerder gezien.
          him   who Marie to me   introduced had I   never before seen
          'Him who Marie has introduced to me I had never seen before.'

     b′. *?Hem had ik nooit eerder gezien [$_{RC}$ die Marie aan me voorstelde].

     c.   Haar [$_{RC}$ die een Oscar heeft gekregen], heeft hij een nieuwe rol aangeboden.
          her   who an Oscar has won   has he a new part   prt.-offered
          'Her who they have awarded an Oscar they have offered a new part.'

     c′. *?Haar heeft hij een nieuwe rol aangeboden [$_{RC}$ die een Oscar heeft gekregen].

If, however, the antecedent pronoun fulfills the function of object and the relative pronoun the function of subject, topicalization of the full noun phrase gives rise to a highly marked result, regardless of the form of the personal pronoun; note, however, that the subject form of the personal pronoun seems to give rise to a better result in these examples than in (317). As can be seen in the primed examples, the split pattern gives rise to a considerably better result in these cases than the unsplit one, provided that the antecedent has the form of an object pronoun: use of the subject form *hij/zij* is completely excluded.

(319) a.   *?Hem/Hij [$_{RC}$ die daar binnenkomt] heb ik niet eerder gezien.
          him/he   who there prt.-enters   have I   not before seen

     a′. (?)Hem heb ik niet eerder gezien [$_{RC}$ die daar binnenkomt].

     b.   ??Hem/Hij [$_{RC}$ die hier al tien jaar   werkt] willen we niet ontslaan.
          him/he   who here already ten years works want   we not fire
          'Him we don't want to fire who's worked here for ten years.'

     b′. ?Hem willen we niet ontslaan [$_{RC}$ die hier al tien jaar werkt].

     c.   ??Haar/Zij [$_{RC}$ die de hoofdrol speelde]   hebben ze   een Oscar toegekend.
          her/she   who the leading role played have   they an Oscar   awarded

     c′. ?Haar hebben ze een Oscar toegekend [$_{RC}$ die de hoofdrol speelde].

In other cases in which the personal and relative pronoun fulfill different syntactic functions, topicalization of the full noun phrase is fully acceptable. In (320a), for example, the personal and the relative pronoun have the syntactic function of direct and indirect object, respectively, and the result seems fine. In (320), the situation is reversed, and again the result is acceptable. In contrast, the split patterns are degraded.

(320) a. Hem [RC die ze bijna niet kennen] hebben ze een uitnodiging gestuurd.
      him   who they almost not know, have they an invitation sent
      'Him who they hardly know at all they have sent an invitation.'

   a′. *?Hem hebben ze een uitnodiging gestuurd [RC die ze bijna niet kennen].

   b. Haar [RC die ze een Oscar hebben toegekend] bewonder ik erg.
      her   who they an Oscar have awarded   admire   I   much
      'Her who they have awarded an Oscar, I admire a lot.'

   b′. *?Haar bewonder ik erg [RC die ze een Oscar hebben toegekend].

3.3.2.3.3. *Non-restrictive relative clauses*

The examples in (321) show that the antecedent of a non-restrictive relative clause
can fulfill a variety of syntactic functions in the clause: subject, (in)direct object,
PP-complement and adverbial phrase.

(321) a. Mijn broer, [RC die goed piano speelt], heeft een prijs gewonnen.
      my brother   who well piano plays has   a prize   won
      'My brother, who plays the piano well, has won a prize.'

   b. Zij feliciteerde   mijn broer, [RC die goed piano speelt],   met zijn prijs.
      she congratulated my brother   who plays the piano well with his prize

   c. Ze hebben mijn broer, [RC die goed piano speelt], de prijs   toegekend.
      they have   my brother   who well piano plays the prize prt.-awarded
      'They have awarded my brother, who plays the piano well, the prize.'

   d. Ik heb naar mijn broer geluisterd, [RC die goed piano speelt].
      I have to my brother   listened   who well piano plays

   e. Ik ga naar een concert met mijn broer, [RC die goed piano speelt].
      I go to a concert been with my brother   who well piano plays

Noun phrases modified by a non-restrictive relative clause can furthermore be used
as complement or modifier within another noun phrase. This is illustrated in (322).

(322) a. Mijn bewondering voor mijn broer, [RC die goed piano speelt] is groot.
      my admiration   for my brother   who well piano plays   is great

   b. De muziek van mijn broer, [RC die goed piano speelt], is erg mooi.
      the music of my brother   who well piano plays   is very beautiful

The only thing that is not readily possible is modification of a predicatively used
noun phrase. This is not surprising, of course, given that non-restrictive relative
clauses serve to provide more information about the referent set of the noun phrase.
Since predicates do not refer, it follows immediately from this that a predicatively
used noun phrase cannot be modified by a non-restrictive relative clause. This is
illustrated in (323); a non-restrictive clause can only be used to provide additional
information about the intended pianist if it is added to the subject of the
construction, as in (323a); adding the relative clause to the nominal predicate, as in
(323b), gives rise to an uninterpretable result. It must be noted, however, that this
restriction does not hold when the relative clause is introduced by the predicative
relative pronoun *wat*, which can take several types of predicates as its antecedent;
cf. 3.3.2.2.1, sub IIIE.

(323) a. Jan$_i$, [$_{RC}$ die$_i$ hier vaak speelt], is [$_{Pred}$ de beste pianist van Nederland].
      Jan   who here often plays   is   the best pianist of the.Netherlands
      'Jan, who often plays here, is the best pianist of the Netherlands.'
    a′. *Jan is [$_{Pred}$ de beste pianist van Nederland]$_i$, [$_{RC}$ die$_i$ hier vaak speelt].
       Jan is   the best pianist of the.Netherlands   who here often plays
    b. Jan is een goede pianist/briljant [$_{RC}$ wat   ik niet ben].
      Jan is a good pianist/brilliant   which I not am

This issue will be discussed more extensively in Section 3.3.2.3.3.1, which will discuss the meaning contribution of non-restrictive relative clauses. This is followed in Section 3.3.2.3.3.2 and 3.3.2.3.3.3 by discussions of the different types of non-restrictive relative clause, and the position of non-restrictive relative clauses and their antecedent in the clause.

3.3.2.3.3.1. The function of non-restrictive relative clauses

A non-restrictive relative clause serves to provide additional information about its antecedent, which means that the information provided in the relative clause is not required for the proper identification of the referent set of the antecedent; if the relative clauses in (321) and (322) above are left out, the result is less informative but grammatical and felicitous as the hearer can still be assumed to be able to identify the person the speaker is referring to (but see Section 3.3.2.3.3.2). Although non-restrictive relative clauses have this function of providing additional information regardless of the form of their antecedent, it has different implications for relative clauses with definite antecedents and those with indefinite antecedents. In what follows, these two types of relative clauses will therefore be treated in separate subsections. A third subsection is added that discusses non-restrictive clauses that take an antecedent with a predicative function in the clause.

I. Non-restrictive relative clauses with definite antecedents

As a logical result of their non-restrictive function, non-restrictive relative clauses can easily be used in combination with antecedents with unique referents. Since these referents can be assumed to be identifiable, the relative clauses need not, and typically cannot, contain identifying information. This is illustrated in (324) for an antecedent in the form of a proper noun, a noun with unique reference, and antecedents containing a demonstrative and possessive determiner.

(324) a. Rembrandt, [$_{RC}$ die leefde van 1606 tot 1669], is een groot schilder.
      Rembrandt   who lived from 1606 to 1669 is a great painter
      'Rembrandt, who lived from 1606 to 1669, is a great painter.'
    b. De zon, [$_{RC}$ die hoog aan de hemel stond], gaf   veel warmte.
      the sun   which high in the sky stood   gave much warmth
      'The sun, which was high in the sky, gave a lot of heat.'
    c. Ik heb dit schilderij, [$_{RC}$ dat   erg duur   was], op een veiling gekocht.
      I have this painting   which very expensive was   at an auction bought
      'I bought this painting, which was very expensive, at an auction.'

    d.   Mijn echtgenoot, [$_{RC}$ die tolk   is], spreekt zes talen.
         my husband,   who interpreter is, speaks six languages
         'My husband, who is an interpreter, speaks six languages.'

Non-restrictive relative clauses can also be used to modify personal pronouns, provided that they have the full, non-reduced form. When the antecedent and the relative pronoun have the same syntactic function in the matrix and the relative clause, such constructions are perfectly acceptable. This is illustrated in (325) for cases in which both the antecedent and the relative pronoun function as subjects; observe that the finite verb of the relative clause agrees in number with the antecedent pronoun.

(325) a.   Hij, [$_{RC}$ die daar zo mooi   piano speelt$_{3p.sg}$], is mijn broer.
         he   who there so beautifully piano plays   is my brother
         'He, who is playing the piano so beautifully, is my brother.'
    b.   Ik, [$_{RC}$ die altijd   voor je heb$_{1p.sg}$ klaar gestaan], heb dit niet verdiend.
         I   who always for you have   ready stood   have this not deserved
         'I, who was always ready to help you, haven't deserved this.'
    c.   Zelfs jij, [$_{RC}$ die zoveel   hebt$_{2p.sg}$ meegemaakt], hebt dit nooit gezien.
         even you   who so much has   experienced   has this never seen
         'Even you, who has seen so much, has never seen such a thing.'
    d.   Jullie, [$_{RC}$ die al   een geldig kaartje hebben$_{pl}$], mogen nu binnen.
         you   who already a valid ticket   have   may now inside
         'You, who already have a valid ticket, may enter immediately.'

In (326) the same thing is shown for object pronouns: the pronouns *haar* 'her' and *ons* 'us' function as direct objects in the matrix clauses, with the relative pronoun *die* fulfilling the same function in the relative clauses, and the result is fully acceptable.

(326) a.   Ik had haar, [$_{RC}$ die ik altijd   gemogen heb], graag geholpen.
         I had her   who I always liked   have gladly helped
         'I would gladly have helped her, whom I have always liked.'
    b.   Hij had ons, [$_{RC}$ die hij nog nooit gezien had], direct   herkend.
         he had us   who he yet never seen had directly recognized
         'He had immediately recognized us, whom he had never seen before.'

When the antecedent and the relative pronoun do not have the same syntactic function, the results are generally marked. The examples in (327) show this for cases in which the personal pronoun functions as a direct/indirect object of the matrix clause or the complement of a preposition, whereas the relative pronoun is the subject of the relative clause. In (327a&b), some speakers allow and even prefer the third singular form *heeft* to the first singular form *heb*.

(327) a.   Hij heeft mij, [$_{RC}$ die hem toch zo geholpen $^?$heb$_{1p.sg}$/$^{%}$heeft$_{3p.sg}$],
         he has   me   who him PRT so helped   have/has
         nooit bedankt.
         never thanked
         'He has never thanked me, who helped him so much.'

b. Hij heeft mij, [$_{RC}$ die er   speciaal   om gevraagd $^?$heb$_{1p.sg}$/$^{\%}$heeft$_{3p.sg}$],
    he   has   me   who there especially for   asked   have/has
    een gesigneerd exemplaar gegeven.
    a signed copy   given
    'He has given me, who especially asked for it, a signed copy.'

c. $^?$Hij heeft voor ons, [$_{RC}$ die zo hard gewerkt hebben], niets   teruggedaan.
    he has   for us   who so hard worked have   nothing prt.-done
    'He has done nothing in return for us, who worked so hard.'

The examples in (328) show the same for cases in which the personal pronoun acts as the subject of the matrix clause and the relative pronoun as the direct or indirect object of the relative clause.

(328) a. $^?$Ik vind dat ik, [$_{RC}$ die ze ontslagen hebben], recht heb   op een verklaring.
         I   find   that I   who they fired have   right have to an explanation
         'I think that I, who they have fired, have the right to an explanation.'

b. $^?$Ik vind dat ik, [$_{RC}$ die hij dat boek gestuurd heeft],
    I   find   that I   who he that book sent   has
    hem moet bedanken.
    him must thank
    'I think that I, who he has sent the book to, must thank him.'

The marked examples in (327) and (328) all involve cases in which the personal pronoun functions as a subject and the relative pronoun as an object, or vice versa. When they function respectively as a direct and an indirect object, the constructions are fully acceptable. Examples can be found in (329).

(329) a. Ze hadden ons$_{IO}$, [$_{RC}$ die$_{DO}$ ze   ontslagen hebben], een brief gestuurd.
         they had   us   who they fired   have   a letter   sent
         'They had sent us, who they fired, a letter.'

b. Hij zal jou$_{DO}$, [$_{RC}$ (aan) wie$_{IO}$ hij veel te danken heeft], graag helpen.
    he   has you   to whom   he much to thank has   gladly help
    'He would be glad to help you, (to) who(m) he owes a great deal.'

The data involving personal pronoun antecedents suggest that the personal pronoun can act as the antecedent of a relative pronoun with a different syntactic function as long as the personal pronoun has the *morphological* form that "matches" the syntactic function of the relative pronoun: if this is not the case, a marked result arises. This would account for the fact that the examples in (330) are fully acceptable despite the fact that the plural pronoun *jullie* 'you' acts as the subject in the main clause whereas the relative pronoun acts respectively as a direct object, an indirect object and the complement of a preposition. This could be attributed to the fact that the form *jullie* can be used in all these functions. We will return to pronouns modified by a non-restrictive relative clause in Section 3.3.2.3.3.3, sub IV.

(330) a.   Jullie, [$_{RC}$ die ik zo veel   geholpen heb], hebben duidelijk gefaald.
             you   who I   so much helped   have   have   clearly   failed
             'You, who I have helped so much, have clearly failed.'

      b.   Jullie, [$_{RC}$ die ik zo veel hulp   gegeven heb], hebben duidelijk gefaald.
             you   who I   so much help given have   have   clearly   failed
             'You, who I have helped so much, have clearly failed.'

      c.   Jullie [$_{RC}$ op wie   ik zo vertrouwde] hebben duidelijk gefaald.
             you   on whom I   so relied   have   clearly   failed

II. Non-restrictive relative clauses with indefinite antecedents

The examples in (331) show that non-restrictive relative clauses can also have an indefinite antecedent, that is, an antecedent the referent of which is assumed not to be identifiable for the hearer. The relative clauses do not function to restrict the set of possible referents, but simply provide extra information about the referent of the antecedent.

(331) a.   Een student, [$_{RC}$ die mijn colleges volgt], heeft een boek van me geleend.
             a student   who my classes follows has   a book   of me   borrowed
             'A student, who attends my classes, borrowed a book from me.'

      b.   Ik heb een boek geleend aan wat studenten, [$_{RC}$ die mijn college volgen].
             I have a book   lent   to some students   who my classes   follow
             'I have lent a book to some students, all of whom attend my classes.'

In (331), the antecedent is interpreted specifically; the identity of the intended referent(s) is known to the speaker but not to the hearer. Indefinite antecedents of non-restrictive relative clauses can also be generic, as in (332), in which case the relative clause will be interpreted as providing generic information; both in the case of a plural and in the case of a singular antecedent, the information given in the relative clause must be taken to apply to the entire class of entities denoted by the antecedent, that is, to all students.

(332) a.   Studenten, [$_{RC}$ die meestal weinig geld hebben], hebben vaak een baantje.
             students   who usually little money have   have   often a job$_{dim}$
             'Students, who usually have little money, often have a part-time job.'

      b.   Een student, [$_{RC}$ die vaak weinig geld heeft], heeft meestal een baantje.
             a student   who often little money has   has   mostly a job$_{dim}$
             'A student, who mostly has little money, usually has a part-time job.'

It is less clear whether non-restrictive relative clauses can be used to modify nonspecific indefinite antecedents, that is, to noun phrases referring to entities that are not familiar to the speaker. Example (333a) is fully acceptable, but it is not immediately clear whether we should construe the modified noun phrase as nonspecific or as generic; cf. 5.1.1.5.1. sub IIIB. The most prominent reading of example (333b) is one in which the noun phrase is construed specifically, that is, as known to the speaker; the nonspecific interpretation of the noun phrase seems to give rise to a marked result and to favor an appositional reading of the relative clause. Although judgments are somewhat subtle, we conclude from this that it is impossible to modify nonspecific indefinite noun phrases by means of a non-

restrictive relative clause, which could be attributed to the fact that speakers cannot provide additional information about entities not familiar to them.

(333) a. Ik verhuur kamers aan studenten, [_{RC} die geen flat kunnen betalen].
        I rent rooms to students who no flat can pay
        'I only rent rooms to students, who can't afford a flat.'
    b. [#]Ik wil deze kamer aan een student verhuren, [_{RC} die geen flat kan betalen].
        I want this room to a student rent who no flat can pay
        'I rent this room to a student, who can't afford a flat.'

III. Non-restrictive relative clauses with predicative antecedents

Non-restrictive relative clauses can be used to modify nominal predicates provided that the relative pronoun functions as the predicate of the relative clause. The examples in (334) show that in cases like these, the relative pronoun invariably has the form *wat*.

(334) a. Jan is een dwaas, [_{RC} wat/*die ik niet ben].
        Jan is a fool which/that I not am
        'Jan is a fool, which I am not.'
    b. Els is een genie, [_{RC} wat/*dat Peter bepaald niet is].
        Els is a genius which/that Peter distinctly not is
        'Els is a genius, which Peter is certainly not.'
    c. Jan en Els zijn voetbalfans, [_{RC} wat/*die ik niet ben].
        Jan and Els are soccer fans which/that I not am
        'Jan and Els are soccer fans, which I am not.'

When the relative pronoun functions as an argument in a non-restrictive relative clause, it is sometimes difficult to establish what the antecedent of the relative clause is. Example (335a), for example, can easily be misanalyzed as a case involving a non-restrictive relative clause modifying the predicate *een dwaas* 'a fool'. The correct analysis is the one in which the relative clause provides some specific information about the noun phrase *die man* 'that man', which means that the relation of the relative clause to the nominal predicate is more indirect: the fact that the man always does as he is told is the reason why he is considered a fool. This use of the relative clause is characterized by the fact that primary accent is assigned to the relative clause, which provides new information about the antecedent. That the relative clause does not modify the predicate in examples like these is clear from the fact illustrated in (335b) that the pronoun *die* is replaced by its neuter counterpart *dat* when the non-neuter subject *die man* is replaced by the neuter noun phrase *het meisje* 'the girl'. From this we may safely conclude that we are dealing with an extraposed relative clause that takes the subject of the clause as its antecedent, which is further supported by the fact that the primed examples are also acceptable.

(335) a. Die man is een dwaas, [_{RC} die altijd doet wat hem ge<small>ZEGD</small> wordt].
        that man is a fool who always does what him said is
        'That man is a fool, who always does as he is told.'
    a′. Die man , [_{RC} die altijd doet wat hem ge<small>ZEGD</small> wordt], is een dwaas.

    b.   Dat meisje is een dwaas, [_RC_ dat altijd   doet wat   haar geZEGD wordt].
        that man   is a fool   who always does what her said   is
    b′. Dat meisje, [_RC_ dat altijd doet wat haar geZEGD wordt], is een dwaas.

Essentially the same thing is shown in (336), where the nominal predicate is the neuter noun *genie* 'genius'. Again, the form of the relative pronoun is sensitive to the gender of the subject of the clause, not to that of the predicate.

(336) a.   Dat meisje is een genie, [_RC_ dat voortdurend misKEND   wordt].
         that girl is a genius   who continuously underestimated is
         'That girl is a genius, who is continuously underestimated.'
    a′. Dat meisje, [_RC_ dat voortdurend misKEND wordt], is een genie.
    b.   Die man is een genie, [_RC_ die voortdurend misKEND   wordt].
         that man is a genius   who continuously underestimated is
    b′. Die man, [_RC_ die voortdurend misKEND wordt], is een genie.

A complicating factor with the examples in (335) and (336), which we ignored in the discussion above, is that it is not entirely clear whether we are really dealing with non-restrictive relative clauses: Section 3.3.2.3.3.3, sub I, will show that it is normally impossible to extrapose such clauses from subjects in clause-initial position, which means that we may actually be dealing with appositions. However, this does not affect the conclusion that we may draw from the data discussed so far, namely that a nominal predicate cannot be the antecedent of a non-restrictive relative clause when the relative pronoun functions as an argument.

    A potential problem for such a claim is presented by the somewhat marked examples in (337). In these examples, the relative clause is generic in the sense that it provides information about the whole class of fools/genial people: this use of the modifying clause is characterized by placing primary accent on the (adverbial) element expressing the generic nature of the relative clause. The fact that the relative clause provides information about the class denoted by the predicate makes it plausible to assume that it is not the subject but the predicate that functions as the antecedent of the relative clause.

(337) a.   [?]Jan is een dwaas, [_RC_ die immers ALtijd doen wat   ze   gezegd wordt].
         Jan is a fool   who after.all always do   what them said   is
         'Jan is a fool, who, as we know, always do as they are told.'
    b.   [?]Marie is een genie, [_RC_ die   per defiNItie miskend   worden].
         Marie is a genius   which by definition underestimated are
         'Marie is a genius, which by definition are not appreciated.'

It must be noted, however, that the relative pronoun does not agree in number with the nominal predicate: the predicate is singular, whereas the relative pronoun, which functions as the subject of the relative clause, triggers *plural* agreement on the finite verb. Note further that full agreement between the relative pronoun and the neuter nominal predicate *een genie* in (337b), would require that the former have the form *dat* (and not the plural form *die*). This lack of number and gender agreement suggests that we are not dealing with a relative construction in (337) at all, but with a construction of some other type. In this connection, it may be useful to refer to the sequences in (338), where the anaphoric plural pronoun in the second sentence also

refers to all the members of the class referred to by the singular generic subjects of the first sentence.

(338) a. Een genie wordt zelden tijdens zijn leven erkend. *Ze* zijn
          a genius is   seldom during his life   recognized. They are
          daarom vaak ongelukkig.
          therefore often unhappy.
          'A genius is rarely appreciated during his life. That's why they are often unhappy.
      b. Een kat is een ideaal huisdier. *Ze* geven nauwelijks rommel.
          a cat is an ideal pet.   They give hardly   mess
          'A cat is an ideal pet. They hardly give any mess.'

From the discussion in this subsection, we conclude that non-restrictive relative clauses can only be used when the relative pronoun also functions as a predicate, in which case the pronoun must have the form *wat*.

3.3.2.3.3.2. Different types of non-restrictive relative clauses

Non-restrictive relative clauses typically provide additional, non-identifying information about the referent(s) of their antecedent, and can therefore normally be left out without affecting the grammaticality or felicity of the construction, and with the addressee not being aware of any information left out. In this use, the non-restrictive relative clauses have a typical "by-the-way" function, and come very close to appositional constructions; cf. Section 3.1.3. The examples in (339) show that this purely additive nature of the information in the relative clause can be made explicit by adding the adverb *overigens* 'by the way', which is unacceptable in the restrictive relative clauses in the primed examples.

(339) a. De auto, [RC die   (overigens) van een Japans merk was], was erg duur.
          the car   which by.the.way of a Japanese brand was   was very expensive
          'The car, which, by the way, was of a Japanese brand, was very expensive.'
      a′. De auto [RC die (*overigens) van een Japans merk was], was erg duur.
      b. Mijn broer, [RC die (overigens) in Utrecht woont], komt vanavond ook.
          my brother   who by.the.way in Utrecht lives   comes tonight   also
          'My brother, who, by the way, lives in Utrecht now, is also coming tonight.'
      b′. Mijn broer [RC die (*overigens) in Utrecht woont], komt vanavond ook.

In some cases, however, the communicative function of the non-restrictive relative clause goes beyond this "by-the-way" function. In the subsections below, we will discuss special uses of non-restrictive relative clauses, where the additional information provided in the clause plays an important part in (situating the modified noun phrase in) the larger context. In addition, we will pay some attention to cleft-sentences, which resemble non-restrictive relative clauses in several respects.

I. Modifying the antecedent and the matrix clause

The additional information provided by the non-restrictive relative clause is not always restricted to the referent of the antecedent; often, the relative clause entertains an implicit adverbial-like relationship with the matrix clause. In example (340a), for instance, the relative clause can be construed as the reason for the

immediate buying of the book. Likewise, the relative clauses in (340b-d) are all likely to be given a similar adverbial-like interpretation, expressing cause in (340b), concessive contrast in (340c), and a temporal relation in (340d).

(340) a. Ik heb   het boek, [$_{RC}$ dat erg mooi   was], direct   gekocht.
            I   have the book   that very beautiful was   immediately bought
            'I have bought the book, which was very beautiful, immediately.'
     b. De man, [$_{RC}$ die een ongeluk heeft gehad], ligt nog steeds in coma.
            the man   who an accident has   had   is   still   in coma
            'The man, who had had an accident, is still in a coma.'
     c. Ik heb   het boek, [$_{RC}$ dat   erg duur   was], toch   maar gekocht.
            I   have the book   which very expensive was   after.all PRT bought
            'I have bought the book, which was very expensive, after all.'
     d. De man, [$_{RC}$ die maandag arriveerde], vertrok de volgende dag weer.
            the man   who Monday arrived   left   the next day   again
            'The man, who arrived on Monday, left the next day.'

In examples like these, the non-restrictive relative clause is needed for a proper interpretation of other elements in the matrix clause; for instance, the adverbs *nog steeds* 'still' in (340b) and the modal particle *toch* 'after all' in (340c) can only be interpreted on the basis of the information given in the relative clause; similarly, the proper interpretation of the adverbial phrases *weer* 'again' and *de volgende dag* 'the next day' in (340d) depend on information given in the relative clause. Leaving out the relative clauses in these cases yields a grammatical but infelicitous result (unless the context provides the relevant information).

II. Continuative relative clauses: discourse relevancy

Non-restrictive relative clauses are normally used to present additional or background information about the antecedent, as in (339), or about the antecedent and the event described in the matrix clause, as in (340). In either case the role of the relative clause is restricted to the sentence, and does not play a crucial role in the development of the discourse (conversation, story, arguments etc.). In some cases, however, non-restrictive relative clauses in sentence-final position may have, in terms of importance as well as discourse continuity, almost the status of a matrix clause. Such non-restrictive relative clauses are often called "continuative" or "consecutive". Although from a purely syntactic point of view such relative clauses can be left out, omission of the relative clause would lead to an information gap, and therefore an incoherent discourse. First, consider the example in (341), in which the information provided by the relative clause is clearly background information, as shown by the fact that adding the modifier *overigens* 'by the way' is perfectly acceptable.

(341)   De zoon van het slachtoffer, [$_{RC}$ die (overigens) volhield onschuldig te zijn],
            the son of the victim   who by.the.way insisted innocent   to be
            werd gisteren   door de politie gearresteerd. De arrestatie vond plaats ...
            was   yesterday by the police   arrested   the arrest   took place
            'The son of the victim, who (by the way) maintained his innocence, was
            yesterday arrested by the police. The arrest took place ...'

In (342a), on the other hand, the relative clause forms a crucial link in the discourse chain. As such the use of *overigens* is infelicitous, while a modifier like *vervolgens* 'subsequently', which serves to enhance discourse coherence, is perfectly acceptable. The sequence in (342a) comes, therefore, very close to the sequence in (342b), where the same information is provided in a matrix clause.

(342) a. De politie heeft gisteren   de zoon van het slachtoffer gearresteerd, [$_{RC}$ die
            the police has   yesterday the son of the victim   arrested   who
            vervolgens/$^{*?}$overigens   hulp inriep van een advocaat]. Deze advocaat ...
            subsequently/by.the.way help called of a lawyer   this lawyer
            'Yesterday, the police arrested the son of the victim, who subsequently
            enlisted the immediate help of a well-known lawyer. This lawyer ...'
       b. De politie heeft gisteren   de zoon van het slachtoffer gearresteerd.
            the police has   yesterday the son of the victim   arrested.
            Deze   riep   direct   de hulp in   van een advocaat. Deze advocaat ...
            the latter called directly the help prt. of a lawyer   this lawyer
            'Yesterday, the police arrested the son of the victim. The latter enlisted the
            immediate help of a well-known lawyer. This lawyer ...'

III. Cleft constructions

This subsection briefly mentions some of the properties of the cleft construction, as this construction contains a phrase closely resembling a relative clause. Despite the fact that there is no intonation break between the antecedent and the modifying clause, we will nevertheless analyze this modifying clause as non-restrictive, as it does not restrict the (possibly singleton) referent set of the antecedent, but modifies this antecedent as a whole. Such an analysis is supported by the fact that under all circumstances the antecedent can take the form of a proper noun or a uniquely referring expression (Smits 1989: 203).

As can be seen from the examples in (343), cleft constructions characteristically contain the copular verb *zijn* and the impersonal pronoun *het* 'it'. The modifying clause seems to contain a relative pronoun, which takes the non-pronominal phrase (which need not be a DP) as its antecedent. The function of the cleft construction as a whole is to emphasize the referent set of the antecedent, which is always given focal/contrastive accent.

(343) a. Het zijn de AmeriKAnen [die dit   voor het eerst ontdekt   hebben].
            it   are the Americans   who this for the first   discovered have
            'It is the Americans who first discovered this.'
       b. Het was JAN [van wie ik het goede nieuws heb   vernomen].
            it   was Jan   of who I   the good news   have heard
            'It was Jan from whom I heard the good news.'
       c. Het is de presiDENT [die dit soort beslissingen   dient   te nemen].
            it   is the president who this sort [of] decisions ought   to take
            'It is the president who ought to make this kind of decisions.'

The relative clause fulfills the crucial function of linking this antecedent to the ongoing discourse by supplying additional information. The relative clause in (343a), for example, clearly does not function to restrict the set of all Americans,

but instead provides further information about this set as a whole. This additional information links the antecedent to the previous discourse, which is clear from the fact that the relative clause contains the deictic demonstrative pronoun *dit* 'this', which can only be interpreted by appealing to information from the preceding context. When we abstract away from the contrastive function of the cleft construction, (343a) provides more or less the same information as the main clause *De Amerikanen hebben dit voor het eerst ontdekt* 'The Americans discovered this first'. This means that leaving out the relative clause renders the construction infelicitous since this deprives the addressee from the information needed to properly relate the Americans to the topic of discussion and would leave the addressee wondering why reference is made to the entities denoted by the nominal predicate.

3.3.2.3.3.3. The positions of antecedent and relative clause

Non-restrictive clauses always follow their antecedent. Although they need not be adjacent to it, in many cases relative clauses do immediately follow their antecedent. This is illustrated in (344) for cases in which the antecedent functions as a subject, a direct or indirect object, or the complement of a preposition.

(344) a. Jan, [$_{RC}$ die naast mij   woont], speelt goed piano.
         Jan   who next.to me lives   plays well piano
         'Jan, who lives next to me, plays the piano well.'
     b. Ik heb net voor het eerst mijn buurman, [$_{RC}$ die leraar   is], ontmoet.
         I   have just for the first   my neighbor   who teacher is   met
         'I have just met my neighbor, who is a teacher, for the first time.'
     c. Ik heb Jan, [$_{RC}$ die ziek is], een leuke detective gegeven.
         I have Jan   who ill   is a nice detective   given
         'I have given Jan, who is ill, a nice detective novel.'
     d. Ik heb naar Jan, [$_{RC}$ die mooi   piano speelt], geluisterd.
         I   have to Jan   who beautifully piano plays   listened
         'I have listened to Jan, who plays the piano beautifully.'

As previously noted, the antecedent and the relative clause need not always be adjacent, and this section briefly discusses a number of issues relating to the positions of antecedent and relative clause. First we will consider cases in which the relative clause is extraposed, next we will look at the possibilities for topicalization, and we will conclude with a discussion of non-restrictive relative clauses with personal pronoun antecedent, which exhibit special behavior with regard to word order.

I. Extraposition of the relative clause

The possibility of °extraposition of non-restrictive relative clauses seems to be more or less the same as in the case of that of restrictive relative clauses discussed in Section 3.3.2.3.3.3, albeit that the result always tends to be slightly marked. Furthermore, it must be noted that giving judgments is often complicated by the fact that the resulting strings are generally also acceptable on an appositive reading, in which case the clause is preceded by a very distinct intonation break (a pause and usually a falling intonation much more pronounced than in the case of non-

restrictive modifiers), which separates it from the preceding material, and emphasizes its parenthetical nature.

Section 3.3.2.3.3.3 has shown that extraposition of a non-restrictive relative clause is possible from a subject provided that the latter does not occupy the canonical subject position to the immediate right of the complementizer. The examples in (345) show that the same holds for non-restrictive relative clauses. Whereas (345a) is only acceptable when pronounced with the intonation pattern typical of an appositional reading, the examples in (345b′&c′) do not require this.

(345)　　• Subject

　　　a.　Jan, [RC die naast mij woont], speelt goed piano.
　　　　　Jan　　who next.to me lives　　plays　well　piano
　　　　　'Jan, who lives next to me, plays the piano well.'
　　　a′.　*Jan speelt goed piano, [RC die naast mij woont].
　　　b.　dat er　　nu　een pianist, [RC die　prachtig speelt], naast me　woont.
　　　　　that there now a pianist　　　who beautifully plays next.to me lives
　　　　　'that there lives a pianist next to me, who plays beautifully.'
　　　b′.　[?]dat er nu een pianist naast me woont, [RC die prachtig speelt].
　　　c.　dat　waarschijnlijk de pianist, [RC die　prachtig speelt], wordt gekozen.
　　　　　that probably　　　the pianist　who beautifully plays is　　　chosen
　　　　　'that the pianist will be chosen, who plays beautifully.'
　　　c′.　[?]dat waarschijnlijk de pianist wordt gekozen, [RC die prachtig speelt].

Example (346b) shows that extraposition of a non-restrictive relative clause from a direct object antecedent seems possible: of course, we may be dealing here with an apposition as well, but it seems that we do not have to pronounce this example with the intonation pattern associated with appositions. In this respect, example (346b) crucially differs from the (c)-examples in (346), which involve, repectively, scrambling and topicalization of the direct object and which are only acceptable with the intonation pattern associated with appositions.

(346)　　• Direct object

　　　a.　Ik heb　net　voor het eerst mijn buurman, [RC die　leraar　is], ontmoet.
　　　　　I　have　just for the first　my neighbor　　who teacher is　met
　　　　　'Yesterday I met my neighbor, who is a teacher, for the first time.'
　　　b.　Ik heb net voor het eerst mijn buurman ontmoet, [RC die leraar is].
　　　c.　[#]Ik heb mijn buurman net voor het eerst ontmoet, [RC die leraar is].
　　　c′.　[#]Mijn buurman heb ik net voor het eerst ontmoet, [RC die leraar is].

Extraposition of non-restrictive relative clauses seems to give rise to a slightly marked result when the antecedent is the complement of a preposition. This is illustrated in (347b) for a prepositional indirect object and in (348b) for a PP-complement of the verb. The (c)-examples show that topicalization of the PP makes the result unacceptable on the intended non-appositional reading. Note that, just as in the case of extraposition of restrictive relative clauses, the markedness of the (b)-examples might be due to the fact that the (b)-examples compete with constructions in which the full PP is extraposed.

(347)   • Prepositional indirect object
    a. Ik heb   die leuke detective aan Jan, [_RC_ die   ziek is], gegeven.
       I   have that nice detective   to Jan   who ill   is   given
       'I have given that nice detective novel to Jan, who is ill.'
    b. ?Ik heb die leuke detective aan Jan gegeven, [_RC_ die ziek is].
    c. #Aan Jan heb ik die leuke detective gegeven, [_RC_ die ziek is].

(348)   • PP-complement
    a. Ik heb   naar Jan, [_RC_ die mooi   piano speelt], geluisterd.
       I   have to Jan   who beautifully piano plays   listened
       'I have listened to Jan, who plays the piano beautifully.'
    b. ?Ik heb naar Jan geluisterd, [_RC_ die mooi piano speelt].
    c. #Naar Jan heb ik geluisterd, [_RC_ die mooi piano speelt].

Section 3.3.2.3.3.3 has also shown that extraposition of restrictive relative clauses from nominal indirect objects is possible provided that the indirect object is preceded by the direct object. The examples in (349) show that the same thing holds for non-restrictive relative clauses: the examples in (349c&d), in which the direct object precedes the indirect object as the result of, respectively, scrambling and topicalization, are considerably better than example (349b), in which the direct object follows the indirect object.

(349)   • Nominal indirect object
    a. Ik heb   Jan, [_RC_ die   ziek is], die leuke detective gegeven.
       I   have Jan   who ill   is   that nice detective   given
       'I have given Jan, who is ill, that nice detective novel.'
    b. *Ik heb Jan die leuke detective gegeven, [_RC_ die ziek is].
    c. ?Ik heb   het Jan gegeven, [_RC_ die   ziek is].
       I   have it Jan given   who ill   is
    d. ?Die leuke detective heb Jan gegeven, [_RC_ die ziek is].

The data in (349) suggest that an extraposed non-restrictive relative clause must be construed with the first noun phrase to its left. This can be further supported by the contrast between the primeless and primed examples in (350). The unacceptability of (350a′) can of course be accounted for by appealing to the °freezing principle, given that the word order in this example is derived by leftward movement of the prepositional indirect object. The unacceptability of (351b), on the other hand, cannot be accounted for in the same way, given that we are dealing here with the underlying order of the two arguments. The fact that leftward movement of the prepositional indirect object in (350b′&b″) makes this example fully acceptable therefore supports the claim that an extraposed non-restrictive relative clause must be construed with the first noun phrase to its left.

(350)   • Direct object construction
    a. Ik heb   een boek aan Peter gegeven, [_RC_ die   ziek is].
       I   have a book   to Peter given   who ill   is
    a′. *Ik heb aan Peter een boek gegeven, [_RC_ die ziek is].

b. *?Ik heb ?een/*?het boek aan Peter gegeven, [RC1 dat over WO II gaat].
I have a/the book to Peter given that about WW II goes

b′. Ik heb aan Peter een/het boek gegeven, [RC1 dat over WO II gaat].

b″. Aan Peter heb ik een/het boek gegeven, [RC1 dat over WO II gaat].

II. Multiple extraposed relative clauses

The conclusion that an extraposed non-restrictive relative clause must be construed with the first noun phrase to its left predicts that if a sentence contains two non-restrictive relative clauses modifying different DPs, only the second relative clause can be extraposed. The examples in (351) show that this prediction is correct: example (351a) simply gives the unmarked order without extraposition; the (b)-examples show that, as expected, extraposition of RC_2 gives rise to an acceptable (though marked) result, whereas extraposition of RC_1 gives rise to an unacceptable result; the (c)-examples show that extraposition of both relative clauses is impossible regardless of their order.

(351) a. Ik heb een boek, [RC1 dat over WO II gaat],
I have a book which about WW II goes
aan Peter, [RC2 die ziek is], gegeven.
to Peter who ill is given
'I have given a book, which deals with WW II, to Peter, who is ill.'

b. Ik heb een boek, dat over WO II gaat, aan Peter gegeven, die ziek is.

b′. *Ik heb een boek aan Peter, die ziek is, gegeven, dat over WO II gaat.

c. *Ik heb een boek aan Peter gegeven, dat over WO II gaat, die ziek is.

c′. *Ik heb een boek aan Peter gegeven, die ziek is, dat over WO II gaat.

When two non-restrictive relative clauses modify a single antecedent, extraposition is also excluded. Section 3.3.2.4, sub I, will show that °stacking of non-restrictive relative clauses is severely restricted, but not impossible: if the two stacked relative clauses are introduced by different relative pronouns and if the relation between the two relative clauses is specified, as (352a) the result may be more or less acceptable, although a structure in which the two relative clauses are coordinated is much preferred; cf. the fully acceptable *Ik heb Els uitgenodigd, die hiernaast woont en met wie ik (bovendien) bevriend ben.* The two (b)-examples show that extraposition of the relative clauses is categorically impossible.

(352) a. Ik heb Els, [RC die hiernaast woont],
I have Els who next.door lives
[RC met wie ik ??(bovendien) bevriend ben], uitgenodigd.
with whom I moreover friendly am invited
'I have invited Els, who lives next door and who is a friend of mine.'

b. *Ik heb E., die hiernaast woont, uitgenodigd, met wie ik (bovendien) bevriend ben.

b′. *Ik heb E. uitgenodigd, die hiernaast woont, met wie ik (bovendien) bevriend ben.

III. Leftward movement of the antecedent

Scrambling of the antecedent and relative clause together is possible, as shown by (353b) for direct object antecedents. Example (353c) shows that scrambling of the direct object cannot strand the non-restrictive relative clause, and (353d) illustrates

that scrambling of the antecedent is also impossible when the relative clause is extraposed. The examples in (354) illustrate the same for a prepositional indirect object antecedent.

(353) a. Ik heb net mijn buurman, [_RC_ die hier onlangs is komen wonen], ontmoet.
     I have just my neighbor   who here recently is come live   met
     'I have just met my neighbor, who recently came to live here.'
   b. Ik heb mijn buurman, [_RC_ die hier onlangs is komen wonen], net ontmoet.
   c. *Ik heb mijn buurman net, [_RC_ die hier onlangs is komen wonen], ontmoet.
   d. *Ik heb mijn buurman net ontmoet, [_RC_ die hier onlangs is komen wonen].

(354) a. Ik heb dat boek over WO II   aan Peter, [_RC_ die ziek is], gegeven.
     I   have het book about WW II to Peter   who ill   is given
     'I gave that book on WW II to Peter, who is ill.'
   b. Ik heb aan Peter, [_RC_ die ziek is], dat boek over WO II gegeven.
   c. *Ik heb aan Peter dat boek over WO II, [_RC_ die ziek is], gegeven.
   d. *Ik heb aan Peter dat boek over WO II gegeven, [_RC_ die ziek is].

Topicalization of both antecedent and restrictive relative clause is possible. This is true regardless of the syntactic function of the antecedent. This is illustrated in the (b)-examples of (355) and (356) for antecedents functioning, respectively, as a direct and an indirect object. The (c)-examples show that topicalization cannot strand the relative clause in the original position of the object. The (d)-examples show that, unlike in constructions with restrictive relative clauses, splitting the antecedent and the relative clause by topicalizing the former and extraposing the latter is excluded: (355d) is acceptable but only on a (restrictive) appositive reading (see Section 3.1.3) and example (356d) is completely unacceptable.

(355) a. Ik heb net mijn buurman, [_RC_ die hier onlangs is komen wonen], ontmoet.
     I have just my neighbor   who here recently is come live   met
     'I have just met my neighbor, who recently came to live here.'
   b. Mijn buurman, [_RC_ die hier onlangs is komen wonen], heb ik net ontmoet.
   c. *Mijn buurman heb ik net, [_RC_ die hier onlangs is komen wonen], ontmoet.
   d. *Mijn buurman heb ik net ontmoet, [_RC_ die hier onlangs is komen wonen].

(356) a. Ik heb dat boek over WO II   aan Peter, [_RC_ die ziek is], gegeven.
     I   have het book about WW II to Peter   who ill   is given
     'I gave that book on WW II to Peter, who is ill.'
   b. Aan Peter, [_RC_ die ziek is], heb ik dat boek over WO II gegeven.
   c. *Aan Peter heb ik dat boek over WO II, [_RC_ die ziek is], gegeven.
   d. *Aan Peter heb ik dat boek over WO II gegeven, [_RC_ die ziek is].

IV. A special case: personal pronoun antecedents

Section 3.3.2.3.3.1, sub I, has shown that non-restrictive relative clauses can be used to modify personal pronouns: when the antecedent and the relative pronoun have the same syntactic function (in the matrix clause and relative clause, respectively) such constructions are perfectly acceptable; when the antecedent and the relative pronoun do not have the same syntactic function, the result is somewhat marked if either the relative pronoun or the antecedent functions as a subject.

In the case of topicalization the results are somewhat different, however: the examples in (357) seem to indicate that topicalization of the object of the matrix clause is possible only in those cases where the antecedent and relative pronoun have the same syntactic function. The examples in (357), for example, in which the antecedent *hem* 'him' and the relative pronouns function as direct objects, are fully acceptable.

(357) a. Hem, [RC die ze ontslagen hebben], hebben ze niet uitgenodigd.
       him   who they fired   have   have   they not invited
   b. Hem, [RC die Marie aan me voorstelde], had ik nooit eerder gezien.
       him   who Marie to me introduced   had I   never before seen
       'Him, who Marie introduced to me, I had never seen before.'

If, on the other hand, the relative pronoun has the function of subject of the relative clause, as in (358), the result is highly marked.

(358) a. *?Hem, [RC die er   om gevraagd had], hebben ze   niet uitgenodigd.
        him   who there for asked   has   have   they not invited
   b. *?Hem, [RC die daar met Marie   praat], heb ik nooit eerder gezien.
        him   who there with Marie talks   have I   never before seen

Example (359a) shows, however, that examples like (358) improve when the topicalized object pronoun takes the subject form that corresponds to the function of the relative pronoun in the relative clause. As shown by example (359b), this form (*hij* 'he') is not acceptable when the direct object is in its regular position in the °middle field of the clause.

(359) a. ?Hij, [RC die daar met Marie   praat], heb ik nooit eerder gezien.
        he   who there with Marie talks   have I   never before seen
   b. Ik heb   hem/*hij, [RC die daar met Marie   praat], nooit eerder gezien.
       I   have him/he   who there with Marie talks   never before seen

Note further that this option of using the nominative form only arises with the direct object; when the antecedent functions as the indirect object of the matrix clause, the subject form can never be used, regardless of whether the object is in topicalized position or in its regular position in the middle field of the clause. This is shown by (360).

(360) a. *Hij, [RC die er om gevraagd had], hebben ze   een exemplaar toegestuurd.
        he   who there for asked had   have   they a copy   prt.-sent
   b. Ze hebben hem/*hij, [RC die er om gevraagd had], een exemplaar toegestuurd.

The examples in (361), finally, show that in other cases in which the antecedent and the relative pronoun perform different syntactic functions similar problem do not arise. For example, in (361a) the antecedent has the function of indirect object whereas the relative pronoun functions as direct object, but still topicalization is possible. And in (361b) the antecedent functions as a direct object whereas the relative pronoun is part of the adverbial phrase, and does not even function as an argument in the relative clause. From this we may conclude that topicalization is possible when the antecedent pronoun has the morphological form required by the

syntactic function of the relative pronoun in the relative clause. In this respect, non-restrictive relative clauses behave just like restrictive ones; cf. Section 3.3.2.3.2.2, sub V.

(361) a. Mij, [$_{RC}$ die ze   vergeten waren], hebben ze later een exemplaar gestuurd.
           me   who they forgotten were   have they later a copy   sent
           'They have sent me, who they had forgotten, a copy later.'
     b. Haar, [$_{RC}$ met wie   Els staat te praten], heb ik nooit eerder gezien.
           her   with whom Els stands to talk   have I   never before seen
           'Her, with whom Els is talking, I have never seen before.'

3.3.2.4. Stacked, coordinated and nested relative clauses

This section discusses relative constructions containing more than one relative clause. The relative clauses in such constructions can be stacked, nested or coordinated. Some examples are given in (362). In example (362a), the two subclauses are stacked: as indicated by the indices, the first relative clause modifies the antecedent *student* 'student', while the second relative clause modifies the sequence *student die hiernaast woont* 'student who lives next door'. Such constructions differ from cases of nesting, illustrated in (362b), where the second relative clause modifies a noun phrase contained in the first relative clause. Both types of construction differ from cases of simple coordination of relative clauses, as in (362c), where each relative clause modifies the same antecedent. As we will see below, stacking of relative clauses is fully acceptable only with restrictive relative clauses (as in example (362a)); coordination and nesting are possible both with restrictive and with non-restrictive relative clauses.

(362) a. De [[student$_i$ [die$_i$ hiernaast woont]]$_j$ [die$_j$ Engels studeert]] komt uit Japan.
           the student   who next.door lives   who English studies   is   from Japan
           'The student who lives next door who studies English, is from Japan.'
     b. De student$_i$ [die$_i$ net een boek$_j$ kocht [dat$_j$ over WO II gaat]] is mijn vriend.
           the student   who just a book bought which about WW II goes is my friend
           'The student who has just bought a book which is about WW II is my friend.'
     c. De man$_i$ [die$_i$ hier net was] en [die$_i$ Russisch sprak] is een bekend schrijver.
           the man who here just was   and who Russian spoke   is a well-known writer
           'The man who was just here and who spoke Russian is a well-known writer.'

Subsection I will discuss stacking and coordination of relative clauses of the same type. Subsection II will continue by discussing nesting of restrictive and non-restrictive relative clauses. Subsection III, finally, will consider constructions containing relative clauses of different types, that is, combinations of a restrictive and a non-restrictive relative clause.

I. Stacking and coordination of relative clauses

This section provides a discussion of the difference between stacking and coordination of relative clauses, the differences between restrictive and non-restrictive relative clauses in this respect, and the circumstances under which stacking of restrictive relative clauses is allowed.

A. Restrictive relative clauses

The primeless examples in (363) show that stacking of restrictive relative clauses leads to a fully acceptable result. In (363a) the two restrictive relative clauses each in turn fulfill a restrictive function. The first relative clause restricts the set of possible referents of the antecedent noun *student* 'student' to those that were just present. The addition of the second restrictive clause has the implication that this restricted set has a cardinality greater than one, and that only after applying this second restriction can the referent intended by the speaker be uniquely identified. Similarly, in (363b), the set of entities denoted by the noun *man* is first restricted to those men who were just at the indicated place, and is then narrowed down further to the one who spoke Russian. Thus, by twice restricting the set of potential referents the speaker enables the hearer to pick out the intended referent. Observe that although both sentences are restrictive, there is a preferred order proceeding from the general to the specific. In (363b), for instance, the set of men that were present will normally be larger than the set of men who spoke Russian, and for this reason inverting the order of the relative clauses, as in (363b′), will lead to a less acceptable result: this inverted order is only possible when the relative clause *die hier net was* receives (contrastive) emphasis, by which means the speaker may indicate that this information must be construed as the most specific.

(363) • Stacked relative clauses: D [$_{NP}$ [$_{NP}$ [... N ...]$_i$ [$_{RC}$ REL$_i$ ... t_i ...]]$_j$ [$_{RC}$ REL$_j$ ... t_j ...]]
   a. De [[student$_i$ [die$_i$ hier net was]]$_j$ [die$_j$ Engels studeert]] is mijn vriend.
       the student   that here just was   that English studies   is my friend
       'The student who was just here who studies English is my friend.'
   b. De [[man$_i$ [die$_i$ hier net was]]$_j$ [die$_j$ Russisch sprak]] is een bekend schrijver.
       the man   that here just was   that Russian spoke   is a well-known writer
       'The man who was just here who spoke Russian is a well-known writer.'
   b′. $^{??}$De man die Russisch sprak die hier net was is een bekend schrijver.

The examples in (364) show that the two relative clauses can also be coordinated. These examples differ from those in (363) in that the two relative clauses have the same antecedent. This also relates to a difference in meaning: whereas (363a) implies that more students were just present, such an implication is absent from the construction in (364a), where the two relative clauses merely restrict the set of students to the one student who was just here and who studies English. The same thing is true for the sentence in (364b), where the set of men is restricted to the one who was just present and who spoke Russian. Since in coordinated constructions the two relative clauses restrict the same antecedent set, it is possible to reverse the order of the two relative clauses. This is shown by (364b′).

(364) • Coordinated relative clauses: D [$_{NP}$ [... N ...]$_i$ [[$_{RC}$ REL$_i$ ... t_i ...] en [$_{RC}$ REL$_i$ ... t_i ...]]]
   a. De student$_i$ [[die$_i$ hier net was] en   [die$_i$ Engels studeert]] is mijn vriend.
       the student   who here just was and who English studies   is my friend
       'The student who was just here yesterday who studies English, is my friend.'
   b. De man$_i$ [[die$_i$ hier net was] en   [die$_i$ Russisch sprak]] is een bekend schrijver.
       the man who here just was and   who Russian spoke   is a well-known writer
       'The man who was just here and who spoke Russian is a well-known writer.'
   b′. De man$_i$ [[die$_i$ Russisch sprak] en [die$_i$ hier net was]] is een bekend schrijver.

From a syntactic point of view, stacking and coordination are both unlimited; in practice, however, sentences soon become too complex, both syntactically and semantically, and as a result uninterpretable.

B. Non-restrictive relative clauses

Stacking of non-restrictive relative clauses seems restricted but not entirely impossible. The examples in (365a&b), where the antecedent is followed by two non-restrictive relative clauses, are highly marked and may even be considered unacceptable by some speakers. If, however, two different relative pronouns are used, as *die* and *wie* in examples (365c) and *dat* and *waar* in (365d), the result seems to be more acceptable.

(365)   • Stacked non-restrictive relative clauses
   a. ??De student$_i$, [die$_i$ hier net was], [die$_i$ Engels studeert] , is mijn vriend.
        the student   who here just was   who English studies   is my friend
        'The student, who was just here (and) who studies English, is my friend.'
   b. ??De man$_i$, [die$_i$ hier net was], [die$_i$ Russisch sprak], is een bekend schrijver.
        the man   who here just was   who Russian spoke   is a well-known writer
        'The man, who was just here (and) who spoke Russian, is a well-known writer.'
   c. ?Jan$_i$, [die$_i$ net vertrokken is], [van wie$_i$ ik geen adres heb] , is onvindbaar.
        Jan   who just left is   of whom I no address have   is untraceable
        'Jan, who has just left (and) of whom I have no address, is untraceable.'
   d. ?In het noorden$_i$, [dat$_i$ onbewoond is],   [waar$_i$ weinig toeristen komen],
        in the north   which uninhabited is   where few tourists come
        is de natuur   nog ongerept.
        is the nature   still unspoilt
        'In the north, which is uninhabited. where few tourists go, nature is still unspoilt.'

The markedness of the examples in (365) may be due to the fact that they can only be given a coordinated reading, with both relative clauses modifying the same antecedent. This means that these examples compete with the examples in (366), in which this reading is made explicit by means of the conjunction *en* 'and'.

(366)   • Coordinated non-restrictive relative clauses
   a. De student$_i$, [[die$_i$ hier net was] en [die$_i$ Engels studeert]] , is mijn vriend.
   b. De man$_i$, [[die$_i$ hier net was] en [die$_i$ Russisch sprak]] , is een bekend schrijver.
   c. Jan$_i$, [[die$_i$ net vertrokken is] en [van wie$_i$ ik geen adres heb]] , is onvindbaar.
   d. In het noorden$_i$, [[dat$_i$ onbewoond is] en [waar$_i$ weinig toeristen komen]] , is
       de natuur nog ongerept.

II. Nesting of restrictive and non-restrictive relative clauses

This section discusses the nesting of relative clauses, that is, cases where a relative clause modifies a constituent of some other relative clause, so that the former is embedded in the latter. An example involving restrictive relative clauses can be found in (367): the first relative clause, introduced by the pronoun *die*, modifies the antecedent *man* 'man'; the second relative clause, headed by the pronoun *dat*, modifies the noun *boek* 'book', which is contained by the first relative clause.

(367)   Hij is de man$_i$ [$_{RC}$ die$_i$ een boek$_j$ [$_{RC}$ dat$_j$ over de oorlog gaat] kocht].
           he is the man   who a book   which about the war   goes bought
           'He is the man who has bought a book which is about the war.'

In those cases where the two relative pronouns take the same form, ambiguity may arise between a stacked and a nested reading. Thus in example (368a) the two relative clauses can be either stacked or nested. In the former case, the second relative clause is interpreted as modifying the phrase *man die onlangs getrouwd is met een schrijfster*; on the latter interpretation, the relative clause modifies the *schrijfster*. The two analyses are given in (368b&b′), respectively.

(368) a.   de man die getrouwd is met een schrijfster die   ik net heb   ontmoet ...
            the man who married   is to a writer   who I just have met
      b.   de [$_{NP}$ [$_{NP}$ man$_i$ die$_i$ getrouwd is met een schrijfster]$_j$ die$_j$ ik net heb ontmoet] ...
      b′.   de [$_{NP}$ man$_i$ die$_i$ getrouwd is met een [$_{NP}$ schrijfster$_j$ die$_j$ ik net heb ontmoet]] ...

Although Subsection I has shown that stacking of non-restrictive relative clauses is not readily possible, nesting of non-restrictive relative clauses is unproblematic: each new relative clause may, in principle, take as its antecedent a noun phrase from the preceding relative clause. This is very clear from (369b) as the relative pronoun *waar* 'where' can only take the location *in Utrecht* as its antecedent. Due to this difference in acceptability between stacking and nesting, ambiguity does not readily arise. This is clear from the fact that the most likely interpretation of example (369b) is that in which the second relative clause modifies the proper noun *Marie*, not the proper noun *Jan*: in order to obtain the latter reading the two relative clauses must be coordinated.

(369) a.   Ik ga naar Peter$_i$, [$_{RC}$ die$_i$ in Utrecht$_j$ woont, [$_{RC}$ waar$_j$ hij een baan heeft]].
            I   go to Peter   who in Utrecht lives   where he a job has
            'I am going to Peter, who lives in Utrecht, where he has a job.'
      b.   Jan, die getrouwd is met Marie, die uit Duitsland   komt,
            Jan who married   is with Marie who from Germany comes
            gaat in Berlijn werken.
            goes in Berlin work
            'Jan, who is married to Marie, who is from Germany, is going to work in Berlin.'

Like stacking and coordination, nesting of relative clauses is, from a syntactic point of view, unlimited; in practice, however, sentences soon become too complex, both syntactically and semantically, and as a result uninterpretable.

III. Mixed constructions with restrictive and non-restrictive relative clauses

Restrictive relative clauses always precede non-restrictive clause: in (370a), for example, the first relative clause restricts the set of men denoted by its antecedent *man*, while the second relative clause provides additional information about the resulting referent set of the noun phrase *man die de vergadering leidde* 'man who chaired the meeting'. Example (370b) shows that the restrictive clause cannot follow the non-restrictive one; at best, this example can (marginally) be interpreted with a non-restrictive reading of the second clause.

(370) a. De man [$_{RC}$ die de vergadering leidde], [$_{RC}$ die   een vriend van mij is], ...
        the man   who the meeting   led   who a friend of me   is
        'The man who chaired the meeting, who is a good friend of mine, ...'
    b. #De man, die een goede vriend van mij is, die de vergadering leidde ...

This word order restriction can be accounted for by the structure of the noun phrase proposed in 3.3.2.1: the restrictive relative clause (RRC) must be part of the NP-domain given that it affects the denotation of the NP, whereas the non-restrictive relative clause (NRC) does not have this effect, and must therefore be outside this domain (but within the DP-domain; cf. Section 3.1.2, sub II). This leads to the structure in (371), from which the word order restriction follows immediately.

(371)   [$_{DP}$ D [$_{NP}$ [... N ...]$_i$ [$_{RRC}$ REL$_i$ ... t_i ...]]$_j$, [$_{NRC}$ REL$_j$ ... t_j ...]] , ...

3.3.2.5. Coordinated antecedents

This section discusses relative clauses with coordinated antecedents. The discussion will be mainly restricted to conjunctive coordination with *en* 'and' and disjunctive coordination with *of* 'or'. Some examples are given in (372) and (373). Further we will focus on those features of coordination relevant to the form and the interpretation of the relative clause.

(372)   • Conjunctive coordination (*en* 'and')
    a. Jan speelt straks   preludes en etudes   die hij onlangs gecomponeerd heeft.
        Jan plays   later   preludes and etudes   which he recently composed has
        'Later Jan will play preludes and etudes which he has recently composed.'
    b. Jan speelt straks een prelude en een etude die hij onlangs gecomponeerd heeft.
        Jan plays later   a prelude and an etude   which he recently composed has
        'Later Jan will play a prelude and an etude which he has recently composed.'

(373)   • Disjunctive coordination (*of* 'or')
    a. Jan speelt straks   preludes of etudes die hij onlangs gecomponeerd heeft.
        Jan plays later   preludes or etudes which he recently composed has
        'Later Jan will play preludes or etudes which he has recently composed.'
    b. Jan speelt straks een prelude of een etude die hij onlangs gecomponeerd heeft.
        Jan plays later   a prelude or an etude   which he recently composed has
        'Later Jan will play a prelude or an etude which he has recently composed.'

In (372) and (373) we are dealing with restrictive relative clauses, but we will see that modification by means of non-restrictive relative clauses is usually acceptable as well. The fact that the coordinated antecedents in these examples involve indefinite noun phrases and are headed by nouns of the same gender (non-neuter) is also accidental; coordinated antecedents may just as well involve definite noun phrases and, at least under certain circumstances, be headed by nouns of a different gender. The discussion below will be restricted to cases with at most two conjuncts, despite the fact that, in principle, the number of coordinated elements is unlimited (although in practice their number will be restricted by the limited capacity of short-term memory). Examples with three conjuncts with the conjunction *en* are given in (374a) and (374b) for, respectively, restrictive and non-restrictive relative clauses. In (375), we give comparable examples with the disjunctive conjunction *of* 'or'.

(374) a.   *De boeken, artikelen en recensies   die ik wil lezen*,   bleken niet beschikbaar.
        the books articles and reviews   that I want read   proved not   available
        'The books, articles and reviews that I want to read appeared not to be available.'

     b.   *Deze boeken, artikelen en recensies, die ik wil lezen*,   zijn niet beschikbaar.
        these books articles and reviews   which I want read are not available
        'These books, articles and reviews, which I want to read, are not available.'

(375) a.   We mogen *honden, katten of andere huisdieren*
        we may   dogs   cats   or other pets
        die   geen overlast bezorgen houden.
        which no trouble   cause is   keep
        'We are allowed to keep dogs, cats or other pets that cause no trouble.'

     b.   We mogen *honden, katten of andere kleine huisdieren,*
        we may   dogs   cats   or other small pets
        die   immers geen overlast bezorgen, houden.
        which after.all no trouble   cause   keep
        'We are allowed to keep dogs, cats or other small pets, which after all do not
        cause any trouble.'

Conjunctive and disjunctive coordination will be discussed separately in Sections 3.3.2.5.2 and 3.3.2.5.3, respectively. In both sections, we will discuss constructions with different types of coordinated antecedent such as coordinated plurals, coordinated singulars, etc. Section 3.3.2.5.1 will start, however, with a more general discussion of the scope of the relative clause, that is, the fact that relative constructions with a coordinated antecedent may give rise to ambiguity concerning the size of the antecedent of the relative clause.

3.3.2.5.1. *Coordinated and non-coordinated antecedent reading*

Many of the coordination constructions to be discussed below are ambiguous with respect to the scope of the relative clause in the sense that this clause can be taken as modifying either both conjuncts of the coordination or only the second conjunct; cf. Smits (1989: 122-129). In example (372a), for example, the relative clause can be taken to modify the coordinated structure *preludes en etudes* as a whole, or the second conjunct, *etudes*, only. We will refer to these two cases as, respectively, the COORDINATED and the NON-COORDINATED ANTECEDENT READING. The following discussion will show that some examples allow both readings, some for the non-coordinated antecedent reading only, while yet others are unacceptable on either reading. Here, we will briefly sketch a number of possible ways of accounting for the ambiguity that may differ on account of two parameters: the question whether the two conjuncts do or do not have a determiner of their own, and the question whether we are dealing with a restrictive or with a non-restrictive relative clause.

I. Coordinated noun phrases with two determiners

When the two conjuncts each have their own determiner the analysis depends on whether the relative clause is restrictive or not.

A. Coordination with restrictive relative clauses

Sentences in which each of the coordinated noun phrases has its own determiner are in principle eligible for the two analyses in (376). In (376a) it is assumed that Backward °Conjunction Reduction has taken place, which results in the coordinated antecedent reading, that is, the reading where the relative clause is interpreted as a modifier of both adjuncts. In (376b), no Conjunction Reduction is assumed, and in this structure the relative clause modifies only the second conjunct, which results in the non-coordinated antecedent reading. For convenience, the scope of the relative clause is indicated by means of boldface.

(376) a.   Coordinated antecedent reading:
        [$_{DP}$ D [$_{NP}$ **[... N ...]**$_i$ [$_{RC}$ ~~REL$_i$ ...~~]]] and [$_{DP}$ D [$_{NP}$ **[... N ...]**$_j$ [$_{RC}$ REL$_j$ ...]]]
      b.   Non-coordinated antecedent reading:
        [$_{DP}$ D [$_{NP}$ ... N ...]] and [$_{DP}$ D [$_{NP}$ **[... N ...]**$_j$ [$_{RC}$ REL$_j$ ...]]]

Assuming Conjunction Reduction is necessary to account for the availability of the coordinated antecedent reading, since restrictive relative clauses are part of the NP-domain and hence do not take the determiner in their scope; it is therefore not possible to construct a structure in which the two conjuncts are both in the scope of the relative clause without also including at least the second determiner. Although we will see in Section 3.3.2.5.2.2 that the Conjunction Reduction analysis is not without its problems, we will provisionally adopt it since it will enable us to highlight certain problems related to the adjunction site of relative clauses.

II. Coordination with non-restrictive relative clauses

Non-restrictive relative clauses differ markedly from the restrictive ones, in that it is never necessary to appeal to Conjunction Reduction in order to account for the coordinated antecedent reading; we could simply assume the structures in (377). In (377a) the relative clause modifies the two conjuncts, which is possible given that non-restrictive relative clauses do take the determiner in their scope. In (377b), on the other hand, the relative clause only modifies the second conjunct. The scope of the relative clause is again indicated by means of boldface.

(377) a.   Coordinated antecedent reading:
        [$_{DP}$ [[D [$_{NP}$ ... N ...]]] and [D [$_{NP}$ ... N ...]]]$_i$, [$_{RC}$ REL$_i$ ...]]
      b.   Non-coordinated antecedent reading:
        [[$_{DP}$ D [$_{NP}$ ... N ...]]] and [$_{DP}$ **D [$_{NP}$ ... N ...]**$_i$, [$_{RC}$ REL$_i$ ...]]

III. Coordination with a shared determiner

When the two conjuncts share the same determiner, it is not necessary to appeal to Conjunction Reduction in order to account for the coordinated antecedent reading. In (378a), we give the structure that could be assumed for restrictive relative clauses with a coordinated antecedent reading; the structure associated with the non-coordinated antecedent reading is given in (378b). Again, the scope of the relative clause is indicated by means of boldface.

(378) a.   Coordinated antecedent reading:
        [$_{DP}$ D [$_{NP}$ **[[... N ...] and [... N ...]]**$_i$ [$_{RC}$ REL$_i$ ...]]]

b.   Non-coordinated antecedent reading:
[$_{DP}$ D [$_{NP}$ [... N ...] and [[**... N ...**]$_i$ [$_{RC}$ REL$_i$ ...]]]]

3.3.2.5.2.   *Conjunctive coordination (*en *'and')*

When two noun phrases coordinated by the conjunction *en* 'and' are followed by a restrictive relative clause, the latter may be taken to modify either the second conjunct only or both conjuncts together. This ambiguity seems to apply regardless of the definiteness or the number (singular or plural) of the conjuncts, although there are constructions and contexts that exclude one of the readings, and in some cases there also seem to be variations in judgments among native speakers. Sections 3.3.2.5.2.1 and 3.3.2.5.2.2 start by discussing constructions involving a coordinated antecedent with conjuncts that match in number, that is, cases with, respectively, coordinated plural and coordinated singular elements. After that, we discuss a number of more special cases: Section 3.3.2.5.2.3 discusses coordinated structures with a single determiner, and Section 3.3.2.5.2.4 relative constructions with mixed antecedents, that is, cases where the two conjuncts differ in number, gender, etc. Section 3.3.2.5.2.5 provides a number of general conclusions.

3.3.2.5.2.1. Coordinated plurals with two determiners

This section will discuss cases in which the antecedent of the relative clause involves coordinated plural noun phrases. Restrictive and non-restrictive relative clauses will be discussed in separate subsections.

I. Restrictive relative clauses

Noun phrases coordinated by the conjunction *en* 'and' that are followed by a restrictive relative clause may be ambiguous between the coordinated and non-coordinated antecedent reading. This is illustrated in example (379) for constructions in which the conjuncts are indefinite plural noun phrases. The primeless examples, in which both conjuncts are included in the phrase surrounded by square brackets, represent the coordinated antecedent reading, in which the relative clause restricts the combined referent set of the two conjuncts; example (379b), for instance, expresses that a subset of boys and girls (viz. those that are late) will be punished. The primed examples, in which the first conjunct is placed outside the brackets, represent the non-coordinated antecedent reading, in which the first conjunct has non-restricted reference: example (379b′) means that all boys will be punished, but girls only when they are late.

(379)   • Coordinated indefinite plurals
a.   Jan speelt straks [preludes en etudes die hij onlangs gecomponeerd heeft].
Jan plays later   preludes and etudes which he recently composed has
'Later Jan will be playing preludes and etudes which he has recently composed.'
a′. Jan speelt vanavond preludes en [etudes die hij onlangs gecomponeerd heeft].
b.   [Jongens en meisjes die te laat komen], krijgen straf.
boys and girls who too late come   get punishment
'Boys and girls who are late will be punished.'
b′. Jongens en [meisjes die te laat komen], krijgen straf.

Note that true ambiguity only arises in written text, since, in speaking, intonation has a disambiguating function: the non-coordinated antecedent reading in (379b′), for example, requires an intonation break before the conjunction *en* 'and' and extra emphasis on the second noun, *meisjes*.

    Example (380) gives similar cases with definite plurals, both containing an article. Although examples like (380) will normally receive a non-coordinated antecedent reading, the coordinated antecedent readings can be made available by using a specific intonation pattern (for instance, by extra emphasis on the information given in the relative clause).

(380)   • Coordinated definite plurals
    a.   ?Jan speelt [de preludes en de etudes die hij onlangs gecomponeerd heeft].
          Jan plays   the preludes and the etudes which he recently composed has
          'Jan will play the preludes and etudes which he has recently composed.'
    a′.   Jan speelt de preludes en [de etudes die hij onlangs gecomponeerd heeft].
    b.   ?[De jongens en de meisjes die te laat komen], krijgen straf.
           the boys and the girls   who too late come get punishment
          'The boys and the girls who are late will be punished.'
    b′.   De jongens en [de meisjes die te laat komen], krijgen straf.

The difference between the coordinated and non-coordinated antecedent readings of the primeless and primed examples in (380) can be accounted for by assuming that the former involves Backward °Conjunction Reduction; the structure contains two relative clauses that are identical in form, and of which the first is left unexpressed. This is illustrated in (381a) for example (380a). The non-coordinated antecedent reading is fairly straightforward, as it involves a structure in which only the second conjunct is modified by a restrictive relative clause; the first conjunct simply has the structure of a non-modified DP. This is illustrated in (381b) for example (380a′).

(381) a.   Coordinated antecedent reading:
           [$_{DP}$ de [$_{NP}$ preludes$_i$ [$_{RC}$ ~~die, hij onlangs gecomponeerd heeft~~]]] en
           [$_{DP}$ de [$_{NP}$ etudes$_j$ [$_{RC}$ die$_j$ hij onlangs gecomponeerd heeft]]]
       b.   Non-coordinated antecedent reading:
           [$_{DP}$ de [$_{NP}$ preludes]] en
           [$_{DP}$ de [$_{NP}$ etudes$_i$ [$_{RC}$ die$_i$ hij onlangs gecomponeerd heeft]]]

Assuming Conjunction Reduction is indispensable in order to account for the presence of the definite article in the second conjunct of (381a). Section 3.3.2.1 has argued that the article cannot be in the scope of a restrictive relative clause, which led to the conclusion that the relative clause is part of the NP-domain. With only a single relative clause present, however, the coordinated antecedent reading would imply that the antecedent would be at least the full string *preludes en **de** etudes*, so that the second definite article would fall in the scope of the relative clause. With the structure in (381a), on the other hand, the two articles can remain outside the scope of the relative clauses, as required.

    The markedness of the primeless examples in (380) is possibly due to the fact that these examples compete with the examples in (382a&b), in which the two conjuncts share the same article. The latter examples may be preferred on the

coordinated antecedent reading due to the fact that they can be analyzed without postulating any elided material; cf. the representations in (382a′&b′). The examples in (382a&b) may also be favored because. aswe will see in 3.3.2.5.2.3, they normally do not allow the non-coordinated antecedent readings in (382a″&b″), and are therefore not ambiguous.

(382) a.   Jan speelt [de preludes en etudes   die hij onlangs gecomponeerd heeft].
             Jan plays   the preludes and etudes   which he recently composed has
             'Jan will play preludes and etudes which he has recently composed.'
      a′. de [[[$_{NP}$ preludes] en [$_{NP}$ etudes]]$_i$ die $_i$ hij onlangs gecomponeerd heeft]
      a″. *de [[[$_{NP}$ preludes] en [$_{NP}$ etudes]$_i$ die $_i$ hij onlangs gecomponeerd heeft]]
     b.   De jongens en meisjes die te laat komen,   krijgen straf.
             the boys and girls   who too late come get punishment
             'The boys and the girls who are late will be punished.'
      b′. de [[[$_{NP}$ jongens] en [$_{NP}$ meisjes]]$_i$ die $_i$ te laat komen]
      b″. *de [[[$_{NP}$ jongens] en [$_{NP}$ meisjes]$_i$ die $_i$ te laat komen]]

    Maintain for the moment that, despite their marked status, the primeless examples in (380) are indeed genuinely ambiguous between the coordinated and the non-coordinated antecedent reading. The analysis in (381), according to which the two readings differ in the number of relative clauses involved, can then be supported by the fact that the extraposed relative clause in (383a) is only compatible with the coordinated antecedent reading. The fact that the non-coordinated antecedent reading is excluded is in accordance with the so-called °Coordinate Structure Constraint, according to which extraction cannot take place from a single conjunct of a coordinate structure: the representation in (383b′) is therefore ungrammatical. That the coordinated antecedent reading is possible is due to the fact that the relative clause is associated with both conjuncts: this so-called °Across-the-Board configuration is generally allowed. Observe that (383a) is again marked compared to the construction in which only a single article is present: *Jan zal de preludes en etudes spelen die hij onlangs gecomponeerd heeft*.

(383) a. $^?$Jan zal   de preludes en de etudes spelen die hij onlangs gecomponeerd heeft.
             Jan will the preludes and the etudes play which he recently composed has
             'Jan will play (the) preludes and etudes which he has recently composed.'
     b.   ....[[$_{DP}$ de [$_{NP}$ preludes t_i]] en [$_{DP}$ de etudes t_i]] spelen [$_{RC}$ die ...]$_i$
      b′. *....[[$_{DP}$ de [$_{NP}$ preludes]] en [$_{DP}$ de etudes t_i]] spelen [$_{RC}$ die ...]$_i$

II. Non-restrictive relative clauses

A non-restrictive relative clause following noun phrases coordinated by the conjunction *en* 'and' may also be ambiguous between the coordinated and non-coordinated antecedent reading. This is true both for constructions like (384), where two indefinite plurals are coordinated, and for constructions like (385), where two definite plurals, both containing an article, are coordinated.

(384)   • Coordinated indefinite plurals
  a.   [Katten en honden, die   hier erg geliefd   zijn], zijn toegestaan.
        cats and dogs   which here very popular are   are prt.-allowed
        'Cats or dogs, which are very popular here, are allowed.'
  a′.   Katten en [honden, die hier erg geliefd zijn], zijn toegestaan.
  b.   [Hoeden en wandelstokken, die   toen in de mode waren], zie je niet meer.
         hats and canes   which then fashionable were   see you not more
        'Hats and canes, which used to be fashionable then, are not seen anymore.'
  b′.   Hoeden en [wandelstokken, die ooit in de mode waren], zie je niet meer.

(385)   • Coordinated definite plurals
  a.   [De katten en de honden, die veel overlast veroorzaakten], werden verwijderd.
        the cats and the dogs   which much trouble caused   were removed
        'The cats and the dogs, which caused a lot of inconvenience, were removed.'
  a′.   De katten en [de honden, die veel overlast veroorzaakten], werden verwijderd.
  b.   [De hoeden en de jassen, die oud en versleten waren], werden weggegooid.
        the hats and the coats   which old and worn were   were   thrown.away
        'The hats and the coats, which were old and worn-out, were thrown away.'
  b′.   De hoeden en [de jassen, die oud en versleten waren], werden weggegooid.

As indicated by the bracketing, the non-restrictive relative clauses can either modify
the union of the two sets denoted by the coordinated nouns, as in the primeless
examples, or the set denoted by the noun in the second conjunct, in which case the
first conjunct is not modified; in (384a′), for instance, dogs are said to be very
popular, while no claim is made about cats. Unlike with restrictive relative clauses,
intonation does not really have a disambiguating function. It depends on the context
which reading is favored: out of the blue, many examples may favor the coordinated
antecedent reading, but in examples like (386) the non-coordinated antecedent
reading is clearly favored for extra-linguistic reasons.

(386) a.   Mannen en vrouwen, die vaak worden achtergesteld,   krijgen
            men   and women,   who often are   prt.-discriminated get
            hier evenveel kans.
            here equal   opportunity
            'Men and women, who are often discriminated against, get the same
            opportunities here.'
      b.   De mannen en de vrouwen, die minstens zo geschikt zijn voor dit werk,
            the men   and the women, who at.least   as suited   are for this work
            krijgen hier evenveel kans.
            get   here equal   opportunity
            'The men and the women, who are at least as suitable for this work, get the
            same opportunities here.'

    With non-restrictive clauses, there is no need to appeal to Conjunction
Reduction in order to account for the coordinated antecedent readings: the
antecedent consists of two coordinated phrases that are slightly smaller than a full
DP. This is illustrated for example (385b) in (387a). In (387b), the relative clause

has only the second conjunct in its scope, and we are dealing with coordination of an unmodified DP and a DP modified by a non-restrictive relative clause.

(387) a. Coordinated antecedent reading:
    [$_{DP}$ [[de hoeden] en [de jassen]]$_i$, [$_{RC}$ die $_i$ oud en   versleten waren]] ...
        the hats   and the couats   which old and worn.out were
   b. Non-coordinated antecedent reading:
    [$_{DP}$ de hoeden] en [$_{DP}$ [de jassen]$_i$, [$_{RC}$ die $_i$ oud en versleten waren]] ...

The structures in (387) correctly predict that extraposed non-restrictive relative clauses are compatible with the coordinated antecedent reading only. On the non-coordinated antecedent reading in (387b) the relative clause belongs to the second conjunct; extraposition therefore gives rise to the structure in (388b), which violates the Coordinate Structure Constraint. On the coordinated antecedent reading in (387a), however, the relative clause takes the full coordinated structure as its antecedent; extraposition consequently results in the structure in (388a), which is allowed by the Coordinate Structure Constraint.

(388) a. We hebben [$_{DP}$ [[de hoeden] en [de jassen]]$_i$ t_j] weggegooid,
    we have   the hats   and the coats   away-thrown
    [$_{RC}$ die$_i$ oud en   versleten waren]$_j$.
        which old and worn.out were
   b. *We hebben [[$_{DP}$ de hoeden] en [$_{DP}$ [de jassen]$_i$ t_j]] weggegooid, [$_{RC}$ die$_i$ oud en versleten waren]$_j$.

3.3.2.5.2.2. Coordinated singulars with two determiners

There are two reasons why ambiguity is less likely to arise in the case of coordinated singulars than in the case of coordinated plurals. First, ambiguity will only be possible when the conjuncts have the same gender, given that differences in gender are reflected in the choice of the relative pronoun: whereas *die* is used for singular non-neuter (as well as plural) antecedents, *dat* is used for singular neuter antecedents; cf. Section 3.3.2.2.1. Second, potential ambiguity may be resolved by the number marking on the finite verb of the relative clause when the relative pronoun functions as a subject: the coordinated antecedent reading always triggers plural agreement on the verb. The discussion in this section will be confined to cases that potentially exhibit ambiguity, that is, to cases involving coordinated antecedents with conjuncts of the same gender; discussion of cases in which the conjuncts differ in gender is postponed to Section 3.3.2.5.2.4.

I. Restrictive relative clauses

The examples in (389) show that restrictive relative clauses can restrict coordinated antecedents with multiple indefinite articles. When the relative pronoun functions as the subject of the relative clause, however, ambiguity does not arise: in the primeless examples the plural form of the finite verb of the relative clause (*kwamen* 'came' and *kosten* 'cost') excludes a reading in which the relative clause would modify the second conjunct only. Similarly, the singular form of the finite verb in the primed examples (*kwam* 'came' and *kost* 'costs') forces a reading in which it is only the second conjunct of the coordination that functions as the antecedent.

(389)   • Coordinated indefinite singulars (same gender)

    a.   [Een man en een jongen die te laat kwamen], werden niet toegelaten.
       a man and a boy   who too late came$_{pl.}$ were   not prt.-admitted
       'A man and a boy who were late were not admitted.'

    a′. Een man en [een jongen die te laat kwam], werden niet toegelaten.
       a man   and a boy   who too late came$_{sg.}$ were   not prt.-admitted
       'A man and a boy who was late were no longer admitted.'

    b.   Jan wil [een boek en een CD die twintig euro kosten].
       Jan wants a book and a CD   which twenty euros cost
       'Jan wants a book and a CD which cost twenty euros.'

    b′. Jan wil een boek en [een CD die twintig euro kost].
       Jan wants a book   and a CD   which twenty euros costs
       'Jan wants a book, and a CD which costs twenty euros.'

In cases like (390) with definite coordinated antecedents, many speakers prefer the non-coordinated antecedent reading; the coordinated antecedent reading is only fully acceptable in case of coordinated indefinite singulars. A possible account of this contrast between the primeless examples in (389) and (390) will be given later in this subsection. Recall that the primeless and primed examples differ not only in the number on the finite verb of the relative clause, but also in their intonation pattern; the primed examples are pronounced with an intonation break before the conjunction and accent on the noun of second conjunct.

(390)   • Coordinated definite singulars (same gender)

    a. $^{\%}$[De man en de jongen die te laat kwamen], werden niet toegelaten.
       the man and the boy who too late came   were   not prt.-admitted
       'The man and the boy who were late were no longer admitted.'

    a′. De man en [de jongen die te laat kwam], werden niet toegelaten.
       the man and the boy who too late came   were   not prt.-admitted
       'The man and the boy who was late were no longer admitted.'

    b. $^{\%}$Jan wil [het boek en de CD die twintig euro kosten].
       Jan wants the book and the CD which twenty euros cost
       'Jan wants the book and the CD which together/each cost twenty euros.'

    b′. Jan wil het boek en [de CD die twintig euro kost].
       Jan wants the book and the CD which twenty euros costs
       'Jan wants the book, and the CD which costs twenty euros.'

When the relative pronoun functions as a complement, the form of the finite verb of the relative clause does not help to disambiguate the examples, so that true ambiguity may arise in writing (but not in speech). This is illustrated for indefinite antecedents in the (a)-examples of (391) for direct object relative pronouns and in the (b)-examples for indirect and prepositional object relative pronouns.

(391)   • Coordinated indefinite singulars (same gender)

    a.   [Een man en een jongen die we niet kenden], werden niet toegelaten.
       a man and a boy   who we not knew were   not prt.-admitted
       'A man and a boy who we didn't know were not admitted.'

    a′. Een man en [een jongen die we niet kenden], werden niet toegelaten.

b.   [Een man en een jongen die/aan wie   we onze kaartjes hadden gegeven],
     a man and a boy   who/to whom we our tickets   had   given
     werden niet toegelaten.
     were   not   prt.-admitted
     'A man and a boy who/to whom we had given our tickets were not admitted.'

b′.   Een man en [een jongen die/aan wie we onze kaartjes hadden gegeven],
      werden niet toegelaten.

The examples in (392) show the same for definite antecedents. The percentage signs in the primeless examples indicate again that many speakers prefer the non-coordinated reading in these cases; the coordinated antecedent reading is only fully acceptable in cases of coordinated indefinite singulars.

(392)   • Coordinated definite singulars (same gender)
    a.   %[De man en de jongen die we niet kenden], werden niet toegelaten.
         the man and the boy   who we not knew   were   not   prt.-admitted
         'The man and the boy who we didn't know were not admitted.'
    a′. De man en [de jongen die we niet kenden], werden niet toegelaten.
    b.   %[De man en de jongen aan wie   we onze kaartjes hadden gegeven],
         the man and the boy   to whom we our tickets   had   given
         werden niet toegelaten.
         were   not   prt.-admitted
    b′. De man en [de jongen aan wie we onze kaartjes hadden gegeven], werden
         niet toegelaten.

The non-coordinated antecedent reading of the primed examples above are all unproblematic and may be assumed to involve the structure given in (393b), with the relative clause restricting the second conjunct only. The coordinated antecedent reading of the primeless examples in (391) and (392) can in principle be accounted for by assuming structure (393a), which involves Backward Conjunction Reduction.

(393) a.   Coordinated antecedent reading:
           [$_{DP}$ D [$_{NP}$ [... N ...]$_i$ [$_{RC}$ ~~REL$_i$ ...~~]]] and [$_{DP}$ D [$_{NP}$ [... N ...]$_j$ [$_{RC}$ REL$_j$ ...]]]
      b.   Non-coordinated antecedent reading:
           [$_{DP}$ D [$_{NP}$ [... N ...]]] and [$_{DP}$ D [$_{NP}$ [... N ...]$_j$ [$_{RC}$ REL$_j$ ...]]]

Assuming structure (393a) to account for the coordinated antecedent reading of the primeless examples in (389) and (390) is, however, problematic. First observe that the Conjunction Reduction analysis in (393a) is excluded for the primeless examples in (389) and (390); the presence of the plural finite verb in the relative clause requires a plural antecedent, so that the relative clause cannot be interpreted as restricting the coordinated singular conjuncts separately. The representations in (394) must therefore be dismissed as ungrammatical due to the number mismatch between the relative subject pronoun and the finite verb of the relative clause.

(394) a.   *[Een/de man   [$_{RC}$ ~~die te laat kwamen~~]] en
           [een/de jongen [$_{RC}$ die te laat kwamen]], werden niet meer toegelaten.
      b.   *Jan wil [het boek [$_{RC}$ ~~die twintig euro kosten~~]] en
                   [de CD   [$_{RC}$ die twintig euro kosten]].

The agreement facts thus show that the relative pronoun *die* is plural in the primeless examples in (389) and (390). This is furthermore supported by the fact illustrated in (395) that we can add elements like *allebei* 'both', *samen* 'together' or *elk* 'each' to the relative clauses, which all require the presence of a plural subject.

(395) a. [Een man en een jongen die beiden te laat   kwamen], werden niet toegelaten.
            a man and a boy   who both too late came   were not prt.-admitted
            'A man and a boy who were both late were not admitted.'
     b. Jan wil   [een boek en een CD die   samen/elk   twintig euro kosten].
            Jan wants a book and a CD   which together/each twenty euros cost
            'Jan wants a book and a CD which cost twenty euros together/each.'

In short, the facts in (394) and (395) constitute a serious problem for the proposal that multiple determiners can only occur in restrictive relative constructions derived by means of Backward Conjunction Reduction. This casts considerable doubt on the feasibility of the analysis in (393a), and one might want to completely reject this analysis by pointing out that it is in fact not available, given that the sentences with definite antecedents are consistently considered degraded (or at least marked) by many speakers. Rejecting the analysis in (393a) would still leave us with the fact that the sentences with indefinite antecedents are impeccable, but this could be solved by appealing to a difference in status between the definite and indefinite determiners: it has often been assumed that indefinite articles are actually not determiners but belong to the class of numerals (note in this connection that the indefinite examples in (389a&b) are also acceptable when the indefinite articles are replaced by the cardinal numeral *één* 'one'). If so, one might try to develop an account according to which a restrictive relative clause may take a NumP, but not a DP, in its scope; cf. Section 1.1.2.2.1, example (6).

   Leaving these issues to future research, we want to conclude this subsection by pointing out that, just like in the case of coordinated plurals, extraposition of the relative clause is possible on the coordinated antecedent reading only. Consider the examples in (396). The unacceptability of the non-coordinated antecedent reading in (396b) is due to the fact that the relative clause is part of the second conjunct so that extraposition would violate the °Coordinate Structure Constraint. The acceptability of the coordinated antecedent reading in (396a) follows both under a Conjunction Reduction analysis and under the alternative analysis suggested above that the relative clause takes some higher projection in the noun phrase (NumP) as its antecedent: in the former case we would be dealing with licit °Across-the-Board movement, and in the latter case extraposition could proceed without violating the Coordinate Structure Constraint.

(396) a. Ik heb [[een regisseur] en [een acteur]]ᵢ gekend [_RC_ dieᵢ een Oscar hebben gekregen].
            I have a director and an actor   known   who an Oscar have won
     b. *Ik heb [[een regisseur] en [een acteur]]ᵢ gekend [_RC_ dieᵢ een Oscar heeft gekregen].
            I have a director and an actor   known   who an Oscar has won

The unacceptability of (397b) again follows from the Coordinate Structure Constraint: the relative clause is part of the second conjunct and therefore extraposition is blocked. Example (397a) poses the same problem as the primeless

examples in (390) and (392), and for this reason we will not discuss this example any further.

(397) a.   [%]Ik heb [[de regisseur en de acteur]]ᵢ gezien [RC dieᵢ een Oscar hebben gekregen].
      I have the director and the actor   seen   who an Oscar have won

    b. *Ik heb [[de regisseur] en [de acteur]ᵢ] gezien [RC dieᵢ een Oscar heeft gekregen].
       I have the director and the actor   seen   who an Oscar has won

II. Non-restrictive relative clauses

Using non-restrictive clauses to modify coordinated antecedents is fully acceptable. As in the case of restrictive relative clauses, ambiguity does not arise when the relative pronoun functions as the subject of the relative clause given that the number marking on the finite verb unambiguously shows which reading is intended: in the (a)-examples of (398) and (399) the plural form *kwamen* 'came' excludes a reading in which the relative clause would modify the second conjunct only, and the singular form *kwam* 'came' in the (b)-examples only allows a reading in which it is only the second conjunct that functions as the antecedent.

(398)   • Coordinated indefinite singulars (subject)
    a. [Een man en een jongen, die te laat kwamen], werden niet toegelaten.
       a man and a boy   who too late came   were   not prt.-admitted
       'A man and a boy, who were late, were not admitted.'
    b. Een man en [een jongen, die te laat kwam], werden niet toegelaten.
       a man   and a boy   who too late came   were   not prt.-admitted
       'A man and a boy, who was late, were not admitted.'

(399)   • Coordinated definite singulars (subject)
    a. [De man en de jongen, die te laat kwamen], werden niet toegelaten.
       the man and the boy   who too late came   were   not prt.-admitted
       'The man and the boy, who were late. were not admitted.'
    b. De man en [de jongen, die te laat kwam], werden niet toegelaten.
       the man and the boy   who too late came   were   not prt.-admitted
       'The man and the boy, who was late, were not admitted.'

When the relative pronoun functions as the object of the relative clause, it does not affect the form of the finite verb, and true ambiguity may arise. This is illustrated for definite noun phrases: the (a)-examples in (400) involve direct object relative pronouns and the (b)-examples involve indirect object relative pronouns introduced by the preposition *aan*. The status of the examples does not change when we replace the indefinite articles by indefinite ones.

(400)   • Coordinated singulars (object pronoun)
- a.   [De man en de jongen, die we niet kenden], werden niet toegelaten.
      the man and the boy who we not knew   were   not prt.-admitted
      'The man and the boy, who we didn't know, were not admitted.'
- a′. De man en [de jongen, die we niet kenden], werden niet toegelaten.
- b.   [De man en de jongen, aan wie we onze kaartjes hadden gegeven], werden ...
      the man and the boy to whom we our tickets   had   given   were
      'The man and the boy, to whom we had given our tickets, were not admitted.'
- b′. De man en [de jongen, aan wie we onze kaartjes hadden gegeven], werden ...

The coordinated antecedent reading can be represented with the relative clause modifying the full coordinated DP, while the non-coordinated antecedent reading can be represented with the relative clause modifying only the second DP. This is illustrated in (401) for the examples in (399); cf. the discussion of (387).

(401) a.   Coordinated antecedent reading:
      [$_{DP}$ [[de man] en [de jongen]]$_i$, [$_{RC}$ die $_i$ te laat kwamen]] ...
- b.   Non-coordinated antecedent reading:
      [$_{DP}$ de man] en [$_{DP}$ [de jongen]$_i$, [$_{RC}$ die$_i$ te laat kwam]] ...

3.3.2.5.2.3. Coordinated antecedents with a single article

This section discusses cases in which one article serves to modify the two conjuncts together. We will again discuss modification by restrictive and the non-restrictive relative clauses in separate sections.

I. Restrictive relative clauses

Restrictive relative clauses may also modify coordinated noun phrases that are construed with a single article. We have already seen that in a subset of these cases, the construction with a single article is preferred to corresponding constructions with two articles.

A. Plural conjuncts

Examples (402a&a′) show that when a coordinated noun phrase containing only one article is relativized, the coordinated antecedent reading is normally strongly preferred to the non-coordinated one. The non-coordinated antecedent reading is only possible (and then still somewhat marked) when the second conjunct is given a generic interpretation, as in (402b′), which requires that the second conjunct be given extra emphasis.

(402)   • Coordinated plurals with one definite article
- a.   De [mannen en jongens die te laat kwamen], werden niet toegelaten.
      the men and boys   who too late came   were   not prt.-admitted
      'The men and boys who were late were not admitted.'
- a′. *De mannen en [jongens die te laat kwamen], werden niet toegelaten.

b.   De [mannen en jongens die te laat komen], worden niet toegelaten.
      the men and boys   who too late come   are   not prt.-admitted
      'The men and boys who are late will not be admitted.'

b′. $^?$De mannen en [JONGENS die te laat komen], worden niet toegelaten.

Note that the coordinated antecedent reading in the primeless examples can be derived without appealing to Backward Conjunction Reduction given that the coordination does not take place at the level of the DP, but at some lower level in the NP-domain. This is illustrated for example (402a) in (403).

(403)   Coordinated antecedent reading with one article:
        [$_{DP}$ de [$_{NP}$ [mannen en jongens]$_i$ [$_{RC}$ die$_i$ te laat kwamen]]] ...

Where only the second conjunct is preceded by an article, as in (404), a coordinated antecedent reading is excluded: only the non-coordinated antecedent reading in (404b) is available, meaning that all men, and the boys who are late, will be denied admission.

(404) a. *[Mannen en de jongens die te laat komen], worden niet toegelaten.
        men and the boys   who too late come   are   not prt.-admitted

     b. Mannen en [de jongens die te laat komen], worden niet toegelaten.

Since the article is not overtly expressed in indefinite plurals, there is no point in trying to distinguish between a one- and a two-article reading. However, if numerals are used instead of the zero-article, the distinction does become relevant. The coordinated antecedent reading in (405a), according to which the noun phrase refers to a set of four persons, consisting of both men and boys, is clearly preferred to the non-coordinated antecedent reading, in (405b), according to which there is a set of four men and a non-qualified set of boys, which is restricted by the relative clause.

(405)   • Coordinated indefinite plurals with one numeral
     a. [Vier mannen en jongens die te laat kwamen], werden niet toegelaten.
        four men and boys   who too late came   were   not prt.-admitted
        'Four men and boys who were late were not admitted.'

     b. *Vier mannen en [jongens die te laat kwamen], werden niet toegelaten.

With example (406b) we aim at triggering a generic reading of the noun phrase *jongens*. The fact that this example is degraded is probably due to the fact that this is only possible when the first conjunct is also interpreted generically, which is blocked by the presence of the numeral *vier* 'four'; when this numeral is dropped the example becomes fully acceptable with the intonation pattern that is typical for the non-coordinated antecedent reading. Note in passing that, in contrast to (405a), the non-generic example in (406a) seems to require a partitive reading, which may be due to the fact that the sentence has a future interpretation, so that at the moment of speech it is still unknown how many men and boys will actually be late.

(406) a. [Vier mannen en jongens die te laat komen], worden niet toegelaten.
        four men and boys   who too late come   are   not prt.-admitted
        'Four men and boys who are late will not be admitted.'

     b. $^{??}$Vier MANNEN en [JONGENS die te laat komen], worden niet toegelaten.

Like with the definite article, a coordinated antecedent reading is not possible when only the second conjunct is preceded by a numeral, as in (407); only the non-coordinated antecedent reading in (407b) is available, meaning that all man, and four boys who were late, were denied admission.

(407) a. *[Mannen en vier jongens die te laat   kwamen], werden niet toegelaten.
            men and four boys   who too late came   were   not prt.-admitted
      b.   Mannen en [vier jongens die te laat kwamen], werden niet toegelaten.

B. Singular conjuncts

Leaving out the second article gives rise to a degraded result both with indefinite and definite singular antecedents. This is not related to the presence of the relative clause, since we see the same thing in examples like *[*?]Een/de man en jongen werden niet toegelaten* and *[*?]Jan las een boek en artikel*. Insofar as the examples in (408) are acceptable, they seem to be interpreted with a coordinated antecedent reading: the non-coordinated antecedent reading is completely excluded. Observe that gender of the nouns does not play a role since the gender of the conjuncts is the same: non-neuter in (408a) and neuter in (408b). Nor is the syntactic function of the modified noun phrase relevant: it functions as a subject in (408a) and as an object in (408b). The reason for the degraded status of the primeless examples must therefore be that a single determiner cannot be used to modify two singular nouns.

(408)   • Coordinated singulars with one (in)definite article
      a.   [*?][Een/De man en jongen die te laat   kwamen], werden niet toegelaten.
             a/the man and boy   who too late came   were   not prt.-admitted
      a′. *Een/De man en [jongen die te laat kwam], werden niet toegelaten.
      b.   [*?]Jan las   [een/het boek en artikel die   over taalkunde gingen].
             Jan read   a/the book and article   which about linguistic went
             'Jan read a/the book and an/the article which were about linguistics.'
      b′. *Jan las een/het boek en [artikel die over taalkunde gingen].

C. A special case: the singular reference reading

Now that we have considered the normal case where coordination results in a plural noun phrase, a special case must be discussed involving coordinated singular elements, in which the conjuncts need not refer to two different entities. In example (409a), for instance, the coordinated structure must be interpreted as referring to a single (nonspecific) person. With the second determiner present, as in example (409′), on the other hand, the only available interpretation is that in which only the second conjunct is modified by the relative clause.

(409)   • Singular reference reading of coordinated nonspecific [+HUMAN] antecedents
      a.   [een manager en IT-deskundige die bekend is met de laatste ontwikkelingen]
             a manager and IT-expert   who familiar is with the latest developments
             '[We want] a manager and IT-expert who is familiar with the latest developments.'
      b.   een manager en [een IT-deskundige   die bekend is met de laatste ontwikkelingen]
             a manager   and an IT-expert   who familiar is with the latest developments
             '[We want] a manager and an IT-expert who is familiar with the latest developments.'

Example (410) shows that the same contrast appears in the case of a coordinated antecedent with specific reference, although the singular reference reading in (410a) may be slightly marked. Example (411) shows that the singular reference reading is also less readily available with [-HUMAN] referents.

(410)   • Singular reference reading of coordinated specific [+HUMAN] antecedents
    a.   [?]Ik ken [een regisseur en acteur die een Oscar heeft gekregen].
       I   know a director and actor   who an Oscar has   won
       'I know a director and actor who has won an Oscar.'
    b.   Ik ken   een regisseur en [een acteur die een Oscar heeft gekregen].
       I   know a director   and an actor   who an Oscar has   won
       'I know a director and an actor who has won an Oscar.'

(411)   • Singular reference reading of coordinated [-HUMAN] antecedents
    a.   ^{??}Ik zoek [een werkplaats en woning die   groot genoeg is].
       I   search a workshop and apartment which big enough   is
    b.   Ik zoek   een werkplaats en [een woning die   groot genoeg is].
       I   search a workshop   and an apartment which big enough   is
       'I am looking for a workshop and an apartment which is big enough.'

    The examples in (412) show that the singular reference reading of coordinated antecedents is also available in the case of a definite determiner. Observe that in accordance with the fact that the coordinated antecedent has only one referent, the finite verb of the main clause in (412a) appears in the singular form *moet* 'has to'. In (412b), where the subject consists of two separate DPs, the finite verb of the main clause appears in the plural form *moeten* 'have to'. As usual, the (b)-example is ambiguous for some people between a coordinated and non-coordinated antecedent reading.

(412) a.   [De manager en IT-deskundige die we zoeken], moet ervaring   hebben.
       the manager and IT-expert   who we search   must experience have
       'The manager and IT-expert we are looking for must be experienced.'
    b.   De manager en de IT-deskundige die we zoeken, moeten ervaring hebben.
       the manager and the IT-expert who we search   must   experience have
       'The manager and the IT-expert we are looking for must be experienced.'

When the modified noun phrase functions as the object of the clause, we find the same contrast, although now the number marking on the verb does not help in distinguishing the two readings. The example in (413) is ambiguous between the singular reference reading, with the structure in (413a), and the non-coordinated antecedent reading, with the structure in (413b). Note that the coordinated antecedent reading is excluded by the fact that the relative pronoun triggers singular agreement on the finite verb of the relative clause.

(413) a.   Ik ken   [de regisseur en acteur die   beroemd is geworden als Hamlet].
           I know   the director and actor   who famous   is become   as Hamlet
           'I know the director and actor who has become famous as Hamlet.'
      b.   Ik ken   de regisseur en [de acteur die   beroemd is geworden als Hamlet].
           I know   the director   and the actor who famous   is become   as Hamlet
           'I know the director and the actor who has become famous as Hamlet.'

The structure of the examples with the singular reference reading is as given in (414), where the relative pronoun takes some lower coordinated nominal projection as its antecedent.

(414)   Singular reference reading:
           $[_{DP}$ D $[_{NP}$ [... N_{sg} ... and ... N_{sg} ...]$_i$ $[_{RC}$ REL_i ...]]] ...

This structure immediately accounts for the fact that extraposition of the relative clause is possible; since the two coordinated elements act as the antecedent of the relative clause, extraposition does not violate the °Coordinate Structure Constraint. In this respect, relative constructions with a singular reference reading behave just like constructions with a non-restrictive relative clause; cf. 3.3.2.5.2.1, sub II.

(415) a.   Ik heb [een regisseur en acteur]$_i$ gekend $[_{RC}$ die$_i$ een Oscar heeft gekregen].
           I have   a director and actor   known   who an Oscar   has   won
           'I have known a director and actor who has won various Oscars.'
      b.   Ik heb [de regisseur en acteur]$_i$ gezien $[_{RC}$ die$_i$ een Oscar heeft gekregen].
           I have the director and actor   seen   who an Oscar   has   won
           'I have seen the director and actor who has won an Oscar.'

II. Non-restrictive relative clauses

Non-restrictive relative clauses can also modify a coordinated antecedent with a single article, and often behave in similar ways as their restrictive counterparts, although the discussion below will show that there are a number of differences.

A. Plural conjuncts

When the coordination involves plural elements, the coordinated antecedent reading is the most readily available one; the non-coordinated antecedent reading is at best marginally possible on a (very unlikely) generic interpretation. Due to the past tense such a generic interpretation is not available in (416a′), and for that reason, the non-coordinated antecedent reading is completely excluded. The present tense in the two (b)-examples favors a generic reading, but nevertheless the non-coordinated antecedent reading is very hard to obtain.

(416)   • Coordinated plurals with one definite article
      a.   [De katten en honden, die overlast veroorzaakten],   werden niet toegelaten.
           the cats and dogs   which inconvenience caused   were not prt.-admitted
           'The cats and dogs, which caused a lot of inconvenience, were not admitted.'
      a′. *De katten en [honden, die overlast veroorzaakten], werden niet toegelaten.

    b.   [De katten en honden,   die overlast veroorzaken],   worden niet toegelaten.
         the cats and dogs   which inconvenience cause are not prt.-admitted
         'The cats and dogs, which cause a lot of inconvenience, are not admitted.'
    b′. *?De katten en [HONDEN, die overlast veroorzaken], worden niet toegelaten.

The coordinated antecedent reading in the primeless examples can again be derived without appealing to Backward Conjunction Reduction. The only difference between these examples the structure in (403) is that herecoordination takes place not at the NP-level, but at some higher level within the DP. This is illustrated for the primeless examples in (416) in (417).

(417)   Coordinated antecedent reading with one article:
          [$_{DP}$ de [$_{NP}$ katten en honden]$_i$ [$_{RC}$ die$_i$ veel overlast veroorzaakten]]] ...

    Where only the second conjunct is preceded by an article, a coordinated antecedent reading is not possible. The non-coordinated antecedent reading is, again, quite degraded.

(418) a. *[Katten en de honden,   die overlast veroorzaken],   worden niet toegelaten.
          cats and the dogs   which inconvenience cause are not prt.-admitted
         'The cats and dogs, which cause a lot of inconvenience, are not admitted.'
    b. *?Katten en [de honden, die overlast veroorzaken], worden niet toegelaten.

    Since in plural indefinite noun phrases the article is not overtly expressed, there is no point in trying to distinguish between a one-article and a two-article reading. However, if numerals are used instead of the zero-article, the distinction does become relevant. This is illustrated in (419). Only the coordinated antecedent reading in (419a) is available, according to which the antecedent refers to a set of four persons, consisting of both men and boys; it is this entire set that is subsequently restricted by the restrictive relative clause. On the unavailable non-coordinated antecedent reading in (419b), it would be claimed that there is a set of four men and a non-qualified set of boys, where only the latter set is modified by the relative clause.

(419)   • Coordinated indefinite plurals with one numeral
    a. [Vier mannen en jongens, die (allen) te laat kwamen], werden niet toegelaten.
        four men and boys   who all   too late came   were not prt.-admitted
        'Four men and boys, who were (all) late, were not admitted.'
    b. *Vier mannen en [jongens, die te laat kwamen], werden niet toegelaten.

    The generic example in (420b) is degraded, just like the corresponding case with a restrictive relative clause, which can probably be attributed to the fact that the first conjunct *vier mannen* must also be interpreted generically, which is incompatible with the presence of the numeral. In contrast to the corresponding example in (405b) with a restrictive relative clause, (420a) does not seem to allow a partitive interpretation, which may be due to the fact that at the moment of speech time it is still not known how many men and boys will be late so that the reader is actually not able to provide additional information about the referent set.

(420) a. *[Vier mannen en jongens, die te laat komen], worden niet toegelaten.
        four men and boys   who too late come are   not prt.-admitted
        'Four men and boys, who are late, will not be admitted.'
    b. ??Vier mannen en [JONGENS, die te laat komen], worden niet toegelaten.

If only the second conjunct is preceded by a numeral, as in (421), neither the coordinated nor the non-coordinated antecedent reading is available.

(421) a. *[Mannen en vier jongens, die te laat kwamen], werden niet toegelaten.
        men and four boys   who too late came   were   not prt.-admitted
    b. *Mannen en [vier jongens, die te laat kwamen], werden niet toegelaten.

B. Singular conjuncts

Where the conjuncts are singular, non-restrictive relative clauses do not differ from restrictive ones. Leaving out the second article gives rise to a severely degraded result, both with indefinite and with definite singular antecedents. This is not due to the presence of the relative clause, since we observe the same thing in examples like *?Een/de hond en kat werden niet toegelaten*. To the extent that example (422a) is acceptable, it must be interpreted with a coordinated antecedent reading, which is signaled by the plural finite verb in the relative clause: the non-coordinated antecedent reading in (422b), which is signaled by a singular finite verb in the relative clause, is completely excluded.

(422)   • Coordinated singulars with one indefinite or definite article
    a. *?[Een/de kat en hond, die veel overlast veroorzaken], worden niet toegelaten.
        a/the cat and dog   which much inconvenience cause are not prt.-admitted
        'A/the cat and dog, which cause a lot of inconvenience, are not admitted.'
    b. *Een/de kat en [hond, die veel overlast veroorzaakt], worden niet toegelaten.

C. A special case: the singular reference reading

As in the case of restrictive relative clauses, the two elements of the antecedent need not refer to two different entities when the second conjunct is not preceded by an article. The coordinated antecedent in (423a), for instance, can only be interpreted as denoting a single (nonspecific) person. With the second determiner present, as in (423b), on the other hand, the only available interpretation is that in which only the second conjunct is modified by the relative clause.

(423)   • Singular reference reading of coordinated nonspecific [+HUMAN] antecedents
    a. We zoeken [een schrijver en redacteur, die verstand heeft van opmaak].
        we search a writer and editor   who knowledge has of layout
        'We are looking for a writer and editor, who must know about layout.'
    b. We zoeken een schrijver en [een redacteur, die verstand heeft van opmaak].
        we search a writer   and an editor   who knowledge has of layout
        'We are looking for a writer and an editor, who must know about layout.'

The examples in (424) show that the same contrast seems to appear in the case of a coordinated antecedent with specific reference, although the singular reference reading in (424a) is slightly marked. Example (425a) serves to show that singular reference readings are less readily available with [-HUMAN] referents.

(424)   • Singular reference reading of coordinated specific [+HUMAN] antecedents
  a. ?Ik ken [een regisseur en acteur, die bovendien scenario's schrijft].
      I know a director and actor   who moreover scenarios writes
      'I know a director and actor, who writes scenarios as well.'
  b. Ik ken   een regisseur en [een acteur, die bovendien scenario's schrijft].
      I know   a director   and an actor   who moreover scenarios writes
      'I know a director and an actor, who writes scenarios as well.'

(425)   • Singular reference reading of coordinated [-HUMAN] antecedents
  a. ??Ik zoek   [een werkplaats en woning, die   groot genoeg is].
      I search a workshop and apartment which big enough   is
  b. Ik zoek   een werkplaats en [een woning, die   groot genoeg is].
      I search a workshop   and an apartment which big enough   is
      'I am looking for a workshop and an apartment, which is big enough.'

The examples in (426) show that the singular reference reading of coordinated antecedents is also available in the case of a definite determiner. In accordance with the fact that the coordinated antecedent has only one referent, the finite verb of the main clause (426a) appears in the singular form *won* 'won'. In (426b), where the subject consists of two separate DPs, the finite verb of the main clause appears in the plural form *wonnen* 'won'.

(426) a.   [De regisseur en producent, die deze film maakte], won   drie Oscars.
           the director and producer   who this film   made   won$_{sg.}$ three Oscars
           'The director and producer, who made this film, won three Oscars.'
  b.   De regisseur en [de producent, die deze film maakte], wonnen drie Oscars.
       the director and   the producer   who this film made   won$_{pl.}$ three Oscars
       'The director and the producer, who made this film, won three Oscars.'

We find the same contrast when the noun phrase functions as the object of the clause, although the number marking on the finite verb in the main clause does not help in distinguishing the two cases: (427a) has the singular reference reading, and (427b) has the non-coordinated antecedent reading. Note that the coordinated antecedent reading is excluded in (427b) by the fact that the relative pronoun triggers singular agreement on the finite verb of the relative clause.

(427) a.   De politie arresteerde [de dief en oplichter, die zich hevig verzette].
           the police arrested   the thief and swindler who REFL. fiercely resisted
           'The police arrested the thief and swindler, who resisted fiercely.'
  b.   De politie arresteerde de dief en [de oplichter, die zich hevig verzette].
       the police arrested   the thief and the swindler   who REFL. fiercely resisted
       'The police arrested the thief, and the swindler, who resisted fiercely.'

The structure of the examples with the singular reference reading is as given in (428), which differs from the one in (414) involving restrictive relative clauses in that the relative pronoun is external to NP and takes some higher coordinated nominal projection as its antecedent.

(428)   Singular reference reading:
        [$_{DP}$ D [$_{NP}$ ... N$_{sg}$ ... and ... N$_{sg}$ ...]$_i$, [$_{RC}$ REL$_i$ ...]] ...

This structure accounts for the fact that extraposition of the non-restrictive relative clause is possible; since the two coordinated elements act as the antecedent of the relative clause, extraposition does not violate the Coordinate Structure Constraint.

(429) a. $^?$Ik heb [een regisseur en acteur]$_i$ ontmoet, die$_i$ een Oscar heeft gekregen.
        I have a director and actor   met   who an Oscar has won
        'I met a director and actor yesterday, who has won various Oscars.'
    b. Ze hebben [de dief en oplichter]$_i$ gearresteerd, die$_i$ zich hevig verzette.
        they have the thief and swindler arrested   who REFL fiercely resisted
        'They managed to arrest the thief and swindler, who resisted fiercely.'

3.3.2.5.2.4. Mixed antecedents

This section will be concerned with coordinated antecedents the conjuncts of which differ with regard to gender, number, definiteness or quantificational properties. These constructions are often not ambiguous, since the form of the relative pronoun or the finite verb of the relative clause may dissolve potential ambiguities.

I. Gender

A. Restrictive relative clauses

When the two conjuncts of a coordinated antecedent are singular, ambiguity between the coordinated and non-coordinated antecedent reading will not arise when the relative pronoun functions as the subject of the relative clause, since the number marking on the finite verb of the relative clause will then have a disambiguating function; cf. Section 3.3.2.5.2.2. If the two conjuncts differ in gender, the difference between the two readings becomes even clearer, since in that case differences in gender are directly reflected in the choice of the relative pronoun: whereas *dat* is used for neuter singular antecedents, *die* is in all other cases. Thus in example (430a), both the form *die* of the relative pronoun and the plural finite verb of the relative clause exclude a reading in which the relative clause would modify the neuter singular noun *meisje* only, since this noun would require the pronoun *dat* and trigger singular agreement on the finite verb in the relative clause, as in example (430a′). The same thing is true of the examples in (430b&b′), where the potential ambiguity is also resolved on the basis of the form of the relative pronoun and the finite verb in the relative clause.

(430)   • Coordinated indefinite singulars with different gender
    a. [Een jongen en een meisje die te laat kwamen], kregen straf.
        a boy and a girl   who too late came   got   punishment
        'A boy and a girl who were both late were punished.'
    a′. Een jongen en [een meisje dat te laat kwam], kregen straf.
        a boy   and a girl   who too late came   got   punishment
        'A boy and a girl who was late were punished.'

    b.   Ik heb gesproken met [een jongen en een meisje die naast me   wonen].
        I have spoken   with a boy and a girl   who next.to me live
        'I have spoken with a boy and a girl who live next to me.'
    b′. Ik heb gesproken met een jongen en [een meisje dat naast me   woont].
        I have spoken   with a boy   and a girl   who next.to me lives
        'I have spoken with a boy and a girl who lives next to me.'

When we replace the indefinite article by a definite one, the result of coordinated antecedent reading in the primeless examples is degraded for many speakers.

(431)   • Coordinated definite singulars with different gender
    a.   [%][De jongen en het meisje die te laat   kwamen], kregen straf.
         the boy and the girl   who too late came   got   punishment
        'The boy and the girl who were both late were punished.'
    a′. De jongen en [het meisje dat te laat kwam], kregen straf.
        the boy   and the girl   who too late came got   punishment
        'The boy and the girl who was late were punished.'
    b.   [%]Ik heb gesproken met [de jongen en het meisje die naast me   wonen].
        I have spoken   with the boy and the girl   who next.to me live
        'I have spoken with the boy and the girl who live next to me.'
    b′. Ik heb gesproken met de jongen en   [het meisje dat naast me   woont].
        I have spoken   with the boy and   the girl   who next.to me lives
        'I have spoken with the boy and the girl who lives next to me.'

Note that the primeless examples in (431) create problems for the Backward Conjunction Reduction analysis similar to those we have encountered in Section 3.3.2.5.2.2. According to this analysis these examples have the structure in (432), but there are at least two reasons to assume that these structures are ungrammatical. First, the presence of a plural finite verb in the relative clause requires a plural subject, and since it is the relative pronoun that performs this syntactic function, this pronoun cannot take a singular antecedent. Second, the form *die* of the relative pronoun excludes a structure in which the relative clause restricts the two coordinated elements separately since it cannot take the neuter singular noun *meisje* as its antecedent. We will not pursue the question of how constructions of this type can be adequately represented, but refer to Section 3.3.2.5.2.2 for relevant discussion.

(432) a. *[De jongen [~~die te laat kwamen~~]] en
        [het meisje [die te laat kwamen]], kregen straf.
     b. *Ik heb gesproken met [de jongen [_{RC} ~~die naast me wonen~~]] en
                       [het meisje [_{RC} die naast me wonen]].

    The discussion above does not, of course, imply that Backward Conjunction Reduction is entirely excluded when the two conjuncts differ in gender. Conjunction reduction is, however, restricted such that the omitted part is completely identical to the second part, as in the primeless examples in (433). Although these examples are rather complex from a perceptual point of view and are more likely to be found in written text than in speech, they seem well-formed. The most plausible analysis for these examples is as given in the primed examples,

where *part of* the first relative clause is omitted as the result of Backward Conjunction Reduction.

(433) a.   Een/De jongen die en   een/het meisje dat te laat kwam,   kregen straf.
            a/the boy   who and a/the girl   who too late came, got punishment
       a′. [Een/de jongen [die ~~te laat kwam~~]] en
            [een/het meisje [dat te laat kwam]], kregen straf.
       b.   Ik sprak met een/de jongen die en   met een/het meisje dat naast me woont.
            I spoke with a/the boy who   and with a/the girl that   next.to me lives
       b′. Ik sprak met [een/de jongen [$_{RC}$ die ~~naast me woont~~]] en
                         [een/het meisje [$_{RC}$ dat naast me woont]].

Section 3.3.2.5.2.3 has shown that in those cases where the second conjunct is not preceded by an article, a coordinated antecedent may have a single reference reading. The examples in (434) show, however, that this requires that the two conjuncts have the same gender: the diminutive neuter noun *vriendje* 'friend' and the non-neuter noun *kameraad* 'pal' cannot share the same relative clause, as they require different relative pronouns, although it must be noted that those constructions in which the relative pronoun matches the gender of the second conjunct seem slightly better than those in which it matches the gender of the first one.

(434) a.   Ik zoek een [vriendje en kameraad]$_i$ $^{??}$die$_i$/*dat$_i$ dezelfde hobby heeft als ik.
            I search a   friend and pal   who   the.same hobby has   as I
            'I'm looking for a friend and pal who has the same hobby I have.'
       b.   Ik zoek een [kameraad en vriendje]$_i$ $^{??}$dat$_i$/die$_i$ dezelfde hobby heeft als ik.

Of course, the examples in (434) become fully grammatical with the relative pronoun *die*, when we replace the diminutive form *vriendje* by the non-neuter form *vriend*: cf. *Ik zoek een vriend en kameraad die dezelfde hobby heeft als ik* and *Ik zoek een kameraad en vriend die dezelfde hobby heeft als ik*.

B. Non-restrictive relative clauses

Non-restrictive relative clauses also allow the two elements of a coordinated antecedent to differ in gender. If the two elements are singular and the second conjunct is headed by a neuter noun, as in (435), the difference between the coordinated and non-coordinated antecedent reading can be detected on the basis of the choice of the relative pronoun: *die* is used for [-NEUTER] and *dat* is used for [+NEUTER] singular antecedents. In the primeless examples in (435), the form *die* of the relative pronoun (as well as the plural form of the finite verb of the relative clause) exclude a reading in which the relative clause would modify the second conjunct only. In the primed examples, the presence of the singular [+NEUTER] pronoun *dat* (as well as the singular form of the finite verb of the relative clause) forces the non-coordinated reading, in which the relative clause takes the neuter noun *meisje* as its antecedent.

(435)   • Coordinated definite and indefinite singulars (different gender)
     a.   [Een/De jongen en een/het meisje, die te laat kwamen], kregen straf.
         a/the boy and a/the girl   who too late came   got punishment
         'A/The boy and a/the girl, who were both late, were punished.'
     a′. Een/De jongen en   [een/het meisje, dat te laat kwam], kregen straf.
         a/the boy   and a/the girl   who too late came got punishment
         'A/The boy and a/the girl, who was late, were punished.'
     b.   Ik ontmoette [een/het jongen en een/het meisje, die naast me bleken te wonen].
         I met   a/the boy and a/the girl   who next.to me proved to live
         'I have spoken with a/the boy and a/the girl, who turned out to live next to me.'
     b′. Ik ontmoette een/de jongen en   [een/het meisje, dat naast me bleek te wonen].
         I met   a/the boy   and a/the girl,   who next.to me proved to live

Section 3.3.2.5.2.3 has shown that coordinated antecedents preceded by a single article with a single reference reading can be modified by a non-restrictive clause. The examples in (436) show that, just as in the case of non-restrictive relative clauses in (434), the two conjuncts must have the same gender: the neuter noun *vriendje* 'friend' and the non-neuter noun *kameraad* 'pal' cannot share the same relative clause, as they require different relative pronouns. Again, these examples become fully grammatical when we replace the diminutive form *vriendje* by the neuter form *vriend*.

(436) a.   Ik zoek een vriendje en kameraad, [?]die/*dat dezelfde hobby heeft als ik.
         I search a friend_dim and pal   who   the.same hobby has as I
         'I'm looking for a friend and pal, who has the same hobby I have.'
     b.   Ik zoek een kameraad en vriendje, [??]dat/*die dezelfde hobby heeft als ik.

II. Number

A. Restrictive relative clauses

When the conjuncts differ in number and the relative pronoun functions as the subject of the relative clause, as in (437), the relative order of the conjuncts may have a disambiguating effect. The (a)-examples show that when the plural conjunct precedes the singular one, the form of the finite verb in the relative clause dissolves the potential ambiguity: when it is plural we are dealing with the coordinated antecedent reading; when it is singular we are dealing with the non-coordinated antecedent reading. If, on the other hand, the singular element precedes the plural element, ambiguity does arise: since only the plural form of the verb is allowed, both the coordinated and the non-coordinated antecedent reading are possible. Note that, as usual, intonation will serve to disambiguate the two readings in speaking.

(437)   • Coordinated indefinite phrases with different number
     a.   [Twee mannen en een jongen die te laat kwamen], werden niet toegelaten.
         two men and a boy   who too late came   were not prt.-admitted
         'Two men and a boy who were late were not admitted.'
     a′. Twee mannen en [een jongen die te laat kwam], werden niet toegelaten.
     b.   [Een man en twee jongens die te laat kwamen], werden niet toegelaten.
         a man and two boys   who too late came were   not prt.-admitted
     b′. Een man en [twee jongens die te laat kwamen], werden niet toegelaten.

For many speakers the coordinated antecedent reading is less acceptable in the case of coordination of two definite phrases; in this respect the primeless examples in (438) behave just like cases in which the conjuncts do not differ in number. The non-coordinated reading in the primed examples is fully acceptable.

(438)   • Coordinated definite phrases with different number
   a.   %[De mannen en de jongen die te laat   kwamen], werden niet toegelaten.
          the men and the boy   who too late came   were not prt.-admitted
        'The men and the boy who were late were not admitted.'
   a′.   De mannen en [de jongen die te laat kwam], werden niet toegelaten.
   b.   %[De man en de jongens die te laat   kwamen], werden niet toegelaten.
          the man and the boys   who too late came   were not prt.-admitted
   b′.   De man en [de jongens die te laat kwamen], werden niet toegelaten.

B. Non-restrictive relative clauses

The examples in (439) and (440) show that non-restrictive relative clauses can readily take as their antecedent a coordinated antecedent with conjuncts that differ in number: all combinations and interpretations are available without any problem in both indefinite and definite phrases.

(439)   • Coordinated indefinite phrases with different number
   a.   [Twee mannen en een jongen, die te laat   kwamen], werden niet toegelaten.
          two men and a boy   who too late came   were not prt.-admitted
   a′.   Twee mannen en [een jongen, die te laat kwam], werden niet toegelaten.
   b.   [Een man en twee jongens, die te laat   kwamen], werden niet toegelaten.
          a man and two boys   who too late came   were not prt.-admitted
   b′.   Een man en [twee jongens, die te laat kwamen], werden niet toegelaten.

(440)   • Coordinated definite phrases with different number
   a.   [De mannen en de jongen, die te laat   kwamen], werden niet toegelaten.
          the men and the boy   who too late came   were not prt.-admitted
   a′.   De mannen en [de jongen, die te laat kwam], werden niet toegelaten.
   b.   [De man en de jongens, die te laat   kwamen], werden niet toegelaten.
          the man and the boys   who too late came   were not prt.-admitted
   b′.   De man en [de jongens, die te laat kwamen], werden niet toegelaten.

III. Definiteness

A. Restrictive relative clauses

When two coordinated elements differ with regard to definiteness, it is virtually impossible to interpret the restrictive relative clause as modifying both elements. Thus, the primeless examples in (441), where the plural form of the finite verb of the relative clause forces a coordinated antecedent reading, are clearly unacceptable. The non-coordinated antecedent readings in (441), on the other hand, are fully grammatical. The examples in (442) also clearly favor the non-coordinated antecedent reading.

(441)   • Coordinated singulars (difference in definiteness)
  a. *?[De man en een jongen die te laat kwamen], werden niet toegelaten.
  a′. De man en [een jongen die te laat   kwam], werden niet toegelaten.
      the man and a boy   who too late came   were not prt.-admitted
  b. *?[Een man en de jongen die te laat kwamen], werden niet toegelaten.
  b′. Een man en [de jongen die te laat   kwam], werden niet toegelaten.
      a man   and the boy   who too late came   were not prt.-admitted

(442)   • Coordinated plurals (difference in definiteness)
  a. *?[De mannen en twee jongens die te laat kwamen], werden niet toegelaten.
  a′. De mannen en [twee jongens die te laat kwamen], werden niet toegelaten.
      the men   and   two boys   who too late came   were not prt.-admitted
  b. *?[Twee mannen en de jongens die te laat kwamen], werden niet toegelaten.
  b′. Twee mannen en   [de jongens die te laat kwamen], werden niet toegelaten.
      two men   and   the boys   who too late came   were not prt.-admitted

B. Non-restrictive relative clauses

The examples in (443) and (444) show that non-restrictive relative clauses with coordinated antecedents consisting of a definite and an indefinite conjunct do not significantly differ from restrictive relative clauses. Here, too, only the non-coordinated antecedent readings are fully acceptable.

(443)   • Coordinated singular phrase with difference in definiteness
  a. ??[De man en een jongen, die te laat kwamen], werden niet toegelaten.
  a′. De man en [een jongen, die te laat   kwam], werden niet toegelaten.
      the man and a boy   who too late came   were not prt.-admitted
  b. *?[Een man en de jongen, die te laat kwamen], werden niet toegelaten.
  b′. Een man en [de jongen, die te laat   kwam], werden niet toegelaten.
      a man   and   the boy   who too late came   were not prt.-admitted

(444)   • Coordinated plural phrases with difference in definiteness
  a. *?[De mannen en twee jongens, die te laat kwamen], werden niet toegelaten.
  a′. De mannen en [twee jongens, die te laat kwamen], werden niet toegelaten.
      the men   and two boys   who too late came   were not prt.-admitted
  b. *?[Twee mannen en de jongens, die te laat kwamen], werden niet toegelaten.
  b′. Twee mannen en [de jongens, die te laat kwamen], werden niet toegelaten.
      two men   and the boys   who too late came   were not prt.-admitted

IV. Quantification

A. Restrictive relative clauses

Example (445a) shows that quantified elements that are formally plural can form a coordinated antecedent of a restrictive relative clause, although the marked status of (445b) suggests that acceptability may depend on the combination of quantifiers. The primed examples show that the non-coordinated antecedent reading is always readily available.

(445) a. [Alle leden   en   sommige niet-leden die zich hadden ingeschreven],
        all members and some non-members who REFL had   prt.-registered
        kregen korting.
        got   discount
        'All members and some non-members who had registered got a reduction.'
    a′. Alle leden   en [sommige niet-leden die zich hadden ingeschreven],
        all members and   some non-members who REFL had   prt.-registered
        kregen korting.
        got   discount
        'All members got a reduction, and some non-members who had registered.'
    b.   ^{??}[De meeste mannen en enkele vrouwen die te laat kwamen], werden niet toegelaten.
    b′. De meeste mannen [en enkele vrouwen die te laat kwamen], werden
        the most men   and some women   who too late came   were
        niet toegelaten.
        not prt.-admitted
        'Most men and some women who were late were not admitted.'

When the quantified elements are formally singular the coordinated structure is also formally singular, as is clear from the fact that the coordinated subject in (446) triggers singular agreement on the verb. Observe that it is possible to leave out the second quantifier.

(446)   Elke leerling en (elke) leraar   werd/*werden gestraft.
        every student and every teacher was/were   punished

This implies that when the relative pronoun functions as the subject of the relative clause, the finite verb of the relative clause must also be singular, as in the examples in (447). When the second quantifier is not present, the non-coordinated antecedent reading is entirely excluded. When the second quantifier is present, on the other hand, it seems that it is the non-coordinated antecedent reading that is preferred. The reason for this may be that the structures in (447a) and (447b) compete, and that the former is preferred as it does not require the postulation of elided structure; cf. the discussion of example (380) in Section 3.3.2.5.2.1.

(447) a. [Elke leerling en leraar   die te laat   kwam], werd gestraft.
        every student and teacher who too late came   was punished
        'Every student and teacher who was late was punished.'
    a′. *Elke leerling en [leraar   die te laat kwam], werd gestraft.
        every student   and   teacher who too late came was punished
    b.   [?][Elke leerling en elke leraar   die te laat kwam],   werd gestraft.
        every student and every teacher who too late came   was punished
        'Every student and every teacher who was late was punished.'
    b′. Elke leerling en [elke leraar   die te laat kwam], werd gestraft.
        every student and every teacher who too late came   was punished
        'Every student, and every teacher who was late was punished.'

The fact that (447b) is still reasonably acceptable may follow from the fact that Backward Conjunction Reduction gives rise to the acceptable representation in (448a). An argument in favor of such an analysis is that the two conjuncts in

examples like (447b) must have the same gender; the (b)-examples (448) show that if the conjuncts differ in gender, the first relative pronoun cannot be erased under Conjunction Reduction, but must be overtly realized. Example (448b′) may be slightly marked, but improves when the verbs are replaced by verbs in the present tense, which would make a generic reading possible: *Elke jongen die en elk meisje dat te laat komt, wordt gestraft* 'each boy or girl who is late will be punished'.

(448) a. Elke leerling ~~die te laat kwam~~ en elke leraar die te laat kwam,
           every pupil   who too late came and every teacher who too late came
           werd gestraft.
           was   punished
     b. *Elke jongen ~~die te laat kwam~~ en   elk meisje dat te laat kwam,   werd gestraft.
           every boy who too late came and every girl who too late came was punished
     b′. ?Elke jongen die ~~te laat kwam~~ en   elk meisje dat te laat kwam,   werd gestraft.
           every boy who too late came and every girl who too late came was punished

When a quantified and a non-quantified element are coordinated, as in (449), the coordinated antecedent reading in the primeless examples seems questionable. The non-coordinated antecedent reading in the primed examples, on the other hand, is fully acceptable.

(449) a. *?[De mannen en enkele vrouwen die te laat kwamen], werden niet toegelaten.
     a′. De mannen en   [enkele vrouwen die te laat kwamen], werden niet toegelaten.
           the men   and some women   who too late came   were not prt.-admitted
           'The men and some of the women who were late were not admitted.'
     b. ??[Alle leden en de niet-leden die zich hadden ingeschreven], kregen korting.
     b′. Alle leden   en [de niet-leden   die zich hadden ingeschreven],
           all members and the non-members who REFL had registered
           kregen korting.
           got discount
           'All members and the non-members who had registered got a reduction.'

B. Non-restrictive relative clauses

It is difficult to judge whether non-restrictive relative clauses can take a quantified antecedent at all. In many potential cases, an appositive interpretation seems more readily available, although it must be said that it is often difficult to distinguish the two cases.

(450) a. ??Alle mannen, die zich   te laat hadden ingeschreven, werden niet toegelaten.
            all men   who REFL. too late have prt.-registered   were not prt.-admitted
     a′. ?Alle mannen – die zich te laat hadden ingeschreven –   werden niet toegelaten.
            all men   who REFL. too late have prt.-registered were not prt.-admitted
     b. ??Sommige vrouwen, die te laat   kwamen, werden niet toegelaten
            some women   who too late came   were not prt.-admitted
     b′. ?Sommige vrouwen – die te laat   kwamen – werden niet toegelaten.
            some women   who too late came   were not prt.-admitted
            'Some women—those who were too late—were not admitted.'

    c.   [?]Enkele vrouwen, die te laat   kwamen, werden niet toegelaten.
        some women   who too late came,   were not prt.-admitted

    c′. Enkele vrouwen – die te laat   kwamen – werden niet toegelaten.
        some women,   who too late came   were not prt.-admitted
        'Some women—those who were late—were note admitted.'

Given this, it does not come as a surprise that non-restrictive relative clauses with coordinated quantified antecedents never give rise to a very felicitous result: both the coordinated antecedent reading in (451a) and the non-coordinated antecedent reading in (451b) are somewhat marked. Note that the latter seems to become fully acceptable when the modifier is given an appositional interpretation, as in (451b′).

(451) a. ^{??}[Alle mannen en enkele vrouwen, die te laat kwamen], werden niet toegelaten.
        all men and some women   who too late came   were not prt.-admitted
        'All men and some women, who were late, were not admitted.'

    b. [?]Alle mannen en [enkele vrouwen, die te laat kwamen], werden niet toegelaten.
        'All men and some women, who were late, were not admitted.'

    b′. Alle mannen en [enkele vrouwen –die te laat kwamen–] werden niet toegelaten.
        'All men and some women—those who were late—were not admitted.'

    When quantified and non-quantified elements are coordinated, the coordinated antecedent reading is not available. This is shown in examples (452), where the construction is only marginally acceptable with the non-coordinated antecedent reading in (452b), or with the appositional interpretation in (452b′).

(452) a. ^{*?}[De mannen en enkele vrouwen, die te laat kwamen], werden niet toegelaten.
         the men   and some women who too late came   were not prt.-admitted

    b. [?]De mannen en [enkele vrouwen, die te laat kwamen], werden niet toegelaten.
        'The men and some of the women, who were late, were not admitted.'

    b′. De mannen en [enkele vrouwen – die te laat kwamen –] werden niet toegelaten.
        'The men and some of the women—those who were late—were not admitted.'

3.3.2.5.2.5. Conclusion

This section briefly summarizes the finding above by considering the possible ways of representing relativized constructions with antecedents that are part of a coordinated structure. Such constructions are potentially ambiguous between a coordinated antecedent reading, on which both conjuncts function as antecedents of the relative clause, and a non-coordinated antecedent reading, on which only the final conjunct functions as antecedent of the relative clause. Whether both constructions are available may depend on the nature of the conjoined noun phrases.

I. Coordinated antecedent reading

When we are dealing with restrictive relative clauses, we find that there are two forms of coordinated antecedents, each with its own underlying structure, which are distinguished by the number of articles present. When there is more than one article, as in (453), coordination takes place at the level of the DP: the two DPs each have their own referent set, restricted by the relative clause. Since determiners cannot be

in the scope of a restrictive relative clause, we have suggested that each conjunct has its own relative clause; as these two relative clauses are identical, the first one is erased under Backward Conjunction Reduction, resulting in a structure with two determiners, but only one phonetically realized relative clause.

(453)   • Coordinated antecedent reading with two articles (Restrictive relative clauses)

a.   [$_{DP}$ D   [$_{NP}$ N$_i$ [$_{RC1}$ ~~REL$_i$ ... t_i ...~~]]]   en
b.   [$_{DP}$ de   [$_{NP}$ jongens   [$_{RC1}$ ~~die ...~~]]]   en
       the   boys   who   and

[$_{DP}$ D   [$_{NP}$ N$_j$ [$_{RC2}$ REL$_j$ ... t_j ...]]]
[$_{DP}$ de   [$_{NP}$ meisjes   [$_{RC2}$ die ...]]]
     the   girls   who

When there is just a single article, as in (454), coordination takes place at the NP-level: the two elements share both the determiner and the restrictive relative clause.

(454)   • Coordinated antecedent reading with one article (Restrictive relative clauses)

a.   [$_{DP}$ D   [$_{NP}$ N   and   N]$_i$ [$_{RC}$ REL$_i$ ... t_i ...]]
b.   [$_{DP}$ de   [$_{NP}$ jongens   en   meisjes]   [$_{RC}$ die ...]]
       the   boys   and   the girls   who

It must be stressed that we have found several cases of coordinated antecedents of restrictive relative clauses that cannot readily be accounted for by either of these representations. This holds especially for cases with singular conjuncts, in which each conjunct has its own definite determiner; see 3.3.2.5.2.2 and 3.3.2.5.2.4 for discussion and a potential solution for at least some of the problems.

For constructions with a non-restrictive relative clause, coordination takes place at the level of the DP, which means that the "shared determiner" structure of (454) is not available. The one remaining structure for coordinated antecedents with non-restrictive relative clauses is given in (455).

(455)   • Coordinated antecedent reading (Non-restrictive relative clause)

a.   [[[$_{DP}$ D   N]   and   [$_{DP}$ D   N]]$_i$,   [$_{RC}$ REL$_i$ ... t_i ...]]
b.   [[[$_{DP}$ de   katten]   en   [$_{DP}$ de   honden]],   [$_{RC}$ die ...]]
       the   cats   and   the   dogs   which

II. Non-coordinated antecedent reading

In (456) and (457) we find the representations of the non-coordinated antecedent readings for constructions with restrictive and non-restrictive relative clauses, respectively. Although the antecedent is part of a coordinated structure, the antecedent itself consists of one element only: it is only the second element of the coordination that functions as the antecedent of the relative clause. This means that coordination takes place at the level of the DP, but that only the second DP contains a restrictive relative clause.

(456)   • Non-coordinated antecedent reading (restrictive relative clauses)

a.   [[$_{DP}$ D   [$_{NP}$ N]]   en   [$_{DP}$ D   [$_{NP}$ N$_j$]   [$_{RC}$ REL$_j$ ... t_i ...]]]
b.   [[$_{DP}$ de   [$_{NP}$ jongens]]   en   [$_{DP}$ de   [$_{NP}$ meisjes]   [$_{RC}$ die ...]]]
       the   boys   and   the   girls   who

(457)   • Non-coordinated antecedent reading (non-restrictive relative clauses)

a.   [[$_{DP}$ D   [$_{NP}$ N]]   and   [$_{DP}$ D   [$_{NP}$ N]]$_i$,   [$_{RC}$ REL$_i$ ... t_i ...]]
b.   [[$_{DP}$ de   [$_{NP}$ katten]]   en   [$_{DP}$ de   [$_{NP}$ honden]],   [$_{RC}$ die ...]]
      the   cats   and   the   dogs   which

III. The conjuncts of the antecedent

The conjuncts that are part of the antecedent may differ in gender and number. In that case, the gender or number marking on the relative pronoun may have a disambiguating effect: if the relative pronoun agrees with the second conjunct, but not with the first one (or, in the case of number, the full coordinated phrase), it is only the non-coordinated antecedent reading that is available. Another difference that could in principle arise between the two conjuncts is that in definiteness, but in these cases the coordinated antecedent reading is not available. Finally, if two quantified elements are combined, the degree of acceptability of the two readings seems to depend on the quantifiers involved.

3.3.2.5.3.   Disjunctive coordination (of 'or')

Section 3.3.2.5.3.1 will show that constructions in which two NPs coordinated by the disjunctive conjunction *of* 'or' are followed by a relative clause, are often ambiguous between a coordinated antecedent reading, in which the relative clause restricts both conjuncts, and a non-coordinated antecedent reading, in which the relative clause restricts only the second conjunct. Section 3.3.2.5.3.2 will show that constructions with a coordinated antecedent reading may be ambiguous in their turn as well, allowing both a one-set and a two-set reading. This gives rise to a three-way ambiguity. Section 3.3.2.5.3.3 will discuss disjunctively coordinated antecedents in generic contexts, and Section 3.3.2.5.3.4 will discuss relative constructions in which the conjuncts of the antecedent differ in nominal features. We will complete the discussion in 3.3.2.5.3.5 by drawing a number of general conclusions.

3.3.2.5.3.1. Coordinated versus non-coordinated antecedents

Constructions with NPs coordinated by the conjunction *of* 'or' that are followed by a relative clause often allow both a coordinated and a non-coordinated antecedent reading. The examples in this section may receive a similar analysis as the corresponding examples with the conjunction *en* 'and' from Section 3.3.2.5.2.1; cf. the discussion of (381) and (387). We must keep in mind, however, that matters are somewhat complicated by the fact that examples with a coordinated antecedent reading sometimes allow two different interpretations, the so-called one-set and two-set readings, which will be discussed in the next section.

I. Restrictive relative clauses

When noun phrases are coordinated by means of the disjunctive conjunction *of* 'or' and followed by a restrictive relative clause, ambiguity may arise between a coordinated and a non-coordinated antecedent reading. Whether ambiguity does indeed arise depends on the nature of the conjuncts: when the conjuncts share the same article, only the coordinated antecedent reading is available; when more articles are present, ambiguity may arise for some people. Of course, indefinite

plurals are somewhat special given that they have articles that are phonetically empty.

A. Coordinated indefinite plurals

The examples in (458) show that ambiguity may arise with coordinated indefinite plurals. The scope of the relative clause is indicated by bracketing: in the primeless examples the relative clause restricts both conjuncts, and in the primed ones only the second conjunct. Example (458a), for instance, expresses that any person who is a boy or a girl and who is late will be punished, whereas (458a′) expresses that any person who is a boy will be punished, or any person who is a girl and who is late. Similarly, (458b) expresses that we may keep dogs or cats provided that they do not cause much trouble, whereas (458b′) expresses that we may keep either cats, or dogs that do not cause much trouble.

(458) • Coordinated indefinite plurals
　　a. [Jongens of meisjes die te laat komen], worden gestraft.
　　　　 boys or girls　　　 who too late come　　 are　　 punished
　　　　 'Boys or girls who are late will be punished.'
　　a′. Jongens of [meisjes die te laat komen], worden gestraft.
　　b. We mogen [katten of honden die　niet veel overlast geven] houden.
　　　　 we may　　cats or dogs　　　 which not　much trouble give　 keep
　　　　 'We are allowed to keep cats or dogs that do not give much trouble.'
　　b′. We mogen katten of [honden die niet veel overlast geven], houden.

In speaking, the two readings will be disambiguated by means of intonation. On the coordinated antecedent reading in the primeless examples, the coordinated antecedent is pronounced as a single intonation unit. On the non-coordinated antecedent reading, on the other hand, the conjunction *of* 'or' is preceded by an intonation break and extra emphasis is given to the second head noun (*meisjes* 'girls' and *honden* 'dogs'), while the entire second conjunct, including the relative clause, will be pronounced as a single intonation unit.

B. Coordinated definite plurals

When the plural conjuncts are definite, as in (459), speakers may have difficulty in obtaining the coordinated antecedent reading in the primeless examples. In this respect the examples with the disjunctive conjunction behave just like the corresponding examples with the conjunction *en* 'and' discussed in 3.3.2.5.2.1, example (380).

(459) • Coordinated plurals with two definite articles
　　a. ?[De jongens of de meisjes die te laat komen], worden gestraft.
　　　　 the boys or the girls　　　 who too late come　 are　　　 punished
　　　　 'The boys or the girls who are late will be punished.'
　　a′. De jongens of [de meisjes die te laat komen], worden gestraft.
　　b. ?We mogen [de katten of de honden die niet veel overlast geven], houden.
　　　　 we may　　 the cats or the dogs　　 which not much trouble give keep
　　　　 'We are allowed to keep the cats or the dogs which don't give much trouble.'
　　b′. We mogen de katten of [de honden die niet veel overlast geven], houden.

Just as in the case of coordination with *en* 'and', the fact that the primeless examples in (459) are marked may be related to the fact that these examples compete with the examples in (460a&b), in which the two conjuncts share the same article. Section 3.3.2.5.2.1 has shown that examples with a single article may be preferred given that they can be analyzed without postulating any elided material. Coordinated plurals with a single definite article do not allow the exclusive reading; the account given in Section 3.3.2.5.2.3 for the corresponding examples with *en* 'and' can also be applied to these examples.

(460) • Coordinated plurals with one definite article
  a. [De jongens of meisjes die te laat komen], worden gestraft.
      the boys or girls   who too late come are   punished
  a′. *?De jongens of [meisjes die te laat kwamen], werden gisteren gestraft.
  b. We mogen [de honden of katten die niet veel overlast geven], houden.
      we may   the dogs or cats   which not much trouble give keep
  b′. *?We mogen de honden of [katten die niet veel overlast geven], houden.

C. Coordinated indefinite singulars

The examples in (461) show that in the case of coordinated indefinite singulars the non-coordinated antecedent reading is available, provided at least that the two conjuncts have the same gender; see 3.3.2.5.3.4, sub I, for cases in which the gender is different. The non-coordinated antecedent readings are harder to obtain. Note that these examples only allow a generic interpretation.

(461) • Coordinated singulars with two indefinite articles (same gender)
  a. [Een scholier of een student die zich heeft ingeschreven], krijgt korting.
      a pupil or a student   who REFL has registered   gets   discount
      'A pupil or a student who has registered gets a reduction.'
  a′. ??Een scholier of [een student die zich heeft ingeschreven], krijgt korting.
  b. [Een leraar of een leerling die te laat komt],   wordt gestraft.
      a teacher or a student   who too late comes is   punished
      'A teacher or a student who is late will be punished.'
  b′. ??Een leraar of [een leerling die te laat komt] wordt gestraft.

The two conjuncts may also share the indefinite article. Example (462a) shows that the coordinated antecedent reading is fully acceptable, and, in fact, it may be the case that this generic example is even more natural than the generic examples in (461a&b). Example (462b) shows that the coordinated noun phrase can also be given a specific interpretation. In this use, the coordinated noun phrase refers to *a single* person; the speaker refers to a specific person but does not know whether that person is a pupil or a student. For this reason, the restrictive relative clause must be construed with both conjuncts, which accounts for the unacceptability of the non-coordinated antecedent reading in the primed example. When we assume that the generic example in (462a) has a similar indeterminacy, we also account for the impossibility of the non-coordinated antecedent reading in (462a′).

(462)   • Coordinated singulars with one indefinite article

    a.   [Een student of scholier die zich heeft ingeschreven], krijgt altijd   korting.
         a student or pupil   who REFL has registered   gets always discount
         'A student or pupil who has registered always gets a reduction.'

    a'. *Een student of [scholier die zich heeft ingeschreven], krijgt altijd korting.

    b.   [Een student of scholier die zich had ingeschreven], kreeg daar korting.
         a student or pupil   who REFL had registered   got   there discount
         'A student or pupil who has registered got a reduction there.'

    b'. *Een student of [scholier die zich had ingeschreven], kreeg daar korting.

D. Coordinated definite singulars

As in the case of coordinated definite plural, the coordinated antecedent reading is not accepted by all speakers. The non-coordinated antecedent reading, on the other hand, is fully acceptable.

(463)   • Coordinated singulars with two definite articles (same gender)

    a.   ?[De scholier of de student die zich heeft ingeschreven], krijgt korting.
         the student or the pupil   who REFL has registered   gets   discount
         'The pupil or the student who has registered gets a reduction.'

    a'. De scholier of [de student die zich heeft ingeschreven], krijgt korting.

    b.   ?[De leraar of de leerling   die te laat komt]   wordt gestraft.
         the teacher or the student who too late comes is   punished
         'The teacher or the student who is late will be punished.'

    b'. De leraar of [de leerling die te laat is] wordt gestraft.

Example (464a) shows that generic examples like (463a&b) improve when the two conjuncts share the same article. The non-coordinated antecedent reading in (464a'&b'), on the other hand, is completely excluded. The coordinated noun phrase in (464b) refers to a single individual, of whom the speaker does not know whether he is a pupil or a student. For this reason, the restrictive relative clause must be construed with both conjuncts, which accounts for the unacceptability of (463b'). When we assume that the generic example in (464a) has a similar indeterminacy, we also account for the impossibility of the non-coordinated antecedent reading in (464a').

(464)   • Coordinated singular with one definite article

    a.   [De student of scholier die zich heeft ingeschreven], krijgt korting.
         the student or pupil   who REFL has registered   gets discount
         'The student or pupil who has registered will get a reduction.'

    a'. *De student of [scholier die zich heeft ingeschreven], krijgt korting.

    b.   [De student of scholier die zich had ingeschreven], kreeg korting.
         the student or pupil   who REFL had registered   got   discount

    b'. *De student of [scholier die zich had ingeschreven], kreeg korting.

II. Non-restrictive relative clauses

When two elements are coordinated by means of *of* 'or' and followed by a non-restrictive relative clause, ambiguity may arise between a coordinated and a non-coordinated antecedent reading. As in the case of restrictive relative clauses, the

question of whether ambiguity does indeed arise depends on the nature of the two conjuncts: when the conjuncts share the same article, only the coordinated antecedent reading is available; when more articles are present, ambiguity arises. Indefinite plurals are somewhat special given that they have articles that are phonetically empty.

A. Coordinated indefinite plurals

With coordinated indefinite plurals both readings seem available, although the coordinated antecedent reading seems to be preferred. Note that the primeless examples involving inclusive *of* 'or' are semantically more or less equivalent to the corresponding construction with the conjunction *en* 'and', which may be preferred by some speakers.

(465)   • Coordinated indefinite plurals
    a.   [Studenten of scholieren, die weinig geld hebben], krijgen korting.
        students or pupils   who little money have   get   discount
        'Students or pupils, who have little money, get a reduction.'
    a′.   ?Studenten of [scholieren, die weinig geld hebben], krijgen korting.
    b.   We mogen [honden of katten, die niet veel overlast geven], houden.
        we may   dogs or cats   which not much trouble give keep
        'We are allowed to keep dogs or cats, which don't give much trouble.'
    b′.   ?We mogen honden of [katten, die niet veel overlast geven] houden.

B. Coordinated definite plurals

With coordinated plurals with two definite articles, the two readings seem to be equally acceptable. Again, some speakers may find the primeless examples somewhat marked compared to the corresponding constructions with *en* 'and'.

(466)   • Coordinated plurals with two definite articles
    a.   [De studenten of de scholieren, die weinig geld hebben], krijgen korting.
        the students or the pupils   who little money have   get   discount
        'The students or the pupils, who have little money, get a reduction.'
    a′.   De studenten of [de scholieren, die weinig geld hebben], krijgen korting.
    b.   We mogen [de honden of de katten, die niet veel overlast geven], houden.
        we may   the dogs or the cats   which not much trouble give keep
        'We are allowed to keep the cats or the dogs, which don't give much trouble.'
    b′.   We mogen de honden of [de katten, die niet veel overlast geven], houden.

When the two conjuncts share the same definite article, the result is always marginal at best. The non-coordinated antecedent reading is completely excluded when the sentence is unambiguously non-generic, as in (467b′).

(467)   • Coordinated plurals with one article
    a.   ?[De studenten of scholieren, die weinig geld hebben], krijgen korting.
        the students or pupils   who little money have   get   discount
        'The students or pupils, who don't have much money, get a reduction.'
    a′.   *De studenten of [scholieren, die weinig geld hebben], krijgen korting.
        the students or   pupils   who little money have   get   discount
        'The students or pupils, who don't have much money, get a reduction.'

b. $^?$[De studenten of scholieren, die weinig geld hadden], kregen korting.
   the students or pupils   who little money had   got   discount
   'The students or pupils, who didn't have much money, got a reduction.'

b′. *De studenten of [scholieren, die niet weinig hadden], kregen korting.
    the students or   pupils   who little money had   got   discount

C. Coordinated indefinite singulars

The examples in (468) show that in the case of coordinated indefinite singulars the non-coordinated antecedent reading is available, provided at least that the two conjuncts have the same gender; see 3.3.2.5.3.4, sub I, for cases in which the gender is different. The non-coordinated antecedent readings seem somewhat harder to obtain.

(468)   • Coordinated singulars with two indefinite articles (same gender)

a.   [Een student of een scholier, die weinig geld heeft/hebben], krijgt korting.
    a student or a pupil   who little money has/have   gets discount
    'A student or a pupil, who has/have little money, gets a reduction.'

a′. $^?$Een student of [een scholier, die weinig geld heeft], krijgt korting.

b.   We mogen [een hond of een kat, die niet veel overlast geeft/geven], houden.
    we may   a dog or a cat   which not much trouble gives/give keep
    'We are allowed to keep a dog or a cat, which doesn't give much trouble.'

b′. $^?$We mogen een hond of [een kat, die niet veel overlast geeft], houden.

With indefinite singular antecedents, the two conjuncts may also share the indefinite article. The coordinated antecedent reading is fully acceptable, and, in fact, it may be the case that the generic example in (469a) is even more natural than the generic example in (468a). Note in passing that, although judgments are again delicate, it seems that use of the plural form of the finite verb in the relative clause is not possible in (469a). The preferred interpretation of (469a) is generic, but (469b) shows that the coordinated noun phrase can also be given a specific interpretation, in which case it refers to *a single* person; the speaker refers to a specific person but does not know whether that person is a pupil or a student. For this reason, the restrictive relative clause must be construed with both conjuncts. When we assume that the generic example in (469a) has a similar indeterminacy, we also account for the impossibility of the non-coordinated antecedent reading in (469a′).

(469)   • Coordinated singulars with one indefinite article

a.   [Een student of scholier, die weinig geld heeft], krijgt altijd   korting.
    a student or pupil   who little money has   gets always   discount
    'A student or pupil, who has little money, always gets a reduction.'

a′. *Een student of [scholier, die weinig geld heeft], krijgt altijd korting.

b.   [Een student of scholier, die weinig geld had], kreeg gisteren   korting.
    a student or pupil   who little money had got   yesterday discount
    'A student or pupil, who had little money, got a reduction yesterday.'

b′. *Een student of [scholier, die weinig geld had], kreeg gisteren korting.

D. Coordinated definite singulars

The non-generic examples in (470) are all acceptable. The coordinated constructions with a single definite article in (471), on the other hand, are more restricted:

they are perhaps marginally possible in a generic context like (471a); when the coordinated noun phrase has a specific reading, as in (471b), the result is bad. The non-coordinated antecedent reading in the primed examples is also ungrammatical.

(470)   • Coordinated singulars with two definite articles (same gender)
    a.   [De student of de scholier, die (allebei) weinig geld hebben], krijgt korting.
        the student or the pupil   who both little money have   gets discount
        'The student or the pupil, who (both) have little money, gets a reduction.'
    a′.   De student of [de scholier, die niet zo veel geld heeft], krijgt korting.
    b.   We mogen [de hond of de kat, die (beide) niet veel overlast geven], houden.
        we may   the dog or the cat   which both not much trouble give   keep
        'We are allowed to keep the dog or the cat, which (both) don't give much trouble.'
    b′.   We mogen de hond of [de kat, die niet veel overlast geeft], houden.

(471)   • Coordinated singular with one definite article
    a.   ??[De student of scholier, die niet zo veel geld heeft], krijgt altijd korting.
        the student or pupil   who not so much money has gets always discount
        'The student or pupil, who didn't have much money, always gets a reduction.'
    a′.   *De student of [scholier, die weinig geld heeft], krijgt altijd korting.
    b.   *[De student of schoier, die weinig geld had], kreeg gisteren korting.
        the student or pupil   who little money had got   yesterday discount
    b′.   *De student of [scholier, die weinig geld had], kreeg gisteren korting.

3.3.2.5.3.2. One-set versus two-set reading (inclusive versus exclusive *of* 'or')

Examples with a coordinated antecedent reading are often ambiguous due to the fact that the disjunctive conjunction *of* 'or' allows two readings. These two readings, the inclusive, one-set reading and the exclusive, two-set reading, can be described as in (472). We will see in the two subsections below that the ambiguity arises with both restrictive and non-restrictive relative clauses.

(472) a.   Inclusive *of* (one-set reading): The denotation of $[N_1$ of $N_2]$ involves a single set, the members of which are either N_1 or N_2; the relative clause modifies this single set and the predicate in the main clause holds for this single set.
     b.   Exclusive *óf* (two-set reading): The denotation of $[N_1$ of $N_2]$ involves two separate sets, one set whose members are N_1 and one set whose members are N_2: the relative clause is interpreted such that it modifies each set separately, and the predicate in the main holds for only one of these sets.

The two types of *of* differ in that exclusive *óf* is often stressed, which is indicated by means of an accent which is normally not found in writing, and can be replaced by the discontinuous disjunction *óf ... óf ...* 'either ... or ...'; inclusive *of*, on the other hand, is normally not stressed, accent falling on the new information in the relative clause, and cannot be replaced by the discontinuous disjunction.

I. Restrictive relative clauses

The availability of the inclusive (one-set), and the exclusive (two-set) reading depends on the nature of the coordinated antecedent of the relative clause. First, consider example (473a), in which the antecedent is a definite coordinated noun

phrase with a single article. This example only yields the inclusive reading due to the fact that we are dealing with a single DP, and hence there is only a single referent set. That exclusive *óf* cannot be used DP-internally is also clear from the fact illustrated in (473b) that use of the discontinuous disjunction *óf ... óf ...* 'either ... or ...' leads to ungrammaticality.

(473)　　• Coordinated plurals with a single definite article
　　　a.　De [$_{NP}$ [jongens of meisjes]$_i$ die$_i$ te laat　komen], worden gestraft.
　　　　　the　　boys or the girls　　who too late come　　are　　　punished
　　　　　'The boys or the girls who are late will be punished.'
　　　b.　*De [$_{NP}$ [óf jongens óf meisjes]$_i$ die$_i$ te laat komen], worden gestraft.

　　　Now compare example (473a) to example (474a), in which each conjunct is associated with its own article. The preferred reading for this (marked) construction is the exclusive reading, which is consistent with the fact illustrated by (474b) that the disjunctive conjunction can be replaced by the discontinuous disjunction *óf... óf* 'either ... or', which unambiguously shows that exclusive *óf* can be used to coordinate DPs. If these examples are indeed grammatical, they are plausibly derived by means of Backward Conjunction Reduction. Recall from Section 3.3.2.5.3.1 that it is actually the non-coordinated antecedent reading which is best.

(474)　　• Coordinated plurals with two definite articles
　　　a.　%[De jongens ~~die te laat komen~~] óf [de meisjes die te laat komen],
　　　　　 the boys　　　　　　　　　　or　the girls　who too late come
　　　　　worden gestraft.
　　　　　are　　punished
　　　b.　%Óf de jongens óf de meisjes die te laat komen,　worden gestraft.
　　　　　either the boys or the girls　who too late come are　　　punished
　　　　　'Either the boys or the girls who are late will be punished.'

For the coordinated definite singulars in (475a) the exclusive reading is also clearly preferred to the inclusive reading, although, again, it is the non-coordinated antecedent reading that is actually best. Note that, for convenience, we will no longer indicate the elided relative clause in the first conjunct.

(475)　　• Coordinated singulars with two definite articles (same gender)
　　　a.　%De student óf de scholier die zich heeft ingeschreven, krijgt de vrijkaart.
　　　　　the pupil or the student　who REFL has registered　　gets the free ticket
　　　b.　%Óf de student óf de scholier die zich heeft ingeschreven, krijgt de vrijkaart.
　　　　　either the pupil or the student who REFL has registered　gets the free ticket
　　　　　'Either the pupil or the student who registered will get the free ticket.'

　　　Although, for reasons to be discussed in 3.3.2.5.3.3, the inclusive reading is highly preferred in the case of coordinated indefinites as in (476), the exclusive reading seems to be marginally possible as well. On the first reading, the sentence expresses that there is a single antecedent set, whose members are either boys or girls, and it is predicated of the members of this set who are late that they will be punished. On the second reading, there are two sets of person that are late consisting of, respectively, boys and girls, and the sentence expresses that only the members of

one of these sets will be punished. The ambiguity arises due to the fact that the word order is compatible both with assuming that *of* coordinates some noun phrase internal projection and with assuming that it coordinates DPs.

(476)   • Coordinated indefinite plurals
    a.   Jongens of meisjes die te laat komen,   worden gestraft, maar niet hun ouders.
          boys or girls   who too late come   are punished   but not their parents
          'Boys or girls who are late will be punished, but their parents won't.'
    b.   ^{??}(Óf) jongens óf meisjes die te laat komen,   worden gestraft.
          boys or girls   who too late come   are punished
          'Boys or girls who are late will be punished.'

Coordinated singulars with two indefinite articles seem to behave in ways essentially similar to their plural counterparts, the only difference being that the sets in question consist of only one member: example (477a) illustrates the inclusive reading, and (477b) illustrates the exclusive reading. The two coordinated definite singulars in (477a) form a one-member set interpretation with a generic reading: any pupil or student who has registered will be given a complimentary ticket. In (477b), on the other hand, two one-member sets are coordinated, with the relative clause restricting both elements separately. The predication in the main clause, however, holds for only one of these sets: "either a pupil who has enrolled will receive the free ticket, or a student who has enrolled".

(477)   • Coordinated singulars with two indefinite articles (same gender)
    a.   Een scholier of een student die zich heeft ingeschreven, krijgt een vrijkaart.
          a pupil or a student   who REFL has registered   gets   a free.ticket
          'A pupil or a student who has registered will get a complimentary ticket.'
    b.   (Óf) een scholier óf een student die zich heeft ingeschreven, krijgt
          either a pupil   or a student   who REFL has registered   gets
          de vrijkaart.
          the free.ticket
          'Either a pupil or a student who has registered will get the free ticket.'

Coordinated singulars with one indefinite article allow only the inclusive reading, which is clear from the fact that the disjunctive conjunction cannot be replaced by the discontinuous disjunction *óf... óf* 'either ... or'. In this respect they behave like the coordinated plurals with a single definite article in (473). Note that some speakers may prefer the generic example in (478a) to the one in (477a).

(478)   • Coordinated singulars with one indefinite article (same gender)
    a.   Een scholier of student die zich heeft ingeschreven, krijgt een vrijkaart.
          a pupil or student   who REFL has registered   gets   a free.ticket
          'A pupil or a student who has registered will get the complimentary ticket.'
    b.   *(Óf) een scholier óf student   die zich heeft ingeschreven, krijgt de vrijkaart.
          either a pupil   or a student who REFL has registered   gets the free.ticket
          'Either a pupil or a student who has registered will get the complimentary ticket.'

    The discussion above suggests that the exclusive (two-set) and the inclusive (one-set) reading may involve coordination at different levels. The exclusive

reading arises from the structure in (479a), which involves coordination at the level of DP and some form of Backward Conjunction Reduction, whereas the inclusive reading involves coordination of projections within the noun phrase (NP or NumP); see Section 3.3.2.5.2.2 for a discussion of these analyses.

(479) a. $[_{DP}$ D $[_{NP}$ [... N ...]$_i$ $[_{RC1}$ ~~REL$_i$ ... t$_i$ ...~~]]] of
$[_{DP}$ D $[_{NP}$ [... N...]$_j$ $[_{RC2}$ REL$_j$ ... t$_j$ ...]]]

  b. $[_{DP}$ D $[_{NP}$ [[... N ...] of [...N ...]]$_i$ $[_{RC}$ REL$_i$ ... t$_i$ ...]]]

II. Non-restrictive relative clauses

Ambiguity between the inclusive (one-set) and the exclusive (two-set) reading may also arise in non-restrictive relative clause constructions. As in the case of the restrictive relative clauses the availability of the two readings depends on the nature of the coordinated antecedent of the relative clause. When we are dealing with coordinated plurals with a single definite article, only the inclusive reading is available. As in the case of restrictive relative clauses, this is not surprising given that we are dealing with a single DP and hence there is only a single referent set. This is compatible with our earlier conclusion that exclusive *óf* cannot be used DP-internally given that use of the discontinuous disjunction *óf ... óf ...* 'either ... or ...' leads to ungrammaticality. Note that some speakers may find example (480a) with inclusive *of* 'or' marked compared to the corresponding construction with *en* 'and', which is semantically more or less equivalent to it.

(480) • Coordinated plurals with a single definite article
  a. [De studenten of scholieren, die weinig geld hebben], krijgen korting.
    the students or pupils   who little money have   get   discount
    'The students or the pupils, who don't have much money, get a reduction.'
  b. *De óf studenten óf scholieren, die niet zo veel geld hebben, krijgen korting.

Example (480a) contrasts sharply with (466a), repeated here as (481a), in which each conjunct is associated with its own article. The preferred reading of this example is the exclusive reading, which is shown by fact that the conjunction *of* can be readily replaced by the discontinuous disjunction *óf... óf* 'either ... or', as illustrated by (481b). We are dealing with two DPs, each referring to its own referent set, and the sentence expresses that a discount is given to the members of only one of the two sets, that is, either to the students or to the pupils. The constructions with two definite singular elements in (482) also seem to favor the exclusive reading.

(481) • Coordinated plurals with two definite articles
  a. $^?$[De studenten of de scholieren, die weinig geld hebben], krijgen korting.
    the students or the pupils   who little money have   get discount
    'The students or the pupils, who don't have much money, get a reduction.'
  b. (Óf) de studenten óf [de scholieren, die weinig geld hebben], krijgen korting.
    or the students   or the pupils who little money have   get discount
    'Either the students or the pupils, who don't have much money, get a reduction.'

(482)   • Coordinated singulars with two definite articles
    a. ??[De student of de scholier, die weinig geld heeft],   krijgt korting.
       the student or the pupil   who little money has   gets discount
       'The student or the pupil, who doesn't have much money, gets a reduction.'
    b. (Óf) de scholier   óf [de student, die weinig geld heeft], krijgt korting.
       either the student or the pupil   who little money has   gets discount
       'Either the student or the pupil, who doesn't have much money, gets a reduction.'

In the case of the coordinated indefinite plurals in (483), the inclusive reading is preferred to the exclusive reading, which is marginally possible at best. Example (483a) expresses that we are with a single set of students and pupils, who all receive a discount: on this reading it is possible to express contrast between the single coordinated antecedent set and some other set. Again, some speakers may find example (483a) with inclusive *of* 'or' marked compared to the corresponding construction with *en* 'and', which is semantically more or less equivalent to it.

(483)   • Coordinated indefinite plurals
    a. [Studenten of scholieren, die weinig geld hebben], krijgen korting
       students or pupils   who little money have   get discount
       (maar docenten niet).
       (but   teachers not)
       'Students or pupils, who have little money, get a reduction (but teachers don't).'
    b. ??(Óf) studenten óf [scholieren, die weinig geld hebben], krijgen korting.
       Either students or   pupils   who little money have   get discount

Coordinated singulars with one article allow only the inclusive reading: it is claimed that anyone who is a student or a pupil will get a discount. That the exclusive reading is not possible is also clear from the fact that the disjunctive conjunction cannot be replaced by the discontinuous disjunction *óf... óf* 'either ... or'. The examples in (484) therefore behave just like the coordinated plurals with a single definite article in (480).

(484)   • Coordinated singulars with two indefinite articles
    a. [Een student of scholier, die weinig geld heeft], krijgt korting.
       a student or pupil   who little money has   gets   discount
       'A student or a pupil, who doesn't have much money, gets a reduction.'
    b. *[(Óf) een scholier óf student, die weinig geld heeft], krijgt korting.
       either a student or a pupil   who little money has   gets   discount

When there are more articles present, on the other hand, both the inclusive and the exclusive seem available. The preferred reading of (485a) is the same (generic) inclusive reading that we find in (484a), which might be the preferred form for some speakers. Nevertheless, the exclusive reading also seems possible, according to which two singleton sets are coordinated, with the predication in the main clause holding for only one of these sets.

(485)   • Coordinated singulars with two indefinite articles
    a.   [Een student of een scholier, die weinig geld heeft/hebben], krijgt korting.
        a student or a pupil   who little money has/have   gets discount
        'A student or a pupil, who doesn't/don't have much money, gets a reduction.'
    b. $^{??}$[(Óf) een scholier óf een student, die weinig geld heeft], krijgt korting.
        either a student or a pupil   who little money has   gets discount
        'Either a student or a pupil, who doesn't have much money, gets a reduction.'

Although it is somewhat hard to obtain reliable judgments, it seems that in the case of the inclusive reading in (485a) the finite verb of the relative clause can appear either in the singular or in the plural. This is unexpected: since we are dealing with disjunctive coordination of two singular elements, we would expect the finite verb of the relative clause to be in the singular, just like the finite verb of the main clause. Note in this connection that the possibility of adding the adverbial elements *allebei* 'both' in (486) suggests that the plural form must indeed be considered acceptable.

(486)   Een student of een scholier, die allebei weinig geld hebben/*heeft, krijgt korting.
       a student or a pupil   who both little money have/has   gets discount
       'A student or a pupil, both of whom don't have much money, gets a reduction.'

3.3.2.5.3.3. Generic/non-generic contexts

In the previous section, we have already seen that constructions with coordinated antecedent can be used both in generic and non-generic contexts. This section examines whether there are restrictions on the use of disjunctively coordinated antecedents that are related to genericity.

I. Restrictive relative clauses

Example (487) provides cases with coordinated plurals with a single definite article, which only allow a coordinated antecedent reading. The use of the present tense in (487a) seems to favor a generic reading, but (487b), in which the finite verb of the relative is in the past tense, shows that these coordinated plurals can also be found in non-generic contexts. In this respect, the examples in (487) do not differ from examples without a coordinated antecedent: *De jongens die te laat komen/kwamen worden gestraft.*

(487)   • Coordinated plurals with a single definite article
    a.   De [$_{NP}$ [jongens of meisjes]$_i$ die$_i$ te laat komen], worden gestraft.
        the   boys or the girls   who too late come   are   punished
        'The boys or the girls who are late will be punished.'
    b.   De [$_{NP}$ [jongens of meisjes]$_i$ die$_i$ te laat kwamen], worden gestraft.
        the   boys or the girls   who too late came   are   punished
        'The boys or the girls who were late will be punished.'

The same thing holds for coordinated plurals with two definite articles on their inclusive reading: although the examples may be marginal for some speakers, example (488a) clearly prefers a generic interpretation, whereas (488a′) has a non-generic interpretation. On the exclusive, two-set reading, on the other hand, the

generic interpretation seems to be blocked: both (488b) and (488b′) are interpreted non-generically. This seems to be a more generally property of sentences with exclusive disjunction. Recall that, for convenience, we no longer indicate the elided relative clause in the first conjunct.

(488) • Coordinated plurals with two definite articles
  a. %De jongens of de meisjes die te laat komen, worden gestraft.
      the boys   or the girls   who too late come   are   punished
  a′. %De jongens of de meisjes die te laat kwamen, worden gestraft.
      the boys   or the girls   who too late come   are   punished
  b. %(Óf) de jongens óf de meisjes die te laat komen,   worden gestraft
      either the boys   or the girls   who too late come   are   punished
  b′. %(Óf) de jongens óf de meisjes die te laat kwamen, worden gestraft.
      either the boys   or the girls   who too late came   are   punished

The (a)-examples in (489) show that disjunctively coordinated indefinite plurals cannot be used in non-generic contexts on their (preferred) inclusive reading, and, again, we see that there is no difference in this respect with examples without a coordinated antecedent: *Jongens die te laat komen/*kwamen worden gestraft*. The (b)-examples in (489) with the (dispreferred) exclusive reading are marginal at best: this follows from our earlier observations that exclusive *óf* triggers a non-generic reading and that indefinite plural subjects in examples like (489) must be interpreted generically. These two requirements cannot be met at the same time.

(489) • Coordinated indefinite plurals
  a. Jongens of meisjes die te laat komen,   worden gestraft.
      boys or girls   who too late come   are punished
      'Boys or girls who are late will be punished.'
  a′. *Jongens of meisjes die te laat kwamen,   worden gestraft.
      boys or girls   who too late came   are punished
  b. ??(Óf) jongens óf meisjes die te laat komen,   worden gestraft.
      either boys or girls   who too late come   are punished
      'Boys or girls who are late will be punished.'
  b′. ??(Óf) jongens óf meisjes die te laat kwamen, worden gestraft.
      either boys or girls   who too late came   are punished

II. Non-restrictive relative clauses

Example (490) provides cases with coordinated plurals with a single definite article, which only allow a coordinated antecedent reading. The use of the present tense in (490a) seems to favor a generic reading, but (490b) shows that these coordinated plurals can also be found in non-generic contexts.

(490) • Coordinated plurals with a single definite article
  a. De studenten of scholieren, die weinig geld hebben, krijgen korting.
      the students or pupils   who little money have   get   discount
      'The students or pupils, who have little money, get a reduction.'
  b. De studenten of scholieren, die weinig geld hadden, kregen korting.
      the students or pupils   who little money had   got   discount
      'The students or pupils, who had little money, got a reduction.'

Giving judgments seems a bit harder in the case of (491) and (492) given that the inclusive reading in the (a)-examples is marked anyway, but it seems that the generic and non-generic reading give rise to more or less the same result. The exclusive reading in the (b)-examples is preferred: these do not allow a generic reading, which is due to the fact that exclusive *óf* does not seem to be compatible with it.

(491)   • Coordinated plurals with two definite articles
      a.   [?]De studenten of de scholieren, die weinig geld hebben, krijgen/kregen korting.
           the students or the pupils   who little money have get/got discount
           'The students or the pupils, who don't have much money, get/got a reduction.'
      b.   (Óf) de studenten óf de scholieren, die weinig geld hebben,
           or the students   or the pupils   who little money have
           krijgen/kregen korting.
           get/got   discount
           'Either the students or the pupils, who don't have much money, get/got a reduction.'

(492)   • Coordinated singulars with two definite articles
      a.   ^{??}De student of de scholier, die weinig geld heeft, krijgt/kreeg korting.
           the student or the pupil   who little money has gets/got   discount
           'The student or the pupil, who doesn't have much money, gets/got a reduction.'
      b.   (Óf) de scholier óf de student, die weinig geld heeft, krijgt/kreeg korting.
           either the student or the pupil   who little money has gets/got discount
           'Either the student or the pupil, who doesn't have much money, gets/got a reduction.'

Like all indefinite plurals, the coordinated indefinite plurals in (493a) must normally be interpreted generically. The markedness of (493b) is therefore due to the fact that exclusive *óf* is not compatible with this generic reading.

(493)   • Coordinated indefinite plurals
      a.   Studenten of scholieren, die weinig geld hebben, krijgen korting.
           students or pupils   who little money have   get   discount
           'Students or pupils, who don't have much money, get a reduction.'
      b.   ^{??}Óf studenten óf scholieren, die weinig geld hebben, krijgen korting.
           either students or pupils   who little money have get discount

Example (494a) with coordinated indefinite singulars is also preferably interpreted generically. Example (494b), on the other hand, seems incompatible with this reading; the noun phrases are rather construed specifically.

(494)   • Coordinated singulars with two indefinite articles
      a.   [Een student of een scholier, die weinig geld heeft/hebben], krijgt korting.
           a student or a pupil   who little money has/have   gets   discount
           'A student or a pupil, who doesn't/don't have much money, gets a reduction.'
      b.   [(Óf) een scholier óf een student, die weinig geld heeft], krijgt korting.
           either a student or a pupil   who little money has gets discount
           'Either a student or a pupil, who doesn't have much money, gets a reduction.'

3.3.2.5.3.4. Mixed antecedents

This section is concerned with relativized constructions in which the two conjuncts of the coordinated antecedent differ with regard to gender, number, definiteness and/or quantification. We will see that many of these constructions are not ambiguous, as the form of the relative pronoun (gender, number) allows only one reading.

I. Gender

Noun phrases that differ in gender cannot form a coordinated antecedent of a restrictive relative clause, due to the fact that there will always be a mismatch between the relative pronoun and one of the conjuncts. In (495a&b), for example, the non-neuter pronoun *die* 'who/that' does not match the gender feature of the neuter noun *meisje* and the neuter relative pronoun *dat* 'who/that' does not match the gender of the non-neuter noun *jongen*. Note that this gender distinction cannot be neutralized by using the plural relative pronoun *die* 'who/that' since that would create a mismatch in number with the full coordinated noun phrase; disjunctive coordination of singular noun phrases results in singular DPs. As a result, only the non-coordinated antecedent readings in the primed examples of (495) are acceptable.

(495)   • Coordinated singulars: different genders
    a. *[Een jongen of een meisje die/dat te laat komt], wordt gestraft.
         a boy or a girl   who too late comes   is   punished
    a′. Een jongen of [een meisje dat te laat komt],   wordt gestraft.
         a boy   or   a girl   who too late comes is   punished
         'A boy or a girl who is late will be punished.'
    b. *[De jongen of het meisje die/dat te laat komt], wordt gestraft.
          the boy or the girl   who too late comes   is   punished
    b′. De jongen of [het meisje dat te laat komt],   wordt gestraft.
         the boy   or   the girl   who too late comes is   punished
         'The boy or the girl who is late will be punished.'

The gender distinction in the pronoun is of course neutralized when the conjuncts are plural. As a result the examples in (496) do allow the coordinated antecedent reading: the two (a)-examples with indefinite conjuncts are both impeccable; the same seems to hold for the (b)-examples, although we have seen that examples like (496b) are rejected by some speakers.

(496)   • Coordinated plurals: different genders
    a. [Jongens of meisjes die te laat komen], worden altijd   gestraft.
         boys or girls who   too late come   are   always   punished
         'Boys or girls who are late are always punished.'
    a′. Jongens of [meisjes die te laat komen], worden altijd gestraft.
    b. %[De jongens of de meisjes die te laat komen], worden altijd   gestraft.
          the boys or the girls   who too late come   are   always   punished
         'The boys or the girls who are late are always punished.'
    b′. De jongens of [de meisjes die te laat komen], worden altijd gestraft.

Examples (462) and (464) from Section 3.3.2.5.3.1 have shown that coordinated constructions with one article allow a coordinated antecedent reading only. Since this reading is not available for constructions in which the singular elements differ in gender, we expect these constructions to be unacceptable on any reading. Example (497a) shows that this is indeed the case; example (497b) is, of course, also excluded due to the fact that the non-neuter article *de* does not agree in gender with the neuter noun *meisje* 'girl'.

(497) a. *Een jongen of meisje die/dat zich heeft ingeschreven, krijgt korting.
           a boy or girl   who REFL has registered   gets   discount
     b. *De jongen of meisje die/dat zich heeft ingeschreven, krijgt korting.
           the boy or girl   who REFL has registered   gets   discount

   The examples in (498a&b) show that the coordinated antecedent reading is not available for disjunctively coordinated singulars differing in gender in the case of non-restrictive relative clauses. The plural counterparts of these examples in (499a&b) are again acceptable.

(498)   • Coordinated singulars: different genders
     a. *Het houden van [een kat of een hondje, die/dat niet veel overlast geeft],
          the keeping of   a cat or a dog$_{dim}$ which not much trouble gives
          is toegestaan.
          is prt.-allowed
     a′. Het houden van een kat of [een hondje, dat niet veel overlast geeft], is toegestaan.
          'The keeping of a cat or a little dog, which doesn't give much trouble, is allowed.'
     b. *We mogen [de kat of het hondje, die/dat niet veel overlast geeft], houden.
          we may   the cat or the dog$_{dim}$ which not much trouble gives   keep
     b′. We mogen de kat of [het hondje, dat niet veel overlast geeft], houden.
          'We are allowed to keep the cat or the little dog, which doesn't give much trouble.'

(499)   • Coordinated plurals: different genders
     a. Het houden van [katten of honden, die niet veel overlast geven], is toegestaan.
          the keeping of   cats or dogs   which not much trouble give is prt.-allowed
          'The keeping of cats or dogs, which don't give much trouble, is allowed.'
     a′. Het houden van katten of [honden, die niet veel overlast geven], is toegestaan.
     b. %We mogen [de katten of de honden, die niet veel overlast geven], houden.
          we may   the cats or the dogs   which not much trouble give keep
          'We are allowed to keep the cats or the dogs, which didn't give much trouble.'
     b′. We mogen de katten of [de honden, die niet veel overlast geven], houden.

Examples (469) and (471) in Section 3.3.2.5.3.1 have shown that coordinated constructions with one article allow a coordinated antecedent reading only. Since this reading is not available for constructions in which two singular elements that differ in gender, we expect these constructions to be unacceptable on any reading. As shown in example (500), this turns out to be the case.

(500) a. *Het houden van   een kat of een hondje, die/dat niet veel overlast geeft,
       the keeping of   a cat or a dog_{dim},   which not much trouble gives,
       is toegestaan.
       is prt.-allowed
   b. *We mogen   de kat of het hondje, die/dat niet veel overlast geeft,   houden.
       we may   the cat or the dog_{dim}   which not much trouble gives   keep

II. Number

This subsection discusses cases in which the two conjuncts differ in number. We start with restrictive relative clauses. Disjunctive coordination is not possible if the coordinated noun phrases act as the subject of the clause. This has nothing to do with the presence of the relative but with the fact illustrated in (501) that the finite verb of the main clause has to agree with both conjuncts. This holds regardless of the order of the conjuncts, although only one order is given here.

(501) a. *[De mannen of de jongen] werden/werd niet toegelaten.
       the men or the boy   were/was   not prt.-admitted
   b. *[Twee mannen of een jongen] werden/werd niet toegelaten.
       two men or a boy   were/was   not prt.-admitted

When the coordinated noun phrases act as the object of the clause and the relative pronoun as the subject of the relative clause, as in (502), the coordinated antecedent reading is blocked due to the fact that the finite verb of the relative clause must agree in number with both elements of the coordination, thus requiring these elements to have the same number. The primed examples show that a non-coordinated antecedent reading is possible; in that case, the finite verb in the relative clause has to agree with the second conjunct of the coordination only.

(502) a. *[De mannen of de jongen die te laat kwamen/kwam], liet   hij niet binnen.
          the men or the boy   who too late came/came   let   he not inside
   a′. De mannen of [de jongen die te laat kwam], liet hij niet binnen.
        the men   or the boy   who too late came let   he   not inside
        'The men or the boy who came too late, he did not let in.'
   b. *[Twee mannen of een jongen die te laat kwamen/kwam], liet   hij niet binnen.
          two men or a boy   who too late came/came   let   he not inside
   b′. Twee mannen of [een jongen die te laat kwam], liet   hij niet binnen.
        two men   or a boy who too late came/came   let   he not inside
        'Two men or a boy who came too late, he did not let in.'

Where neither the antecedent nor the relative pronoun functions as subject, the coordinated antecedent reading seems acceptable, although finding the intended interpretation may sometimes be somewhat difficult. This is shown in (503a&b). The non-coordinated antecedent readings, given in (503a′&b′), are also acceptable.

(503) a. [?][De mannen of de jongen die we niet kenden], liet   hij niet binnen.
          the men or the boy   who we not knew   let   he not inside
   a′. De mannen of [de jongen die we niet kenden], liet hij niet binnen.

b. ?[Twee mannen of een jongen die we niet kenden], liet hij niet binnen.
   two men or a boy   who we not knew   let   he not inside

b′. Twee mannen of [de jongen die we niet kenden], liet hij niet binnen.

Disjunctive coordination of a plural and a singular element modified by a non-restrictive relative clause renders results that are comparable the constructions with restrictive relative clauses discussed in examples (502)-(503), although the acceptable constructions tend to be more marked. This is illustrated in examples (504).

(504) a. *[De mannen of de jongen, die te laat kwamen/kwam], liet hij niet binnen.
           the men or the boy   who too late came/came   let   he not inside

a′. ?De mannen of [de jongen, die te laat kwam], liet hij niet binnen.
    the men   or   the boy who too late came   let he not inside

b. *[Twee mannen of een jongen, die te laat kwamen/kwam], liet hij niet binnen.
    two men or a boy   who too late came/came   let he not inside

b′. ?Twee mannen of [een jongen, die te laat kwam], liet hij niet binnen.
    two men   or a boy   who too late came let   he not inside

c. ?[Twee mannen of een jongen, die we niet kenden], liet hij niet binnen.
    two men   or a boy   who we not knew   let   he not inside

c′. ?Twee mannen of [de jongen, die we niet kenden], liet hij niet binnen.
    the men   or the boy   who we not knew   let   he not inside

III. Definiteness

With respect to definiteness, restrictive and non-restrictive relative clauses pattern alike. If two disjunctively coordinated elements differ with regard to definiteness, only the non-coordinated antecedent reading is available. The coordinated antecedent reading is never possible. The examples in (505) and (506) show that this is true regardless of the function of antecedent in the main clause or the order of the two elements.

(505)   • Restrictive relative clauses with mixed antecedents (w.r.t. definiteness)
      a. *We nemen gewoon [een bus of de tram die in de buurt komt].
      a′. We nemen gewoon een bus of [de tram die   in de buurt komt].
          we take   simply a bus or the tram which close   comes
          'We simply take a bus or the tram which comes near.'
      b. *[De student of een scholier die niet zo veel geld heeft], krijgt korting.
      b′. De student of [een scholier die weinig geld heeft], krijgt korting.
          the student or   a pupil   who little money has   gets discount
          'The student or a pupil who has little money, gets a reduction.'

(506)   • Non-restrictive relative clauses with mixed antecedents (w.r.t. definiteness)
      a. *We nemen gewoon [een bus of de tram, die in de buurt komt].
      a′. We nemen gewoon een bus of [de tram, die   in de buurt komt].
          we take   simply a bus or the tram which close   comes
          'We simply take a bus or the tram, which comes near.'
      b. *[De student of een scholier, die niet zo veel geld had], kreeg korting.
      b′. De student of [een scholier, die weinig geld had], kreeg korting.
          the student or a pupil   who little money has got   discount
          'The student or a pupil, who has little money, got a reduction.'

IV. Quantification

The coordinated antecedent reading is only available in limited cases when the conjuncts are quantified. The examples in (507) and the primeless examples in (508) show that this reading is only fully acceptable when the two elements share the quantifier, in which case only the one-set reading is available. The primed examples in (508) show that the non-coordinated reading is possible when the conjuncts are independently quantified.

(507) a.   [De meeste jongens of meisjes die te laat komen], worden gestraft.
               the most boys or girls   who too late come are   punished
               'Most boys or girls who are late will be punished.'
      b.   [Elke student of scholier die zich heeft ingeschreven], krijgt korting.
               every student or pupil   who REFL has registered   gets discount
               'Every student or pupil who has registered, gets a reduction.'

(508) a.   [??][De meeste jongens of sommige meisjes die te laat komen], worden gestraft.
               the most boys or some girls   who too late come are punished
               'Most boys or some girls who are late will be punished.'
      a′.   De meeste jongens of [sommige meisjes die te laat komen], worden gestraft.
      b.   [??][Elke student of een enkele scholier die zich heeft ingeschreven], krijgt korting.
               every student or a single pupil   who REFL has registered   gets discount
               'Every student or a single pupil who has registered, gets a reduction.'
      b′.   Elke student of [een enkele scholier die zich heeft ingeschreven], krijgt korting.

When a quantified and non-quantified element are coordinated, the two elements cannot form one antecedent, as can be seen in examples (509a&b); these cases only allow the non-coordinated antecedent reading in the primed examples.

(509) a.   *[De jongens of enkele meisjes die te laat kwamen], werden gestraft.
      a′.   De jongens of [enkele meisjes die te laat kwamen], werden gestraft.
               the boys   or   some girls   who too late came   were   punished
               'The boys or some girls who were late were punished.'
      b.   *[Alle leden of de niet-leden die zich hadden ingeschreven], kregen korting.
      b′.   Alle leden   of [de niet-leden   die zich hebben ingeschreven],
               all members or   the non-members who REFL have registered
               krijgen korting.
               get   discount
               'All members or the non-members who have registered get a reduction.'

In the case of non-restrictive relativization the coordinated antecedent reading is also possible, although the possibilities are even more restricted than in the case of restrictive relativization. As pointed out in Section 3.3.2.5.2.4, sub IV, non-restrictive relative clauses are always somewhat marginal with many quantified antecedents. In (510), we therefore only give examples that do allow modification by a non-restrictive relative clause. Example (510a) shows that a coordinated antecedent reading is only fully acceptable if the two elements share the quantifier, in which case we get the one-set reading. Examples (510b&c) show that combinations with different quantifiers exclude the coordinated antecedent reading,

but do allow the non-coordinated antecedent reading, in which case we are dealing with a two-set reading.

(510) a.   We mogen [enkele honden of katten, die niet veel overlast geven], houden.
           we may   some dogs or cats   which not much trouble give keep
           'We are allowed to keep some dogs or cats, which don't give much trouble.'
    b.   *We mogen [enkele honden of meerdere katten, die niet veel overlast geven], houden.
    c.   We mogen enkele honden of [meerdere katten, die niet veel overlast geven],
           we may   some dogs   or various cats   which not much trouble give
           houden.
           keep
           'We are allowed to keep some dogs, or various cats, which don't give much trouble.'

3.3.2.5.3.5. Conclusion

This section has shown that relative clauses that are part of a coordinated noun phrase with the disjunctive coordinator *of* are three ways ambiguous. The relative clause may be associated with all conjuncts (the coordinated antecedent reading) or with the final conjunct (the non-coordinated antecedent reading). In the first case the ambiguity between inclusive and exclusive *of* may introduce a further ambiguity between an inclusive (one-set) reading and an exclusive (multiple set) reading. When the coordinated phrase has only a single article, only the inclusive reading is available, whereas the exclusive reading is rather associated with constructions with multiple articles. Since the internal structure of the constructions with *of* are more or less identical to those with the conjunction *en*, we will not discuss the representation associated with the different readings here, but simply refer the reader to Section 3.3.2.5.2.5 for relevant discussion.

    To conclude, we briefly summarize the possible combinations of elements in disjunctively coordinated antecedents. If the two elements differ in gender, the coordinated antecedent reading is only available when these elements are in the plural. Even then, some speakers object to using a restrictive relative clause with coordinated antecedent in which each conjunct contains a definite article. Combinations of two elements differing in number are only acceptable on a coordinated antecedent reading if the antecedent does not function as the subject of the matrix clause and when the relative pronoun is not the subject of the relative clause. As for differences in definiteness, these are not acceptable on a coordinated antecedent reading. If two quantified elements are combined, the coordinated antecedent reading is only fully acceptable in constructions with a single quantifier: when more quantifiers are included, restrictive relative clauses give rise to a marked result; non-restrictive relative clauses give rise to ungrammaticality.

3.3.3. *Infinitival clauses*

Like finite relative clauses, infinitival clauses may provide information about an antecedent. Some examples are given in (511), where the first infinitival clause is interpreted as restrictive and the second as non-restrictive: in (511a) the infinitival clause restricts the denotation of the modified noun phrase, whereas in (511b) it

provides additional information about the antecedent. Note that some speakers prefer an appositive reading for (511b), for which reason we added the question mark; cf. Section 3.1.3.

(511)   • Restrictive and non-restrictive infinitival clauses
    a. Dit is een machine [om   hout   mee   te schuren].
        this is a machine   COMP wood with   to sand
        'This is a machine to sand wood with.'
    b. $^?$Zo'n machine, [om   hout mee   te schuren], is vrij goedkoop.
        such a machine COMP wood with   to sand   is fairly cheap
        'Such a machine, to sand wood with, is fairly cheap.'

In this modifying function, infinitival clauses are always introduced by the infinitival complementizer *om*, and, as usual with *om*-infinitives, the infinitival verb is obligatorily accompanied by the infinitival marker *te*. The infinitival clauses contain two interpretative gaps. The first gap is the implied subject °PRO, which we find in all infinitival *om* + *te*-infinitives and which receives an arbitrary interpretation in the examples under discussion. The second interpretative gap in (511) is the complement of the instrumental PP headed by *mee* 'with'; it is generally assumed that this complement is some empty category that is coindexed with the modified noun phrase *een/zo'n machine*, and which we will henceforth refer to as empty °operator (abbreviated as OP in the examples). It is reasonable to assume that this empty operator has moved out of the PP into clause-initial position by means of °R-extraction since the preposition surfaces in its stranded form *mee*, not in its non-stranded form *met*. This all amounts to saying that the representations of the examples in (511) are as indicated in (512), where IC stands for infinitival clause and the coreference and antecedent-trace relations are indicated by means of superscripts.

(512) a. Dit is een machine$_i$ [$_{IC}$ OP$_i$ om PRO$_{arb}$ hout [$_{PP}$ mee t_i] te schuren].
    b. Zo'n machine$_i$, [$_{IC}$ OP$_i$ om PRO$_{arb}$ hout [$_{PP}$ mee t_i] te schuren], is vrij goedkoop.

It seems natural to assume that the empty operator is a covert relative pronoun and that the infinitival clauses in (511) are in fact relative clauses, but we will see later in this section that there are problems with this assumption. The examples in (513) furthermore show that the distinction between restrictive and non-restrictive clauses is not exhaustive, and that we have to distinguish two types of restrictive infinitival clause.

(513)   • Two types of restrictive infinitival clause
    a. Dit is een machine [om   hout   mee   te schuren].   [type I]
        this is a machine   COMP wood with   to sand
        'This is a machine to sand wood with.'
    b. We zoeken een meisje [om   op onze baby te passen].   [type II]
        we   search   a girl   COMP after our baby to look
        'We are looking for a girl to look after our baby.'

The two examples differ in the number of interpretative gaps they contain. We have already seen above that (513a) has the representation in (512a), repeated below as

(514a), and contains two interpretative gaps, the implied subject PRO and an empty operator that is coreferential with the antecedent of the clause. Example (513b), on the other hand, does not contain an empty operator, and it is the implied subject PRO that is interpreted as coreferential with the antecedent of the infinitival clause; since there is no evidence that movement is involved in this construction, we will assign (513b) the representation in (514b). Infinitival clauses of the form in (514b) cannot be used non-restrictively.

(514) a.   Dit is een machine [$_{IC}$ OP$_i$ om PRO$_{arb}$ hout [$_{PP}$ mee t_i] te schuren].   [type I]
      b.   We zoeken een meisje [$_{IC}$ om PRO$_i$ op onze baby te passen].   [type II]

The three types of infinitival clause will be discussed more extensively in separate sections below. Section 3.3.3.4 concludes with a brief discussion of two constructions that can be easily confused with the infinitival clauses discussed above.

3.3.3.1. Restrictive infinitival clauses containing an empty operator

This section discusses restrictive infinitival clauses containing an empty operator in more detail. We start with the question whether these infinitival clauses can be considered relative clauses. After that we address whether there are any restrictions on the antecedent of the empty operator or the infinitival verb.

I. Are restrictive infinitival clauses with an empty operator relative clauses?

The fact that infinitival clauses of the type in (512/514a) arguably contain an empty operator that is moved into clause-initial position suggests that we are dealing with regular relative clauses, where the relative pronoun simply has no phonetic realization. There are, however, several problems for this suggestion. The first is only circumstantial, and is concerned with the fact that German actually cannot readily use infinitival clauses in this modifying function (Kester 1994: 3.3.4.4), which is clear from the fact that a Dutch example like (515a) cannot be directly translated into German, as shown by the unacceptability of (515b). Given the fact that Dutch and German are so closely related, it would be very surprising if the first could make use of infinitival relative clauses, but the latter could not.

(515) a.   Ik zoek   een boek$_i$ [OP$_i$ om PRO morgen t_i te lezen].
             I   search a book   COMP   tomorrow to read
             'I am looking for a book to read tomorrow.'
      b.   *Ich suche ein Buch [um morgen zu lesen].

The second problem is a more serious one. As can be seen in (516a′&b′), infinitival clauses containing an empty operator can also occur in predicative position, an option that, as is shown in (517), does not exist for regular finite clauses. This suggests that the infinitival clause is comparable to the set-denoting adjectives in that it can be used both predicatively and attributively.

(516) a.   Dit   is een boek$_i$ [OP$_i$ om PRO in één adem   uit te lezen].
　　　　　 this is a book　　　　COMP　　 in one breath prt. to read
　　　　　 'This is a book to read out in the same breath.'
　　　a′. Dit boek$_i$ is [OP$_i$ om PRO in één adem   uit   te lezen].
　　　　　 this book is　　 COMP　　 in one breath prt. to read
　　　b.   Dit   is een boek$_i$ [OP$_i$ om t_i te zoenen].
　　　　　 this is a book　　　　 COMP to kiss
　　　　　 'This is an absolutely delightful book.'
　　　b′. Dit boek$_i$ is [OP$_i$ om PRO t_i te zoenen].
　　　　　 this book is　　 COMP　　　 to kiss
　　　　　 'This book is absolutely delightful.'

(517) a.   Dit is de jongen$_i$ [die$_i$ gisteren t_i ziek was].
　　　　　 this is the boy　　 who yesterday   ill　 was
　　　　　 'This is the boy that was ill yesterday.'
　　　b.   *Deze jongen$_i$ is [die$_i$ gisteren t_i ziek was].
　　　　　 this boy　　 is who yesterday ill　 was

A third problem is that infinitival clauses are often used in the presence of adjectives that may enter the so-called *easy-to-please* construction in the primed examples in (518), the analysis of which also involves an empty operator; see Section A6.5.4.1 for more discussion. Given the semantic similarities between the primeless and primed examples, it seems reasonable that the former are the attributive counterparts of the predicative constructions in the latter.

(518) a.   Dat is een gemakkelijk boek$_i$ [OP$_i$ om PRO t_i te lezen].
　　　　　 that is an   easy book　　　　　 COMP　　 to read
　　　　　 'That is an easy book to read.'
　　　a′. Dat boek$_i$ is gemakkelijk [OP$_i$ om PRO t_i te lezen].
　　　　　 that book is easy　　　　　 COMP　　 to read
　　　　　 'That book is easy to read.'
　　　b.   Dat is een leuke jongen$_i$ [OP$_i$ om PRO t_i te ontmoeten].
　　　　　 that is a nice boy　　　　　 COMP　　 to meet
　　　b′. Die jongen$_i$ is leuk [OP$_i$ om PRO t_i te ontmoeten].
　　　　　 that boy   is nice　 COMP　　 to meet

At this point German comes in again. It can be noted that German does not have *easy-to-please* construction of the type in (518a′&b′): *Das Buch ist einfach um zu lesen*. German does have constructions like *Das Buch ist einfach zu lesen* without the infinitival complementizer *um*, but these must clearly be analyzed as modal infinitives, which is also clear from the fact that the infinitive can be used in pronominal attributive position *das* (*leicht*) *zu lesende Buch*, where it is realized in the form of an attributively inflected present participle; cf. the discussion in 3.3.3.4, sub II. It therefore seems plausible to relate the ungrammaticality of (515b) to this fact; infinitival clauses are actually more like infinitival clauses in the *easy-to-please* construction than like regular relative clauses.

Leaving the precise analysis of the restrictive infinitival clauses in this section for future research, we may safely conclude from the discussion above that

infinitival clauses containing an empty operator are either set-denoting phrases that can be used either predicatively or attributively, or belong to the adjectival part of an *easy-to-please* construction that can be used in these functions. Despite appearances, there is no clear evidence that infinitival clauses are relative clauses.

II. Restrictions on the antecedent of the empty operator

Given the conclusion that the infinitival clauses under discussion are not relative clauses, and that the empty operator is therefore not a relative pronoun, it does not come as a surprise that there are no restrictions on the antecedent in terms of number, gender or animacy. This is illustrated in Table 6.

Table 6: The antecedent of the empty operator

		SINGULAR	PLURAL
NON-NEUTER	ANIMATE	*een man om op te bouwen* a man COMP on to build 'a man to rely on'	*mannen om op te bouwen* men COMP on to build 'men to rely on'
	INANIMATE	*een dag om nooit te vergeten* a day COMP never to forget 'a day never to be forgotten'	*dagen om nooit te vergeten* days COMP never to forget 'days never to be forgotten'
NEUTER	ANIMATE	*een meisje om op te bouwen* a girl COMP on to build 'a girl to rely on'	*meisjes om op te bouwen* girls COMP on to build 'girls to rely on'
	INANIMATE	*een boek om direct te lezen* a book COMP at once to read 'a book to read at once'	*boeken om direct te lezen* books COMP at once to read 'a book to read at once'

There do not seem to be any further restrictions either: the antecedent can be definite, indefinite, or quantified. Thus, while in Table 6 all antecedents are indefinite, the antecedent in (519a) is a definite DP and in (519b&c) the antecedent is quantified.

(519) a. Jan is de man$_i$ [OP$_i$ om PRO het [$_{PP}$ aan t_i] te vragen].
　　　　 Jan is the man　　　COMP　　it　　to　　　to ask
　　　　 'Jan is the man to ask it to.'
　　b. Jan is geen man$_i$ [OPi om PRO [$_{PP}$ op t_i] te bouwen].
　　　　 Jan is no man　　　　COMP　　　on　　to build
　　　　 'Jan isn't a man you can rely on.'
　　c. Ik heb alle boeken$_i$ [OP$_i$ om PRO t_i te lezen] in mijn kamer gelegd.
　　　　 I have all books　　　　COMP　　　to read　　in my room　　put
　　　　 'I have put all books to read in my room.'

For completeness' sake, it can be noted that noun phrases modified by a restrictive infinitival clause often have a nominal compound as their counterpart in which the verb of the infinitival clause is used as the first morpheme. The relation between the two morphemes of these compounds is typically one of purpose. Some examples are given in (520).

(520) a. een zaal om in te lezen   a′. een leeszaal
          a room to read in   a reading room
     b. een machine om mee te schuren   b′. een schuurmachine
          a machine to sand with   a sanding machine
     c. een hond om mee te waken   c′. een waakhond
          a dog to watch with   a watchdog

III. Restrictions on the infinitive and the empty operator

There seem to be some restrictions on the types of verbs that can appear in the modifying infinitival clause, and the syntactic function of the empty operator. For obvious reasons, infinitival clauses with an empty operator normally do not occur when the infinitival verb is intransitive or unaccusative, as in (521a&b); of course, both examples are acceptable, but must be analyzed without an empty operator: in these examples it is the implied subject PRO that is interpreted as the element coreferential with the antecedent. It must be noted, though, that this restriction is not absolute; example (524) will show that there are means to circumvent this restriction.

(521)   • Intransitive verb
     a. Hij is geen jongen$_i$ [om PRO$_i$ hard   te werken].
          he   is no boy   COMP   hard   to work
          'He is not the kind of boy that works hard.'
     b. Dit is geen artikel$_i$ [om PRO$_i$ in een taalkundig tijdschrift te verschijnen].
          this is no article   COMP   in a linguistic journal   to appear
          'This is no article to appear in a linguistic journal.'

An infinitival clause gives rise to a perfect result when the infinitive is a transitive verb, as in (522a): in this case the empty operator corresponds to the direct object. When the verb is ditransitive, the result depends on the form of the indirect object; constructions with a nominal indirect object are much less acceptable than constructions with a prepositional indirect object. The (b)-examples show that for constructions in which the empty operator acts as the direct object, and the (c)-examples for cases in which it corresponds to the indirect object.

(522)   • Transitive and ditransitive verbs
     a. Dit is een boekenkast$_i$ [OP$_i$ om PRO zelf t_i in elkaar te zetten].
          this is a bookcase   COMP   oneself together to put
          'This is a bookcase one has to put together oneself.'
     b. ??Dit is geld$_i$ [OP$_i$ om PRO de kerk t_i te schenken].
          this is money   COMP   the church to donate
          'This is money meant to be donated to the church.'
     b′. Dit is geld$_i$ [OP$_i$ om PRO t_i aan de kerk te schenken].
          this is money   COMP   to the church to donate
          'This is money meant to be donated to the church.'
     c. *?Dit is een goed project$_i$ [OP$_i$ om PRO t_i geld   te geven].
          this is a good project   COMP   money   to give
     c′. Dit is een goed project$_i$ [OP$_i$ om PRO geld [$_{PP}$ aan t_i] te geven].
          this is a good project   COMP   money   to   to give
          'This is a good project to give money to.'

Given the fact that the empty operator can act as the complement of the preposition *aan* in (522c′), it will not come as a surprise that the result is also fine when the empty operator acts as the complement of a PP-complement of the verb as in (523a). Example (523b) shows that the empty operator may act as the complement of a locational predicate.

(523)   • Verbs with a PP/complement or locational predicate

    a.   Dit is een onderwerp$_i$ [$_{PP}$ OP$_i$ om PRO goed [$_{PP}$ over t_i] na   te denken].
          this is a topic   COMP   well   about   prt. to think
          'This is a topic to reflect on well.'

    b.   Dit is geen café$_i$ [OP$_i$ om PRO gezellig [$_{PP}$ in t_i] te zitten].
          this is not a bar   COMP   cozily   in   to sit
          'This is not a bar to sit in cozily.'

Finally, the empty operator may correspond to the complement of a PP-adjunct, provided at least that this PP allows °R-extraction. Examples of this sort were already given in (520), and some more examples are given in (524). Note that when such adjuncts are present, the construction can also appear with intransitive and unaccusative verbs.

(524)   • Verbs with a locational PP/adjunct

    a.   Dit is een stoel$_i$ [OP$_i$ om PRO lekker [$_{PP}$ in t_i] te lezen].
          this is a chair   COMP   cozily   in   to read

    b.   Dit   zijn schoenen$_i$ [OP$_i$ om PRO [$_{PP}$ mee t_i] te dansen].
          these are shoes   COMP   with   to dance

    c.   Dit   is een goede omgeving [OP$_i$ om PRO [$_{PP}$ in t_i] te herstellen].
          this is a good environment   COMP   in   to recuperate

The examples in (525) and (526) show that the construction is excluded when the adjunct PP does not allow R-extraction. First, consider (525b) which illustrates that it is not possible to strand the preposition *in* in the relative construction; relativization is possible but it requires that the full PP is replaced by the locational pro-form *waar*.

(525) a.   We gaan gezellig iets   in dit café drinken.
          we go   cozily   something in this bar drink
          'We are going to drink something cozily in this bar.'

    b.   het café$_i$ [waar$_i$ we gezellig iets   [$_{PP}$ (*in) t_i] gaan drinken]
          the bar   where we cozily   something   in   go   drink
          'the bar where we are going to drink something cozily'

Example (526a) shows that it is not possible to have the infinitival construction with the stranded preposition, which seems to constitute additional evidence in favor of our earlier conclusion that the empty operator must be moved into clause-initial position. More surprising is that (526b) seems unacceptable as well: the most prominent, but incoherent, reading of this example seems to be the one which *een café* functions as the direct object of *drinken* 'to drink'. We leave open whether the construction must be considered ungrammatical under the intended reading given that we did find a small number of examples like this on the internet.

(526) a. *Dit is een café$_i$ [OP$_i$ om PRO gezellig [$_{PP}$ in t_i] te drinken].
  this is a bar   COMP   cozily   in   to drink

  b. ??Dit is een café$_i$ [OP$_i$ om PRO gezellig t_i te drinken].
  this is a bar   COMP   cozily   to drink

3.3.3.2. Non-restrictive infinitival clauses

Our discussion of non-restrictive infinitival clauses will be brief given that they behave in most respects similarly to the non-restrictive ones discussed in 3.3.3.1; we will restrict our attention to a difference that seems related to the fact that, instead of restricting the denotation of the antecedent, the non-restrictive infinitival clause serves to provide additional information about the referent of the antecedent. Recall that the question marks in (527) serve to indicate that the infinitival clauses in these cases are likely to receive an appositional rather than a non-restrictive reading.

(527) a. ?Deze kasten$_i$, [OP$_i$ om PRO zelf t_i in elkaar te zetten], zijn niet duur.
  these closets   COMP   oneself together to put   are not expensive
  'These closets, which one has to put together oneself, aren't too expensive.'

  b. ?Dit cadeau$_i$, [OP$_i$ om PRO t_i aan Marie te geven], heb ik in Londen gekocht.
  this present   COMP   to Marie to give   have I in London bought
  'This present, meant for Marie, I bought in London.'

  c. ?Zo'n machine$_i$, [OP$_i$ om PRO hout   [$_{PP}$ mee t_i] te schuren], is goedkoop.
  such a machine   COMP   wood   with to sand   is cheap
  'Such a machine, to sand wood with, is cheap.'

Since the antecedent of a non-restrictive infinitival clause must be identifiable independently from the information provided in the infinitival clause, these antecedents typically contain a definite determiner, like the demonstratives in (527a&b), or a type denoting expression like *zo'n* 'such a' in (527c); indefinite determiners or quantifiers generally give rise to a degraded result.

(528) a. *?Een machine$_i$, [OP$_i$ om PRO hout mee t_i te schuren], is vrij goedkoop.
  a machine   COMP   wood with to sand   is fairly cheap

  b. *?Veel kasten$_i$, [OP$_i$ om PRO zelf t_i in elkaar te zetten], zijn niet duur.
  many closets   COMP   oneself together to put   are not expensive

Note that in examples like (529), in which the modified noun phrase occupies the right periphery of the clause, the antecedent may contain an indefinite article. In this case, however, the *om*-clause is likely to be interpreted as an afterthought. This is clear from the fact illustrated in the (b)-examples that in the corresponding embedded clauses the infinitival clause cannot precede the verb in clause-final position.

(529) a. Ik gaf   hem een machine$_i$, [OP$_i$ om PRO hout [$_{PP}$ mee t_i] te schuren].
  I gave him a machine   COMP   wood   with to sand
  'I gave him a machine, to sand wood with.'

  b. dat ik hem een machine gaf, om PRO hout mee te schuren.

  b′. *dat ik hem een machine, om PRO hout mee te schuren, gaf.

3.3.3.3. Restrictive infinitival clauses without an empty operator

This section will discuss restrictive infinitival clauses that do not contain an empty operator. As previously mentioned, these infinitival clauses cannot be used non-restrictively. This is illustrated here in (530).

(530) a. Zo'n machine$_i$ [om PRO$_i$ hout te schuren] is vrij goedkoop.
     such a machine COMP   wood to sand   is fairly cheap
   b. $^{*?}$Zo'n machine$_i$, [om PRO$_i$ hout te schuren], is vrij goedkoop.

I. Are non-restrictive infinitival clauses without an empty operator relative clauses?

Section 3.3.3.1 has argued that infinitival clauses with an empty operator are not relative clauses on the basis of the fact that they can be used predicatively, which is never possible in the case of relative clauses. This argument does not hold, however, for infinitival clauses without an empty operator, which is clear from the fact that the primed examples in (531) are not interpretable.

(531) a. We zoeken een meisje$_i$ [om PRO$_i$ op onze baby te passen].
     we   search a girl   COMP   after our baby to look
   a′. *Dit meisje$_i$ is [om PRO$_i$ op onze baby   te passen].
      this girl   is COMP   after our baby to look
   b. Zo'n machine$_i$ [om PRO$_i$ hout te schuren] is vrij goedkoop.
     such a machine COMP   wood to sand   is fairly cheap
   b′. *Deze machine$_i$ is [om PRO$_i$ hout   te schuren].
      this machine   is COMP   wood to sand

The question whether non-restrictive infinitival clauses without an empty operator are relative clauses therefore cannot be decided in this way. In order to come closer to an answer, we may ask ourselves the basic question whether the modifying function of the infinitival clause is brought about by the coreference relation between PRO and the modified noun phrase, or whether this relation is just epiphenomenal due to the fact that often PRO must have an antecedent in order to be interpretable? If the infinitival clause is a regular relative clause we must conclude that the former is the case. However, there are examples of modifying infinitival clauses that seem to refute this hypothesis. In (532), for example, it seems clear that the infinitival clauses are used as restrictive modifiers of the noun phrase *(de) tijd* '(the) time'. Nevertheless, the modified noun phrase is not coreferential with PRO (nor with an empty operator, since the noun phrase does not seem to play any semantic role within the infinitival clause). These examples therefore suggest that modification by the infinitival clause is not related to the coreference relation between the modified noun phrase and PRO, which, in turn, suggests that modifying infinitival clauses are not relative clauses. More potential examples of this sort are given in (533).

(532) a. Het is tijd [om PRO te vertrekken].
     it   is time COMP   to leave
   b. De tijd   [om PRO   te vertrekken] is aangebroken.
     the time COMP   to leave   has come

(533) a. Er zijn   verschillende manieren [om PRO   het probleem   op te lossen].
        there are several ways   COMP   the problem   prt. to solve
        'There are various ways to solve the problem.'
    b. Hij toonde me de juiste manier [om PRO   het te doen].
        he   showed me the right way   COMP   it   to do
        'He showed me the right way to do it.'

II. Restrictions on the antecedent

Whatever the correct analysis of the non-restrictive infinitival clauses under discussion is, it seems clear that they do not contain an overt relative element. It therefore does not come as a surprise that there are no restrictions on the antecedent in terms of number or gender. This is illustrated in Table 7.

Table 7: The antecedent of PRO

	SINGULAR	PLURAL
NON-NEUTER	*een man om het huis te schilderen* a man COMP the house to paint 'a man to paint the house'	*mannen om het huis te schilderen* men COMP the house to paint 'men to paint the house
NEUTER	*een meisje om op de baby te passen* a girl COMP after the baby to look 'a girl to look after the baby'	*meisjes om op de baby te passen* girls COMP after the baby to look 'girls to look after the baby'

In many cases, it is difficult to find examples in which the antecedent of PRO is inanimate, but this is due to the fact that PRO functions as the subject of an infinitival clause, and is therefore typically agentive, hence animate. However, when we are dealing with an unaccusative verb, as in (534a), or an infinitival clause in the passive voice, as in (534b), the result of having an inanimate antecedent is fully acceptable. For completeness' sake, observe that the corresponding active construction of (534b) in (534b′) involves an infinitival clause featuring an empty operator.

(534) a. Dit is geen artikel$_i$ [om PRO$_i$ in een taalkundig tijdschrift te verschijnen].
        this is no article   COMP   in a linguistic journal   to appear
    b. Dit is een serie$_i$ [om PRO$_i$ snel herhaald te worden].
        this is a series   COMP   soon repeated to be
        'This is a series to be run again soon.'
    b′. Dit is een serie$_i$ [OP$_i$ om PRO$_{arb}$ snel t_i te herhalen].
        this is a series   COMP   soon   to repeat
        'This is a series to run again soon.'

Restrictive infinitival clauses without an operator are not readily used with definite noun phrases unless they are used as a nominal predicate of, e.g., a copular construction. This is clear from the contrast between the two (a)-examples in (535). The (b)-examples illustrate that a similar contrast does not arise in the case of indefinite noun phrases.

(535) a. $^{??}$De man$_i$ [om PRO$_i$ het probleem op   te lossen]   is niet te vinden.
the man COMP   the problem prt. to solve   is not to find
'The man to solve the problem is not to be found.'

a'. Jan is (typisch) de man$_i$ [om PRO$_i$ het probleem op   te lossen].
Jan is typically the man COMP   the problem   prt. to solve

b'. Iemand$_i$ [om PRO$_i$ het probleem op   te lossen] is niet snel   te vinden.
someone COMP   the problem prt. to solve   is not soon to find
'Someone to solve the problem cannot be found soon.'

b. Jan is (typisch/echt)   iemand$_i$ [om PRO$_i$ het probleem op   te lossen].
Jan is typically/really someone COMP   the problem   prt. to solve

III. Restrictions on the infinitive

There seem to be few restrictions on the infinitive, which is not surprising given that the antecedent is generally coreferential with the implied PRO subject of the infinitival clause. In (536a) we find an infinitival clause containing the intransitive verb *werken* 'to work' and an implied subject PRO coreferential with the antecedent *een type* 'a type'. Similar constructions can be found in (536b&c) with a copular and unaccusative verb, respectively. In (536d) the antecedent *een machine* 'a machine' is interpreted as the subject of the transitive verb *schuren* 'to sand', while in (536e), the antecedent *een bedrijf* 'a company' is interpreted as the subject of the ditransitive verb *geven* 'to give'.

(536) a. Marie is echt een type$_i$ [om PRO$_i$ te hard   te werken].
Marie is really a type   COMP   too hard to work
'Marie is really the kind of person to work too hard.'

b. Jan is echt   iemand$_i$ [om PRO$_i$ gelukkig te zijn].
Jan is really someone COMP   happy   to be
'Jan is really the kind of person to be happy.'

c. Dit is geen artikel$_i$ [om PRO$_i$ in een taalkundig tijdschrift te verschijnen].
this is no article   COMP   in a linguistic journal   to appear

d. Wat ik zoek   is een machine$_i$ [om PRO$_i$ hout   te schuren].
what I   search is a machine   COMP   wood to sand
'What I'm looking for is a machine to sand wood with.'

e. Dit is echt een bedrijf$_i$ [om PRO$_i$ geld   aan goede doelen te geven].
this is really a company COMP   money to good causes   to give
'This is really the kind of company that gives a lot of money to good causes.'

For unclear reasons, however, a dyadic unaccusative verb cannot be used as an infinitive in these restrictive infinitival clauses, as shown by the ungrammaticality of the examples in (537).

(537) a. *Dit is een reis$_i$ [om PRO$_i$ ons   goed te bevallen].
this is a trip   COMP   us   good to please

b. *Dit plan$_i$ [om PRO$_i$ ons te lukken] lijkt   niet te moeilijk.
this plan COMP   us   to succeed seems not to difficult

3.3.3.4. Two seemingly comparable constructions

This section discusses two construction types that can easily be confused with the modifying infinitival clauses in the previous sections. The first involves infinitival purpose clauses and the second the so-called modal infinitives.

I. Purpose clauses

Sentence-final infinitival clauses may easily be confused with adverbial purpose clauses, which may also take the form of an infinitival *om*-clause. A first difference between modifying infinitival clauses and purpose clauses is that the latter cannot contain an empty operator. So whereas example (538b) can be interpreted as a purpose clause, this reading is absolutely impossible in (538a).

(538)   We hebben de nieuwe software aangeschaft ...
           we   have   the new software   prt.-acquired
    a.   ... [OP$_i$ om PRO het probleem [$_{PP}$ mee t_i] op   te lossen].
                     COMP   the problem   with   prt. to solve
           'We acquired the new software to solve the problem with.'
    b.   ... [om PRO   het probleem op   te lossen].
                     COMP the problem prt. to solve
           'We acquired the new software to solve the problem.'

In (538b), however, the *om*-clause can still be interpreted as modifying the direct object of the main clause, *nieuwe software* 'new software'. In this case the implied subject PRO is interpreted as coreferential with the direct object, as indicated by the coindexing in (539a); the construction can be paraphrased as "software designed to solve the problem". On the (more prominent) purpose clause interpretation, on the other hand, the implied subject PRO is coreferential with the subject of the main clause, as indicated by the coindexing in (540a). The two structures in (539a) and (540a) differ not only in meaning, but also in syntactic behavior. First, (539a&b) show that the modifying infinitival clause can appear either in extraposed position or immediately right-adjacent to the object. The purpose clause, on the other hand, clearly prefers the clause-final position in (540a). Second, the (c)-examples show that, whereas the purpose clause can be placed in clause-initial position, the modifying infinitival clause cannot be topicalized in isolation. Finally, the (d)-examples show that only the modifying infinitival clause can accompany the direct object in clause-initial position, which of course follows from the fact that only in that case is the infinitival clause part of the direct object (the °constituency test); note that we have added the adverbial phrase of time *net* 'just' in these examples in order to facilitate topicalization.

(539)   • Modifying infinitival clause without an empty operator
    a. $^{(?)}$We hebben de nieuwe software$_i$ aangeschaft [om PRO$_i$ het probleem op te lossen].
    b.   We hebben de nieuwe software$_i$ [om PRO$_i$ het probleem op te lossen] aangeschaft.
    c.   *[Om PRO$_i$ het probleem op te lossen] hebben we de nieuwe software$_i$ aangeschaft.
    d.   De software$_i$ [om PRO$_i$ het probleem op te lossen] hebben we net aangeschaft.

(540)   • Purpose clause
    a.   We$_i$ hebben de nieuwe software aangeschaft [om PRO$_i$ het probleem op te lossen].
    b. $^{*?}$We$_i$ hebben de nieuwe software [om PRO$_i$ het probleem op te lossen] aangeschaft.
    c.   [Om PRO$_i$ het probleem op te lossen] hebben we$_i$ de nieuwe software aangeschaft.
    d.   *De software$_j$ [om PRO$_i$ het probleem op te lossen] hebben we net aangeschaft.

The examples in (541) show that the infinitival clause with an empty operator in (538a) behaves just the same as the infinitival clause without an empty operator in (539): like the latter, the former can appear both in extraposed position and right-adjacent to its antecedent, and can be pied piped by topicalization of the direct object, but cannot be placed in clause-initial position in isolation.

(541)   • Modifying infinitival clause with an empty operator
    a.   We hebben de nieuwe software aangeschaft [om het probleem mee op te lossen].
    b.   We hebben de nieuwe software [om het probleem mee op te lossen] aangeschaft.
    c.   *[Om het probleem mee op te lossen], hebben we de nieuwe software aangeschaft.
    d.   De software [om het probleem mee op te lossen], hebben we net aangeschaft.

That it is indeed the presence of an empty operator that blocks a purpose reading of example (538a) can be made clear by replacing this operator by the °R-pronoun *daar*, which would result in the structures in (542). The examples in (542) show that in this form the sentence behave just like (540). The infinitival clause clearly prefers the clause-final position, it can be topicalized in isolation (provided that the infinitival clause is assigned emphatic accent), but cannot be pied piped by topicalization of the direct object.

(542)   • Purpose clause
    a.   We$_i$ hebben   de software aangeschaft
        we   have   the software   prt.-acquired
        [om PRO$_i$ daar$_j$ het probleem [$_{PP}$ mee t_j] op   te lossen].
        COMP   there the problem   with   prt. to solve
        'We acquired the new software to solve the problem with it.'
    b. $^{*?}$We hebben de software [om daar het probleem mee op te lossen] aangeschaft.
    c.   [Om daar het probleem mee op te lossen], hebben we de software aangeschaft.
    d.   *De software [om daar het probleem mee op te lossen], hebben we net aangeschaft.

To conclude this discussion, note that in copular constructions like (543a&b), the infinitival clause cannot be construed as a purpose clause, but must be construed as a restrictive infinitival clause, which is clear from the fact that the infinitival clauses cannot be topicalized in isolation.

(543) a.   Het zijn geen kinderen$_i$ [om PRO$_i$ zich gauw te vervelen].
          it   are   no children   COMP   REFL soon to bare
          'They are not children that are easily bored.'
    a′. *Om zich gauw te vervelen, zijn het geen kinderen.

b. Jan is geen man$_i$ [om PRO$_i$ zich twee maal te vergissen].
Jan is no man   COMP   REFL two time   to mistake
'Jan is not the kind of man to make a mistake twice.'

b′. *Om zich twee maal te vergissen is Jan geen man.

II. Modal infinitives

Modal infinitives, which are more extensively discussed in Chapter A9, may also occur in postnominal position. They are, however, easy to distinguish from infinitival clauses since they are never introduced by the infinitival complementizer *om*, and can be used both in pre- and postnominal position. Furthermore, they should not be considered as infinitival clauses but as (adjectival) phrases, just like their attributively used counterparts in prenominal position. Some examples of modal infinitives are given in (544), in which the given English translations intend to express the modal meaning of these examples: in (544a), we are dealing with the root modality of obligation or ability, in (544b) with ability, in (544c) with permission. Note the word order differences between the pre- and postnominal occurrences of the modal infinitive: in accordance with the °head-final filter on attributive adjectives, the prenominal modal infinitive must be immediately adjacent to the modified noun, whereas the postnominal one may be separated from the head noun by all kinds of material.

(544) a. dit [als een eerste stap in het vredesproces te beschouwen] voorstel ...
this   as a first step   in the peace process to consider   proposal
'this proposal that can/must be considered as a first step in the peace process, ...'

a′. dit voorstel, als een eerste stap te beschouwen in het vredesproces, ...

b. dit [bij alle boekhandels te verkrijgen] boek ...
this   at all bookstores   to obtain   book
'this book that can be obtained at all bookstores ...'

b′. dit boek, bij alle boekhandels te verkrijgen, ...

c. dit soort [alleen door de overheid te gebruiken] gegevens ...
this kind   only   by the authorities to use   information
'this kind of information, which may only be used by the authorities, ...'

c′. dit soort gegevens, alleen te gebruiken door de overheid, ...

Like infinitival clauses that contain, but unlike infinitival clauses that do not contain an empty operator, modal infinitives can often be used in predicative position. The examples in (545) seem to show, however, that this is more or less restricted to those cases where the modal infinitive expresses ability.

(545) a. Dit voorstel is te beschouwen   als een eerste stap in het vredesproces.
this proposal is to consider   as a first step in the peace process
'This proposal can to be considered as a first step in the peace process.'

b. Dit boek is te verkrijgen in alle boekhandels.
this book is to obtain   in all bookstores
'This book can be obtained in all bookstores.'

c. ??Dit soort gegevens   is alleen door de overheid te gebruiken.
this kind information is only   by the authorities to use

As is indicated in (544) by means of the use of commas, postnominal modal infinitives are (in contrast to the prenominal ones) most readily interpreted non-restrictively. The examples in (546) serve to illustrate the difference between the postnominal modal infinitives and non-restrictive infinitival clauses by means of a minimal pair: the infinitival clause in (546a) gives the additional information that the bookcases are not yet assembled but that the customer should do that himself; the modal infinitive in (546b), on the other hand, conveys the information that bookcases are such that the customer is able to put them together himself.

(546) a.   Deze kasten, om   zelf   in elkaar te zetten, zijn niet al te duur.
            these closets COMP oneself together to put   are not very expensive
            'These closets, which one has to put together oneself, aren't too expensive.'

      b.   Deze kasten, zelf   in elkaar te zetten, zijn niet al te duur.
            these closets oneself together to put   are not very expensive
            'These bookcases, which one can put together oneself, aren't too expensive.'

The examples in (547a&b) show that postnominal modal infinitives can sometimes at least marginally be used restrictively provided that the phrase headed by the modal infinitive is complex; if it is not, the modal infinitive must be in prenominal position. In this respect, modal infinitives behave just like non-restrictive adjectival phrases; cf. 3.3.5.1.

(547) a.   Rekeningen [*(ᵗdoor ons) te betalen] moeten eerst gecontroleerd worden.
            bills   by us   to pay   must   first   checked   be
            'Bills to be paid by us have to be checked first.'

      a′.   (Door ons) te betalen rekeningen moeten eerst gecontroleerd te worden.

      b.   De rekeningen [te betalen *(ᵗvoor de 15e)] heb ik apart   gelegd.
            the bills   to pay   before the 15ᵗʰ have I   separate put
            'The bills to be paid before the 15ᵗʰ I have put aside.'

      b′.   De (voor de 15e) te betalen rekeningen heb ik apart gelegd.

3.3.4. A special case: clauses referring to a proposition

Clauses referring to a proposition serve to specify the contents of a head noun. The propositional clause is obligatorily introduced by a complementizer and does not contain a gap. Propositional clauses can be restrictive and non-restrictive. When they are restrictive, propositional clauses function as complements of the head noun and are as such treated in Section 2.3. This section will therefore only address non-restrictive propositional clauses like (548).

(548) a.   Zijn opmerking, [dat verder gaan zinloos was], veroorzaakte verwarring.
            his remark   that further go useless was   caused   confusion
            'His remark, that it was useless to go on, caused confusion.'

      b.   De conclusie,   [dat de ramp onvermijdelijk was], leek   voorbarig.
            this conclusion that the disaster inescapable was seemed   premature
            'The conclusion, that the disaster was inescapable, seemed premature.'

    c.   Het bericht, [dat Jan ernstig ziek was], schokte ons zeer.
         the message that Jan seriously ill was shocked us very
         'The message, that Jan was ill, shocked us very much.'
    d.   Deze mededeling, [dat de reis was afgezegd], kwam onverwacht.
         this announcement that the trip was cancelled came unexpectedly
    e.   Naar onze mening, [dat het plan te riskant is], werd niet geluisterd.
         to out opinion that the plan too risky is was not listened
         'Our opinion, that the plan is too risky, was not taken into account.'

As in the case of propositional complement clauses, non-restrictive propositional clauses only follow a noun denoting a proposition. As can be seen from the examples in (548), the antecedent of non-restrictive clauses is typically definite. This is as expected given that the use of a non-restrictive modifier suggests that the message, announcement, etc. conveying the proposition can be regarded as known to the addressee or, at least, identifiable from the context. It is, however, also possible for the head to be indefinite. This occurs especially when there is uncertainty as to the correctness of the specified contents. In the constructions in (549), this uncertainty is expressed by the (obligatory) use of modal *zouden* 'would' and the use of the conjunction *als* instead of *dat*.

(549) a.   Een nog onbevestigd bericht, [als zouden de rebellen de hoofdstad
         a yet unconfirmed message COMP should the rebels the capital
         hebben ingenomen], heeft ons vannacht bereikt.
         have prt.-taken has us tonight reached
         'An as yet unconfirmed message, to the effect that the rebels have taken the
         capital, has reached us tonight.'
    b.   Het gerucht, [als zou er informatie achtergehouden zijn],
         the rumors COMP would there information withheld be
         bleek later op waarheid berusten.
         proved later on truth to based
         'The rumor, to the effect that information had been withheld, proved true later.'

3.3.5. Adjectival phrases

This section consists of two parts: the first deals with appositively used "true" adjectives, whereas the second is concerned with appositively used past and present participles. Although, strictly speaking, the modal infinitives should also be discussed in the second part, this will not be done, since they are already discussed in Section 3.3.3.4, sub II. This section on adjectival postmodification will be brief since the attributive use of adjectival and participle phrases are more extensively dealt with in ChaptersA5 and A9.

3.3.5.1. Adjective phrases

Although adjectival modifiers typically appear in prenominal position in Dutch, they can occasionally also occur in postnominal position, where they can be interpreted either as restrictive, as in (550a), or as non-restrictive, as in (550b&c). In contrast to the prenominal ones, postnominal adjectival modifiers are not inflected.

(550) a. $^{?}$Een olifant hongerig en kwaad kan veel schade aanrichten.
      an elephant hungry and angry can much harm prt.-cause
      'An elephant hungry and angry can do a lot of harm.'

     b. Jan, jaloers op zijn zusje, scheurde het boek kapot.
      Jan jealous on his sister tore the book into pieces
      'Jan, jealous of his sister, tore the book up.'

     c. De jongen, rood van schaamte , durfde haar niet aan te kijken.
      the boy red with shame dared her not prt. to look
      'The boy, scarlet with shame, didn't dare look at her.'

Restrictive adjectival postmodification is less common and normally restricted to indefinite noun phrases; only in emphatic and contrastive contexts like (551) can definite noun phrases or proper nouns be used. Since °individual-level predicates like *intelligent* are not likely to be emphatically or contrastively stressed, it does not come as a surprise that the examples in (551) do not accept this adjective.

(551) a. Deze jongen jaloers/*intelligent is tot alles in staat. [emphatic]
      this boy jealous/intelligent is to everything capable
      'This boy jealous is capable of everything.'

     b. Jan kwaad/*intelligent is te verkiezen boven Jan verdrietig. [contrastive]
      Jan angry/intelligent is to prefer above Jan sad
      'Jan angry is preferable to Jan sad.'

Non-restrictive postnominal APs, on the other hand, are quite common and accept all kinds of antecedents. Since the modifier does not serve to restrict or identify the antecedent, the antecedent can be either definite or indefinite, or even a proper noun. Moreover, the adjectives in question can be either stage-level or individual-level, and need not be modified in any particular way, although more or less heavy APs are usually preferred. Some examples are given in (552).

(552) a. Jan veegde zijn gezicht, nog nat $^{??}$(van het zweet), met zijn zakdoek af.
      Jan wiped his face still wet of the sweat with his handkerchief prt.
      'Jan wiped his face, still wet with perspiration, with his handkerchief.'

     b. Haar hoofd, zo rood als een biet, steekt scherp af bij haar witte blouse.
      her head as red as a beet contrasts sharply prt. with her white blouse
      'Her head, as red as a beet, contrasts sharply with her white blouse.'

     c. Jan, jaloers op zijn zusje, scheurde het boek kapot.
      Jan jealous on his sister tore the book into pieces
      'Jan, jealous of his sister, tore the book up.'

When we are dealing with a simple AP, the construction can be paraphrased with the adjective in prenominal position, as shown in the (a)-examples in (553). This requires, however, that the prenominal adjective can be given a non-restrictive interpretation, which implies that such paraphrases are restricted to constructions with definite antecedents. The indefinite example in (553b′), although perfectly acceptable, is therefore not a paraphrase of (553b): whereas in (553b) the presupposition is that all elephants are big and heavy, and that all members of this species can therefore cause a lot of damage, example (553b′) rather expresses that

only a subset of elephants is big and heavy, and that the members of this subset can cause a lot of damage.

(553) a. De atleet, uitgeput,   haalde de finish niet.
        the athlete exhausted made   the finish not
        'The athlete, exhausted, didn't make it to the finish.'

   a′. De uitgeputte atleet   haalde de finish niet.
        the exhausted athlete   made   the finish not
        'The exhausted athlete didn't make it to the finish.'

   b. Olifanten, groot en zwaar, kunnen veel schade   aanrichten.
        elephants big and heavy can   much damage prt.-cause
        'Elephants, big and heavy, can do a lot of harm.'

   b′. #Grote en zware olifanten kunnen veel schade aanbrengen.

3.3.5.2. Participle phrases

Attributively used past and present participle phrases are normally found in prenominal attributive position. Given the fact that these pronominal modifiers have attributive inflection in this position, it is safe to assume that participle phrases of this type are in fact adjectival phrases; see Chapter A9 for extensive discussion. In this section, we will focus on the postnominal use of these phrases.

I. Present participle phrases

Postnominal present participle phrases may occur with the same verb types as the prenominal attributive ones. This is illustrated in (554) for non-restrictive postnominal phrases. The modified noun is interpreted as the implied agent of the participle when the verb is intransitive, transitive, or when the verb takes a PP-complement, or as the implied theme, when the verb is unaccusative.

(554)   • Non-restrictive present participle phrases
    a. Mijn voor Philips werkende broer   is programmeur.   [intransitive]
        my   for Philips working   brother is programmer
        'My brother who works for Philips is a computer programmer.'

   a′. Mijn broer, werkend voor Philips, is programmeur.

   b. De een vrolijk deuntje fluitende jongen fietste voorbij.   [transitive]
        the a cheerful tune   whistling boy   cycled past
        'The boy who was cheerfully whistling a tune, cycled past.'

   b′. De jongen, een vrolijk deuntje fluitend, fietste voorbij.

   c. De van spoor 2   vertrekkende trein is vertraagd.   [unaccusative]
        the from platform 2 departing   train is delayed
        'The train to Tilburg that is leaving from platform 2, has a delay.'

   c′. De trein naar Tilburg, vertrekkend van spoor 2, is vertraagd.

   d. Het op de trein wachtende meisje stampte met haar voeten. [PP-complement]
        the on the train waiting   girl   stamped with her feet
        'The girl who was waiting for the train stamped her feet.'

   d′. Het meisje, wachtend op de trein, zag er koud en eenzaam uit.

Like the postnominal adjectives discussed in 3.3.5.1, the postnominal participles in the primed examples of (554d) are normally not inflected. It must be noted,

however, that in formal language, it is sometimes possible for the present participle to have the ending *-e*. An example can be found in (555).

(555)　De verdachte, wonende in Amsterdam, werd gisteren gearresteerd.
　　　　the suspect, 　living in Amsterdam, 　　was yesterday arrested
　　　　'The suspect, living in Amsterdam, was arrested yesterday.'

　　　Postnominal restrictive present participle phrases, which are never inflected, are less common than non-restrictive ones, and occur under more or less the same conditions as the postnominal adjectives. The examples in (556) show that they may occur with intransitive and unaccusative verbs as well as with verbs taking a PP-complement, but that the result is degraded when the verb is transitive. The reason for the degraded status of (556b) may be related to the fact that the antecedent and the present participle are not adjacent (as with all non-finite verbs, the object cannot follow the participle either). It must be noted, however, that this gives rise to a less severe result in examples like (556d′), which seems more or less acceptable (but marked compared to (556d) where the noun and the participle are adjacent).

(556)　• Restrictive present participle phrases
　　a.　Mensen werkend voor hem zijn niet zeker van hun baan. 　[intransitive]
　　　　people 　working for him 　are 　not 　certain of their job
　　b.　*Een jongen een vrolijk deuntje fluitend, fietste voorbij. 　[transitive]
　　　　a boy 　　　a cheerful tune whistling 　cycled past
　　c.　De trein 　vertrekkend van spoor 2 is vertraagd. 　　[unaccusative]
　　　　the train 　leaving from platform 2 is delayed
　　　　'The train leaving from platform 2 has a ten-minute delay.'
　　d.　Reizigers wachtend op deze trein krijgen vertraging. 　[PP-complement]
　　　　travelers waiting 　for this train get 　　delay
　　　　'Travelers waiting for this train will get a delay.'
　　d′.　?Reizigers op de trein naar Breda wachtend krijgen vertraging.

　　　Another difference between non-restrictive and restrictive present participle phrases is that the former but not the latter allow a copular verb. Postnominal restrictive participle phrases pattern with the attributive construction in this respect.

(557) a.　Mijn vriend, architect zijnde, weet 　veel van dat soort dingen.
　　　　my friend 　　architect being 　knows much of that kind of things
　　　　'My friend, being an architect, knows much about those things.'
　　b.　*Een vriend/Iemand architect zijnde weet 　veel 　van dat soort dingen.
　　　　a friend/someone 　architect being 　knows much of that kind of things
　　b′.　*Mijn architect zijnde vriend weet veel van dat soort dingen.

II. Past/passive participle phrases

Just like attributively used past/passive participle phrases in the primeless examples of (558), the non-restrictive postnominal ones in the primed examples are only acceptable with a transitive or an unaccusative participle: the noun modified is interpreted as the implied theme of the participle, that is, the direct object of the corresponding transitive verb or the subject of the corresponding unaccusative verb; see Sections V2.1.2 and A9.2 for discussion.

(558)　　• Non-restrictive past/passive participle phrases
　　　a. *Deze voor hem gewerkte man is niet zeker van zijn baan.　　[intransitive]
　　　　　this for him　　worked　 man is not certain of his job
　　　a′. *Deze man, gewerkt voor Philips, is niet zeker van zijn baan.
　　　b. Deze in Japan gemaakte auto is aanzienlijk goedkoper.　　　　[transitive]
　　　　　this in Japan made　　　car is considerably cheaper
　　　b′. Deze auto, gemaakt in Japan, is aanzienlijk goedkoper.
　　　c. De bij Breda　　ontspoorde trein gaf　 veel vertraging.　　　[unaccusative]
　　　　　the near Breda derailed train　　gave much delay
　　　c′. De trein, ontspoord tussen Tilburg en Breda, gaf veel vertraging.

Example (559a) shows that the modified noun phrase cannot be interpreted as the nominal part of a PP-complement, and (559b) that, in contrast to the present participle, the past participle cannot be a copular. The latter might be surprising given that the copular verb is a kind of unaccusative verb.

(559) a. *De door het meisje op gewachte trein kwam te laat.　　　[PP-complement]
　　　　　 the by the girl　　 for waited　　train came too late
　　　a′. *De trein, <op> gewacht <op> door het meisje, kwam te laat.
　　　b. *Mijn vriend, architect geweest, weet veel van dat soort dingen.　　[copular]
　　　　　 my friend　　 architect been　　 knows much about that sort of things

　　　Postnominal restrictive past participle phrases are less common than the non-restrictive ones, and occur under more or less the same conditions as the postnominal adjectives. Again, the participle must be transitive or unaccusative and the modified noun phrase cannot be interpreted as the nominal part of a PP-complement, and the participle cannot be a copular, but this will go unillustrated here.

(560)　　• Restrictive past/passive participle phrases
　　　a. *Mensen gewerkt voor hem zijn niet zeker van hun baan.　　[intransitive]
　　　　　 people worked for him　 are not certain of their job
　　　b. Auto's gemaakt in Japan zijn aanzienlijk goedkoper.　　　　[transitive]
　　　　　 cars　 made　　 in Japan are considerably cheaper
　　　c. De trein ontspoord bij Breda veroorzaakte veel vertraging.　　[unaccusative]
　　　　　 the train derailed near Breda caused　　　 much delay

3.3.6. Adverbial postmodification

This section discusses postnominal modification by means of adverbials; see also, e.g., Haeseryn et al. (1997: 849-50) and Barbiers (1995: 4.7). We will start with a discussion of nouns postmodified by adverbial phrases, an option which seems to be restricted to adverbial phrases of place and time. After that, we will continue the discussion of postnominal adverbial clauses, which is possible with a variety of adverbial functions.

3.3.6.1. Adverbial phrases of time and place

Typical examples of adverbial postmodification involve temporal adverbs like *gisteren* 'yesterday' and the place adverbs *daar*/*hier* 'there/here'. Examples

(561a&b) show that the adverb must occur postnominally; placing the adverb in prenominal position gives rise to an ungrammatical result.

(561) a. <*Gisteren> de krant <gisteren> deed uitgebreid verslag van het schandaal.
      yesterday the newspaper   did   elaborate report   of the scandal
      'The newspaper yesterday gave a detailed account of the scandal.'
   b. De <*daar/*hier> regering <daar/hier> is democratisch   gekozen.
      the   there/here   government   is democratically elected
      'The government over there/over here has been elected democratically.'

I. Temporal adverbs

At first sight temporal adverbial modifiers *gisteren*/*morgen* 'yesterday/tomorrow' may seem to be synonymous with PP-modifiers like *van gisteren*/*van morgen* 'of yesterday/of tomorrow' given that they can often be used in the same contexts; cf. example (562). This section will show, however, that the two constructions differ both semantically and syntactically.

(562) a. De krant   (van) gisteren   deed uitgebreid verslag van het schandaal.
      the newspaper of   yesterday did   extensive report   of the scandal
      'Yesterday's newspaper gave a detailed account of the scandal.'
      'The newspaper yesterday gave a detailed account of the scandal.'
   b. De vergadering (van) morgen   begint om drie uur.
      the meeting   of   tomorrow starts at three o'clock
      'Tomorrow's meeting will start at three o'clock.'
      'The meeting tomorrow will start at three o'clock.'

A. Meaning

From a semantic point of view, *van*-PPs (whether restrictive or non-restrictive) can be said to denote a property of the head noun. They simply have the function of providing the hearer with sufficient information to properly identify the intended referent. This means that the complement of the *van*-PP in (562) can be replaced by any time denoting expression that can perform this function. The examples in (563) show that the substitution possibilities of the adverbial phrase are more restricted in this respect.

(563) a. De krant   *(van) 3 januari   deed uitgebreid verslag van het schandaal.
      the newspaper   of 3 January did   extensive report   of the scandal
      'The newspaper of January 3 gave a detailed account of the scandal.'
   b. De vergadering *(van) 3 januari   begint om drie uur.
      the meeting   of   3 January starts   at three o'clock
      'The meeting on January 3 will start at three o'clock.'

In addition to this identifying function, postmodifying adverbs also seem to situate the entity referred to by the noun phrase at a particular place or time. As a result, the examples in (562) with the adverbial modifiers are semantically more or less equivalent to the examples in (564), where we are dealing with regular adverbial phrases; the main difference is that the adverbial phrases in (564) do not play a role in identifying the referent of the noun phrase for the hearer. For completeness' sake,

The examples in (564) also show that the *van*-PPs cannot be used adverbially in these cases.

(564) a.   De krant   deed (*van) gisteren uitgebreid verslag van het schandaal.
            the newspaper did   of yesterday   extensive report   of the scandal
            'Yesterday, the newspaper gave a detailed account of the scandal.'
     b.   De vergadering begint (*van) morgen om drie uur.
            the meeting   starts   of tomorrow   at three o'clock
            'The meeting will start at three o'clock tomorrow.'

B. Tense agreement

When used postnominally, the adverbial phrase must agree in tense with the finite verb of the clause. In other words, in (565a) and (566a) the adverb *gisteren* 'yesterday' has °scope outside the noun phrase of which it is a part, with the result that the finite verb of the main clause must be in the past tense, just as in the primed examples where we are dealing with a regular adverbial phrase. With the *van*-PPs, on the other hand, there is no such restriction, so that (565b) and (566b) are acceptable both in the past and in the present tense.

(565) a.   In de krant gisteren   stond/*staat   een artikel over Japanse kunst.
            in the newspaper yesterday   stood/stands an article about Japanese art
            'In the newspaper yesterday there was an article on Japanese art.'
     a′. In de krant stond/*staat gisteren een artikel over Japanse kunst.
     b.   In de krant van gisteren   stond/staat   een artikel over Japanse kunst.
            in the newspaper of yesterday   stood/stands   an article about Japanese art
            'In yesterday's newspaper there was/is an article on Japanese art.'

(566) a.   De krant gisteren   meldde/*meldt   de laatste ontwikkelingen.
            the newspaper yesterday reported/reports   the latest developments
            'The newspaper yesterday reported the latest developments.'
     a′. De krant meldde/*meldt gisteren de laatste ontwikkelingen.
     b.   De krant van gisteren   meldde/meldt   de laatste ontwikkelingen.
            the newspaper of yesterday   reported/reports   the latest developments
            'Yesterday's newspaper reported/reports latest developments.'

That the adverb has scope outside the PP is also shown by example (567a) where the simultaneous expression of the postnominal modifier *gisteren* and the regular adverb *vandaag* 'today' leads to a contradiction. Example (567b) shows that we do not find a similar contradiction in the case of a postnominal *van*-PP.

(567) a.   Die man gisteren   vertelde (*vandaag) de waarheid.
            that man yesterday told   today   the truth
            'That man yesterday told the truth (today).'
     b.   Die man van gisteren vertelde vandaag de waarheid.
            that man of yesterday told   today   the truth
            'Yesterday's man told the truth today.'

C. Syntactic function of the noun phrase

Another restriction concerns the syntactic function that noun phrases containing an adverbial postmodifier or a *van*-PP can fulfill in the clause. The examples in (568a&b) show that these noun phrases can function as the subject of the clause, and the one in (568c) that the same thing holds when these noun phrases act as the complement of a preposition.

(568) a. De krant (van) gisteren   meldde   de laatste ontwikkelingen.
         the newspaper of yesterday   reported   the latest development
         'Yesterday's newspaper reported the latest development.'
         'The newspaper yesterday reported the latest developments.'
    b. De krant (van) gisteren   bestond   grotendeels uit advertenties.
         the newspaper of yesterday   consisted largely   from advertisements
         'Yesterday's newspaper consisted largely of advertisements.'
         'The newspaper yesterday consisted largely of advertisements.'
    c. In de krant (van) gisteren   las   ik   een artikel over Japanse kunst.
         in the newspaper of yesterday   read I   an article about Japanese art
         'In yesterday's newspaper I read an article on Japanese art.'

However, these constructions turn out to be acceptable only when the main verb denotes a state of affairs relating to properties of the newspaper itself, either its contents or its appearance. In all other cases, only constructions with the *van*-PP are acceptable. For noun phrases functioning as subject, this is shown in (569).

(569) a. De krant *(van) gisteren   lag op de keukentafel.
         the newspaper of yesterday   lay on the kitchen table
         'Yesterday's newspaper was lying on the kitchen table.'
    b. De krant *(van) gisteren   is niet gekomen.
         the newspaper of yesterday   is not   come
         'Yesterday's newspaper didn't come.'

For noun phrases functioning as prepositional objects, this is shown in (570). Observe that (570b) is acceptable, but only with the adverb *gisteren* functioning as a regular adverbial phrase, which is shown by the fact in (570b′) that topicalization of the PP is only possible with *van*-PPs: since in Dutch only one constituent can be topicalized, the sequence *de krant gisteren* cannot appear in initial position (the °constituency test).

(570) a. Ik heb   de plant op de krant *(van) gisteren   gezet.
         I   have the plant on the newspaper of yesterday put
         'I have put the plant on yesterday's newspaper.'
    b. Ik heb   met de krant #(van) gisteren   een mug   dood geslagen.
         I   have with the newspaper of yesterday a mosquito dead beaten
         'I killed a mosquito with yesterday's newspaper.'
    b′. Met de krant *(van) gisteren   heb ik een mug   dood geslagen.
         with the newspaper of yesterday have I   a mosquito dead beaten

    Noun phrases functioning as direct objects never contain an adverbial modifier. Thus, in (571a) the object can only contain a *van*-PP; without *van* the element

gisteren can only be interpreted as a regular adverbial phrase. This means that the sequence *de krant gisteren* does not form one constituent, which accounts for the fact that it cannot be topicalized. Noun phrases containing a *van*-PP, on the other hand, can be topicalized.

(571) a.   Ik heb   de krant [#](van) gisteren   niet gelezen.
           I   have the newspaper of yesterday not   read
           'I didn't read yesterday's newspaper.'
      b.   De krant *(van) gisteren   heb ik niet gelezen.
           the newspaper of yesterday have I   not   read

D. Extraposition of the modifier

Finally, °extraposition of the modifier out of the noun phrase is possible only in the case of *van*-PPs; an example is given in (572a). Adverbial modifiers in extraposed position can only be interpreted as regular adverbial phrases, as can be seen from the English translation in example (572b).

(572) a.   Ik heb   [de krant t_i]   gelezen [*(van) gisteren]$_i$.
           I   have the newspaper read   of yesterday
           'I read yesterday's newspaper.'
      b.   Ik heb   [de krant]   gelezen gisteren.
           I   have the newspaper read   yesterday
           'I read the newspaper yesterday.'

II. Locational adverbs

The locational adverbs *hier* and *daar* can be used in a number of ways. In (573a&b), the adverbs are simply used to indicate location, and in (573c) to indicate origin. In these functions the adverbs clearly head a phrase, which is clear from the fact that they themselves can be modified.

(573) a.   De auto's [daar in Engeland] rijden aan de linkerkant van de weg.
           the cars   there in England   drive   on the left side   of the road
      b.   De fietsers [hier in Nederland] houden zich aan geen enkele regel.
           the cyclists   here in Holland   keep   REFL to not a single rule
           'The cyclists here in Holland ignore all the rules.'
      c.   De jongens [hier in het dorp] zijn gewend hard te werken.
           the boys   here in the village are used   hard to work
           'The boys from here are used to working hard.'

In addition, the adverbs can be used deictically, as in the examples in (574): the modified noun is then typically preceded by a proximate demonstrative pronoun when the adverb is *hier* and by a distal demonstrative pronoun when the adverb is *daar*. When the adverbs are modified they tend to lose their deictic force in favor of a regular locational function.

(574) a. Ik heb dit huis   hier/^{*?}daar gekocht.
          I   have this house here/there bought
          'I have bought this house over here.'
    a′. Ik heb   dat huis   daar/^{??}hier gekocht.
          I   have that house there/here bought
          'I have bought that house over there.'
    b. Deze jongens hier/^{*?}daar zijn mijn vrienden.
          these boys   here/there are my friends
    b′. Die jongens daar/^{??}hier zijn mijn vrienden.
          those boys   here/there are my friends

The examples in (575) show that, unlike when it is used as a regular adverbial phrase within the clause, the place adverb *daar/er* 'there' must appear in its strong form in postnominal position, which is due to the fact that it always receives stress.

(575) a. De regering   wordt daar/er democratisch   gekozen.
          the government is   there   democratically elected
          'The government is democratically elected over there.'
    b. De regering   daar/*er wordt democratisch   gekozen.
          the government there   is   democratically elected

Unlike temporal adverbs, locational adverbs are not readily confused with postnominal *van*-PPs due to the fact that they can only be used in the sense of "from here/there". As a result, there are very few contexts in which both types of modifier can be used. Examples of constructions allowing both are given in (576).

(576) a. De jongens (van) hier zijn gewend hard te werken.
          the boys   of here   are used   hard to work
          'The boys (from) here are used to working hard.'
    b. Mensen ([?]van) daar zijn bijna allemaal erg arm.
          people   of   there are almost all   very poor
          'People (from) over there are almost all very poor.'

In (577a&b), where the adverb cannot be interpreted as indicating origin (for reason related to our knowledge of the world), only the adverbial modifiers can be used. Note that in these cases, the examples involving postnominal modification are also semantically more or less equivalent to those in the primed examples where the adverbial phrases modify the clause: the main difference is that the postnominal modifier is needed to properly identify the intended set of cars, whereas this is not the case in the primed example.

(577) a. De auto's (*van) daar rijden aan de linker kant van de weg.
          the cars   from there drive   on the left side of the road
    a′. De auto's rijden daar aan de linker kant van de weg.
          the cars   drive   there on the left side of the road

    b.   De fietsers (*van) hier in Nederland houden zich   aan geen enkele regel.
          the cyclists here in Holland   keep   REFL to not a single rule
          'The cyclists here in Holland ignore all the rules.'
    b′.   De fietsers houden zich   hier in Nederland aan geen enkele regel.
          the cyclists keep   REFL   here in Holland   to not a single rule

For completeness' sake, (578a) shows that the *van*-PP cannot be used in deictic contexts either. Example (578b) with the distal demonstrative *die* 'that/those' perhaps seems to contradict this but that is only apparent given that the demonstrative does not have deictic force in this example: it refers to a type rather than to a token.

(578) a.   Deze jongens (*?van) hier zijn gewend hard te werken.
          these boys from here   are used   hard to work
          'These boys here are used to working hard.'
    b.   Die jongens van daar/hier   zijn gewend hard te werken.
          those boys   from there/here are   used   hard to work

3.3.6.2. Adverbial clauses

Adverbial clauses, too, can be used as modifiers. In contrast to relative clauses, they do not contain an interpretative gap, and the linker introducing the clause may take many forms, depending on the adverbial relation prevailing between noun and clause, such as time, reason, condition, etc. Generally, adverbial clauses are used non-restrictively or appositionally; as indicated in the examples in (579), restrictive adverbial clauses seem somewhat marked.

(579) a.   De protesten ?(,) [nadat het nieuws bekend werd], waren tevergeefs.
          the protests   after the news known became   were   in.vain
          'The protests(,) after the news had come out, were in vain.'
    b.   De protesten ?(,) [omdat we over moesten werken],   waren tevergeefs.
          the protests   because we prt. must   do.overtime were   in.vain
          'The protests, because we had to do overtime, were in vain.'
    c.   De protesten ?(,) [hoewel de directie   toezeggingen had gedaan],
          the protests   although the management promises   had   done
          bleven voortduren.
          kept   continue
          'The protests(,) although the management had made promises, were continued.'

In what follows we will look at some specific characteristics of adverbial clauses. Note that the adverbial clauses in (579a&b) are clearly part of the noun phrase: first, they share the first position with the noun phrase (°constituency test); second, placing the adverbial clauses in clause-final position, which is normally possible with adverbial clauses, gives rise to the ungrammatical structures in (580a&b). That this test does not always give rise to a clear result is evident from the fact that (580c) is fully acceptable; this is due to the fact that the adverbial clause can also be used to modify the verb phrase, whereas this is impossible in (580a&b).

(580) a. *De protesten waren tevergeefs [nadat het nieuws bekend werd].
     b. *De protesten waren tevergeefs [omdat we over moesten werken].
     c. De protesten bleven voortduren [hoewel de directie toezeggingen had gedaan].

I. Conjunctions

As mentioned before, adverbial clauses do not contain an interpretative gap coreferential with the modified noun phrase. Adverbial clauses are therefore full, finite clauses, introduced by a conjunction indicating the semantic relation between the clause and the antecedent. Postnominal adverbial clauses can cover virtually the same range of relations as regular ones; cf. Paardekooper (1986: 509). Some examples are given in (581); more examples will follow in the later subsections. The examples in (582) show that the conjunction can also be phrasal.

(581) a. De protesten, [toen we moesten overwerken], waren vrij hevig. [time]
        the protests when we must do.overtime were pretty fierce
     b. De protesten, [als de plannen doorgaan], zullen hevig zijn. [condition]
        the protests if the plans continue will fierce be
        'The protests, if the plans are implemented, will be fierce.'
     c. De protesten, [omdat de plannen doorgaan], waren zeer hevig. [reason]
        the protests because the plans continue were very fierce
        'The protests, because the plans are implemented, were very fierce.'

(582) a. Die protesten, [ingeval (dat) ze overwerk moeten doen], zijn voorbarig.
        those protests in case that they overtime have to do are premature
        'Those protests in case they have to do overtime are premature.'
     b. Die protesten, [voor het geval dat ze overwerk moeten doen], zijn voorbarig.
        those protests for the case that they overtime have to do are premature
        'Those protests in case they have to do overtime are premature.'

II. Restrictions on the use of adverbial clauses

A. The antecedent

Antecedents of adverbial clauses are always abstract nouns denoting, e.g., a state of affairs. In many cases the head of the construction is a deverbal noun. The adverbial clause can, in such cases, be seen as being inherited from the original verbal expression, where it would have a regular adverbial function. This is illustrated in example (583), where the primed examples give a verbal construction denoting the same state of affairs as the modified DP in the primeless examples.

(583) a. de protesten, [toen we moesten overwerken], ... [time]
        the protests when we must do.overtime
     a′. We protesteerden toen we moesten overwerken.
        we protested when we must do.overtime
        'We protested when we had to do overtime.'
     b. die verzakking van het huis, [doordat het zo geregend had], ... [cause]
        the subsidence of the house because it so rained had
     b′. Het huis verzakte doordat het zo geregend had.
        the house subsided because it so rained had
        'The house subsided because it had rained so much.'

    c.   de verdubbeling van de olieprijs, [omdat de productie   stil lag], ... [reason]
           the doubling of the oil price   because the production still lay
    c′.   De olieprijs verdubbelde omdat de productie   stil lag.
           the oil price doubled   because the production still lay
           'The oil price doubled because production was suspended.'

The examples in (584) and (585) show, however, that adverbial clauses can also be used to modify a non-derived antecedent that denotes a state of affairs, as in (584). This is related to the fact that the corresponding clauses in the primed examples can be modified by the same adverbial clauses.

(584) a.   die hoofdpijn [sinds ik dat ongeluk heb gehad]
           that headache   since I   that accident have had
      a′. Ik heb   hoofdpijn [sinds ik dat ongeluk heb gehad].
           I   have headache   since I   that accident have had
           'I have had headaches ever since I had that accident.'
      b.   die hoofdpijn [kort   voordat ze   weer aan het werk moest]
           that headache briefly before she again to the work   must
      b′. Zij   kreeg hoofdpijn [kort   voordat ze   weer aan het werk moest].
           she   got   headache briefly before she   again to the work   must
           'She got a headache just before she had to go to work again.'
      c.   die hoofdpijn [zonder dat de dokter iets   kan vinden]
           that headache without that the doctor something can find
      c′. Ik heb   hoofdpijn [zonder dat de dokter iets   kan vinden].
           I   have headache without that the doctor something can find
           'I have a headache although the doctor can't find anything.'

The same thing is shown in, respectively, (585a) and (585b) for nouns denoting an emotion or a property.

(585) a.   Die haat [als   ik hem zie] is werkelijk enorm.
           that hatred when I   him see is really enormous
           'This hatred when I see him is really enormous.'
      a′. Ik voel een enorme haat   [als   ik hem zie].
           I   feel an enormous hatred when I   him see
           'I feel an enormous hatred when I see him.'
      b.   Zijn verlegenheid [wanneer hij een lezing moet houden] is lastig.
           his shyness   when   he a talk   must keep   is troublesome
           'His shyness when he has to give a talk is almost embarrassing.'
      b′. Hij is erg verlegen [wanneer hij een lezing moet houden].
           he   is very shy   when   he a talk   must keep
           'He is very shy when he has to give a talk.'

B. The conjunction

Not all conjunctions that can be used in a verbal environment can appear in a postnominal adverbial clause. In particular, the conjunctions *tenzij* 'unless' and *zodat* 'so that' cannot occur in adverbial clauses; neither can the phrasal conjunction *voor zover* 'insofar as'. Constructions with *alhoewel/ofschoon* 'although' seem to be at best questionable.

(586) a. *Die hoofdpijn [tenzij ik mijn medicijnen inneem] is vreselijk.
　　　　 that headache unless I my medicine　 prt.-take is terrible

　　 b. *Die hoofdpijn [zodat ik weer thuis moet blijven] was vreselijk.
　　　　 that headache so that I again home must stay　 is terrible

　　 c. *Die bezwaren　 [voor zover ik goed ben ingelicht] waren niet terecht.
　　　　 those objections insofar as I well am informed were not justified

　　 d. ??De protesten [(al)hoewel de directie　　 het plan introk]　 waren hevig.
　　　　 the protests　 although　 the management the plan withdrew were　 fierce
　　　　 'The protests although the management had withdrawn the plan were fierce.'

It seems that adverbial phrases can only be used postnominally when they have a restrictive function within the clause. The primed examples in (585) express a restriction on the state denoted by the clause: (585a′) expresses that the speaker feels an enormous hatred *when the speaker sees a certain person*, and (585b′) that the person referred to is shy *when he has to give a talk*. It seems that the adverbial clauses headed by the conjunctions in (586) do not have a similar restrictive function in the clause.

　　This, however, has no effect on the way the adverbial clause is used, that is, as a restrictive or non-restrictive modifier. Generally speaking, all conjunctions that allow postmodification within the DP can be used both in restrictive and non-restrictive adverbial clauses. An exception seems to be *zolang* 'as long as', which can only be used restrictively in adverbial clauses. Thus, whereas the construction in (587a) is acceptable, construction (587b) is certainly marked. Moreover, the *zolang*-clause in this latter construction is most likely interpreted as a regular, parenthetic adverbial phrase (like the *zolang*-clause in (587b′)), not as a modifier of the subject DP.

(587) a. Die protesten zolang　　 de olieprijs hoog is, zijn wel begrijpelijk.
　　　　 those protests as long as the oil price high is are PRT understandable

　　 b. ??Die protesten, zolang de olieprijs hoog is, zijn wel begrijpelijk.

　　 b′. Zolang de olieprijs hoog is, zijn die protesten wel begrijpelijk.

3.4. Bibliographical notes

For general descriptions of Dutch relative constructions the reader is referred to, among others, Haeseryn et al. (1997: 856-862), Van den Toorn (1981: 139ff.), Luif (1986: 80ff.), Van Bart et al. (1998: 175ff.) and Klooster (2001: 229ff.). For a detailed description and analysis of relative constructions in Germanic and Romance languages (including Dutch), see Smits (1989). De Vries (2002) is a typological study into the syntax of relativization in a large number of languages, including Dutch. On the distinction between restrictive and non-restrictive (his appositive) relative clauses, see De Vries (2002: 181ff.). For a discussion of the so-called free relatives, see Van Riemsdijk (2006). On the extraposition of relative clauses, see De Vries (2002: Ch. 7) and Kayne (1994). For an empirical study of the role of pragmatic, semantic and syntactic factors in the processing and interpretation of relative clauses, see Mak (2001). For a discussion of R-pronominalization and the use of postpositions, the reader is referred to Van Riemsdijk (1978).

Syntax of Dutch will include the following volumes:

Nouns and Noun Phrases (volume 1):
Hans Broekhuis & Evelien Keizer

Nouns and Noun Phrases (volume 2):
Hans Broekhuis & Marcel den Dikken

Adjectives and Adjective Phrases
Hans Broekhuis

Adpositions and Adpositional Phrases
Hans Broekhuis

Verbs and Verb Phrases (volume 1)
Hans Broekhuis & Norbert Corver

Verbs and Verb Phrases (volume 2)
Hans Broekhuis & Norbert Corver

Verbs and Verb Phrases (volume 3)
Hans Broekhuis & Norbert Corver

Comprehensive Grammar Resources – the series

With the rapid development of linguistic theory, the art of grammar writing has changed. Modern research on grammatical structures has tended to uncover many constructions, many in depth properties, many insights that are generally not found in the type of grammar books that are used in schools and in fields related to linguistics. The new factual and analytical body of knowledge that is being built up for many languages is, unfortunately, often buried in articles and books that concentrate on theoretical issues and are, therefore, not available in a systematized way. The *Comprehensive Grammar Resources* (CGR) series intends to make up for this lacuna by publishing extensive grammars that are solidly based on recent theoretical and empirical advances. They intend to present the facts as completely as possible and in a way that will "speak" to modern linguists but will also and increasingly become a new type of grammatical resource for the semi- and non-specialist.

Such grammar works are, of necessity, quite voluminous. And compiling them is a huge task. Furthermore, no grammar can ever be complete. Instead new subdomains can always come under scientific scrutiny and lead to additional volumes. We therefore intend to build up these grammars incrementally, volume by volume.

A pioneering project called *Modern Grammar of Dutch*, initiated by Henk van Riemsdijk and executed by Hans Broekhuis has already resulted in 6 volumes covering the noun phrase, the prepositional phrase. the adjective phrase, and a substantial part of the verb phrase. The first of these volumes are now appearing under the heading *Syntax of Dutch* and more are to come. But other projects are also under way. In Hungary, a research group is working on a grammar of Hungarian. Similarly, Romanian linguists are working towards a grammar of Romanian. In Beijing efforts are being undertaken to set up a project to produce a Grammar of Mandarin, and plans for other languages are also being drawn up.

In view of the encyclopaedic nature of grammars, and in view of the size of the works, adequate search facilities must be provided in the form of good indices and extensive cross-referencing. Furthermore, frequent updating of such resources is imperative. The best way to achieve these goals is by making the grammar resources available in electronic format on a dedicated platform. Following current trends, the works will therefore appear in dual mode: as open access objects freely perusable by anyone interested, and as hard copy volumes to cater to those who cherish holding a real book in their hands. The scientific quality of these grammar resources will be jointly guaranteed by the series editors Henk van Riemsdijk and István Kenesei and the publishing house Amsterdam University Press.