COMPREHENSIVE GRAMMAR RESOURCES
Henk van Riemsdijk & István Kenesei, series editors

Syntax of *Dutch*

Verbs and Verb Phrases

VOLUME 2

Hans Broekhuis
Norbert Corver

Amsterdam
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Volume 2

Comprehensive Grammar Resources

Editors:
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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.

References to the other volumes of the *Syntax of Dutch*.

References to the chapters and sections to the other volume in the series *Syntax of Dutch* are preceded by a letter: N + section # refers to the two volumes on nouns and noun phrases, A + section # refers to the volume on *Adjectives and adjective Phrases,* and P+section # refers to the volume on *Adpositions and adpositional phrases*. For example, refers to Section P3.2. in Hans Broekhuis (2013). *Syntax of Dutch: Adpositions and adpositional phrases*. Amsterdam: AUP.

Symbols and abbreviation used in the main text

°xxx	refers to the XXX glossary
Domain D	Domain of discourse

Abbreviations used in both the main text and the examples

AP	Adjectival Phrase
CP	Complementizer Phrase
DP	Determiner phrase
NP	Noun Phrase
Noun phrase	used when the NP-DP distinction is not relevant
NumP	Numeral Phrase
PP	Prepositional Phrase
PO-verb	Verb with a prepositional object
QP	Quantifier Phrase
TP	Tense Phrase
VP	Verb Phrase
Aux_2-$Main_1$	Verb cluster. The numeral indices indicate the hierarchical order of the verbs: V_{n+m} is superior to V_n. the en-dash indicates linear order: the element to the left precedes the element to the right in the surface order of the sentence: see Section 7.2, sub I, for details.

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	pl	Plural
acc	Accusative	poss	Possessor
dat	Dative	pred	Predicate
ben	Beneficiary	rec	Recipient
nom	Nominative	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
%	Varying judgments among speakers
#	Unacceptable under intended reading
$	Special status: old-fashioned, archaic, very formal, semantically incoherent, degraded/unacceptable for non-syntactic reasons, etc. The nature of the deviation is normally explained in the main text.

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
⇒	Necessarily implies
⇏	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

Chapter 4 Projection of verb phrases IIIa: Selection of clauses/verb phrases

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Introduction

Chapter 5 to Chapter 7 will discuss constructions in which a verb select a verbal projection, that is, a clause or some smaller (extended) °projection of some other verb. The present chapter provides the necessary background for these chapters by providing a review of a number of issues in this domain. In a sense, Chapter 5 can be seen as a continuation of the discussion in Chapter 2 on °argument structure: it discusses cases in which main verbs select a verbal projection, that is, a finite or infinitival argument clause. The reason why we did not discuss this type of °complementation in Chapter 2 is that in essence it does not alter the syntactic verb classification that was developed there: for example, many verbs taking an internal °argument have the option of choosing between a nominal and a clausal complement. This is illustrated in (1) for the transitive verb *zien* 'to see' and the ditransitive verb *vertellen* 'to tell'.

(1) a. Jan zag het schilderij.
Jan saw the painting
a′. Jan zag [dat het regende].
Jan saw that it rained
b. Peter vertelde Marie een leuk verhaal.
Peter told Marie a nice story
b′. Peter vertelde Marie [dat Jan ziek was].
Peter told Marie that Jan ill was
'Peter told Marie that Jan was ill.'

If a specific verb resists a nominal object, pronominalization of the clausal complement shows that the verb in question is in principle able to take a nominal complement and to assign case to it. The acceptability of pronominalization in (2b), for instance, shows that the verb *betogen* 'to argue' is simply a transitive verb and that the infelicitousness of the use of the nominal object *die stelling* 'that thesis' is a matter of semantics, not syntax; complements of verbs like *betogen* must simply have propositional content. This is confirmed by the fact illustrated in (2c) that there are acceptable cases of nominal complementation with noun phrases like *het tegendeel* 'the opposite', which are propositional in nature.

(2) a. Jan betoogt [dat dit boek een mislukking is].
Jan argues that this book a failure is
'Jan argues that this book is a failure.'
b. Jan betoogt dat/$^{\$}$die stelling.
Jan argues that/that thesis
c. Els zegt [dat dit boek een meesterwerk is] maar Jan betoogt *het tegendeel*.
Els says that this book a masterpiece is but Jan argues the opposite
'Els says that this book is a masterpiece but Jan argues the opposite.'

The examples in (3) show that clausal complements of PO-verbs can normally also be pronominalized or be replaced by a noun phrase. This illustrates again that clausal complements do not essentially affect the syntactic classification of verbs, and that the omission of clausal complements from our discussion of argument structure in Chapter 2 is therefore relatively innocuous.

(3) a. Jan twijfelt (erover) [of hij de juiste beslissing genomen heeft].
Jan doubts about.it whether he the right decision taken has
'Jan isn't sure (about it) whether he has taken the right decision.'
b. Jan twijfelt daarover/over zijn beslissing.
Jan doubts about.it/about his decision
'Jan isn't sure about that/about his decision.'

The reason for devoting a separate discussion to clausal/verbal arguments is that these arguments exhibit various special properties and introduce a number of complicating factors that have been investigated extensively in the literature. A discussion of these special properties and complicating factors would seriously interfere with the main line of argumentation in Chapter 2: it is better to discuss these properties in their own right. The present chapter will point at some of the topics that need special attention.

After having read the general discussion in this chapter, the reader will be sufficiently equipped to read the next three chapters, which we briefly review here for convenience. Chapter 5 starts by showing that main verbs can take a number of different types of clausal/verbal arguments: the examples in (4) show that such argument clauses may be finite or infinitival: finite argument clauses are discussed in Section 5.1 and the various types of infinitival clauses in Section 5.2.

(4) a. Jan vertelde me *dat Marie in Utrecht woont*. [finite]
Jan told me that Marie in Utrecht lives
'Jan told me that Marie lives in Utrecht.'
b. Jan verzocht me *om naar Amsterdam te komen*. [infinitival]
Jan asked me COMP to Amsterdam to come
'Jan asked me to come to Amsterdam.'

Section 5.3 concludes Chapter 5 by investigating whether finite and infinitival clauses can function as °complementives in copular and *vinden*-constructions. Examples such as (5a) seem to point in this direction but the fact that such examples occur alongside examples such as (5b), in which the finite clause clearly functions as the subject of the construction, shows that this cannot be taken for granted.

(5) a. Een feit is [dat hij te lui is].
a fact is that he too lazy is
'A fact is that he's too lazy.'
b. Het is een feit [dat hij te lui is].
it is a fact that he too lazy is
'It is a fact that he's too lazy.'

Chapter 6 discusses the various types of verbal complements of non-main verbs. Although such complements do not function as arguments in the sense of predicate calculus, they can still be said to be selected by the non-main verbs: the examples in (6) show that perfect auxiliaries like *hebben* 'to have' select past participles, whereas aspectual verbs like *gaan* 'to go' select infinitives.

(6) a. Jan *heeft* dat boek *gelezen*.
Jan has that book read
'Jan has read that book.'
b. Jan *gaat* dat boek *lezen*.
Jan goes that book read
'Jan is going to read that book.'

Constructions with embedded non-finite clauses/verbal projections may exhibit monoclausal behavior in the sense that the °matrix verb (that is, the verb that selects the clause/verbal projection and thus heads the matrix clause) and the verb heading the non-finite complement form a °verb cluster, that is, a more or less impermeable sequence of verbs. This may give rise to what we will refer to as CLAUSE SPLITTING; the infinitival clause becomes discontinuous in the sense that the matrix verb separates the infinitival verb from its dependents (like arguments and modifiers). The phenomenon of verb clustering (which is often referred to as VERB RAISING in the formal linguistic literature) and concomitant clause splitting is illustrated in (7a): the verb *zien* 'to see' selects the infinitival complement *Peter dat boek lezen*, which surfaces as a discontinuous phrase due to clustering of the verbs *zien* 'to see' and *lezen* 'to read'. Example (7b) has been added to show that verb clustering is often obscured in main clauses because they require movement of the finite verb into second position; see Section 9.2 for discussion.

(7) a. dat Jan *Peter dat boek* ziet *lezen*.
that Jan Peter that book sees read
'that Jan sees Peter read that book.'
b. Jan ziet *Peter dat boek lezen*.
Jan sees Peter that book read
'Jan sees Peter read that book.'

Constructions with non-main verbs typically exhibit monoclausal behavior; they always involve verb clustering, as shown in (8) by the embedded counterparts of the examples in (6).

(8) a. dat Jan *dat boek* heeft *gelezen*.
that Jan that book has read
'that Jan has read that book.'
b. dat Jan *dat boek* gaat *lezen*.
that Jan that book goes read
'that Jan is going to read that book.'

Chapter 7 is devoted especially to verb clustering given that this is a recurring topic in the literature. The reader must be aware, however, that it is often not *a priori* clear what counts as a case of verb clustering. This is due to the facts listed in (9), which are established in the sections indicated; we refer the reader to these sections for detailed discussion.

(9) a. Projections headed by a participle are not only used as verbal complements of auxiliaries but can also be used as adjectival complementives; see A9.
b. Projections headed by an infinitive are not only used as infinitival clauses, but can also be used as (i) adjectival complementives (this holds especially for *te*-infinitives; see A9) or (ii) nominalizations (this holds especially for bare infinitives; see N1.3.1.2 and N2.2.3.2).

The facts in (9) appear not always to have been taken into account in the existing literature, which has led to confusion and, what is worse, an inaccurate and unnecessarily complex empirical description of verb clustering. In order to avoid this here, Chapter 5 will also discuss the disputable cases of verb clustering, which we will subsequently eliminate these from the discussion, so that Chapter 7 can focus on the true cases of verb clustering and formulate a small number of relatively simple and, in our view, descriptively adequate generalizations.

4.1. Semantic types of finite argument clauses

The examples in (10) show that finite verbal argument clauses come in at least two different forms, and that the choice between the two is largely dependent on the matrix verb: the verbs *zeggen* 'to say' and *vragen* 'to ask' differ in that the former takes declarative clauses as its complement, whereas the latter takes interrogative clauses (that is, *yes*/*no*- or *wh*-questions) as its complement.

(10) a. Jan zegt [dat/*of Peter ziek is]. [declarative clause]
Jan says that/whether Peter ill is
'Jan says that Peter is ill.'
b. Jan vraagt [of/*dat Peter ziek is]. [*yes*/*no*-question]
Jan asks whether/that Peter ill is
'Jan asks whether Peter is ill.'
b′. Jan vraagt [wie er ziek is]. [*wh*-question]
Jan asks who there ill is
'Jan asks who is ill.'

Although we occasionally find similar differences in the domain of nominal complementation (cf. *Jan stelde een vraag/*antwoord* 'Jan asked a question' versus *Jan gaf een antwoord/*vraag* 'Jan gave an answer'), this distinction is quite basic when it comes to complementation by finite clauses.

Since Grimshaw (1979) it has often been claimed that verbs are subcategorized for specific semantic types of complement clauses: embedded declarative clauses such as (10a) are of the type "proposition" and embedded questions are of the type "interrogative". Grimshaw adds the type of "*wh*-exclamative", which is found in the examples in (11); the *wh*-phrases in these examples are not interrogative but express "high degree" modification, just as in the exclamative main clauses given in the primed examples. Observe that there are a number of differences between the main and embedded clause (e.g. concerning word order and the form of the *wh*-word), which we will ignore for the moment, but to which we will return in Section 11.3.5.

(11) a. Ik was vergeten wat een ontzettend aardige vrouw Marie is. [exclamative]
I was forgotten what a very nice woman Marie is
'I'd forgotten what a very nice woman Marie is.'
a′. Wat is Marie een ontzettend aardige vrouw!
what is Marie a very nice woman
'What a very nice woman Marie is!'
b. Ik was vergeten hoe ontzettend aardig Marie is. [exclamative]
I was forgotten hoe very nice Marie is
'I'd forgotten how very nice Marie is.'
b′. Wat is Marie ontzettend aardig!
what is Marie very nice
'How very nice Marie is!'

The fact that Grimshaw (1979) includes exclamatives suggests that the list of semantic types is open-ended in the sense that it would be possible to add more semantic types to it; so it seems desirable to restrict it by imposing principled constraints on the set of possible types. An attempt to do this can be found in Nye (2013), who proposes that complement clauses are selected on the basis of two binary features: [±WH] and [±FACTIVE]. These features characterize the four different constructions in (12) provided we adopt the following definition of factivity: FACTIVITY refers to constructions with verbs which take a complement clause, and where the speaker presupposes the truth of some proposition expressed by that clause; see Kiparsky & Kiparsky (1970) in the interpretation of Broekhuis & Nye (2013). In the (a)-examples the relevant proposition is expressed by the full complement clause, whereas in the (b)-examples it is expressed by the non-*wh* part of the complement clause. For the two types of *wh*-questions, see also Groenendijk & Stokhof (1984:91ff.) who define the distinction in terms of pragmatic implicatures, that is, the speaker's presupposition instead of factivity.

(12) a. Jan denkt dat Els morgen vertrekt. ⇏ Els vertrekt morgen.
Jan thinks that Els tomorrow leaves Els leaves tomorrow
'Jan thinks that Els is leaving tomorrow. ⇏ Els is leaving tomorrow.'
a′. Jan betreurt dat Els morgen vertrekt. ⇒ Els vertrekt morgen.
Jan regrets that Els tomorrow leaves Els leaves tomorrow
'Jan thinks that Els is leaving tomorrow. ⇒ Els is leaving tomorrow.'
b. Jan vroeg wie er vertrekt. ⇏ Er vertrekt iemand.
Jan asked who there leaves there leaves someone
'Jan asked who is leaving. ⇏ someone is leaving.'
b′. Jan weet wie er vertrekt. ⇒ Er vertrekt iemand.
Jan knows who there leaves there leaves someone
'Jan knows who is leaving. ⇒ someone is leaving.'

The binary feature approach thus gives rise to the four construction types in Table 1, which now includes the new class of factive interrogatives illustrated in (12b′).

Table 1: Complement clause selection

	[-WH]	[+WH]
[-FACTIVE]	non-factive declarative (12a)	non-factive interrogative (12b)
[+FACTIVE]	factive declarative (12a′)	factive interrogative (12b′) *wh*-exclamative (11)

Another advantage of adopting the binary features [±WH] and [±FACTIVE] is that they enable us to account for the fact that *betreuren* ‘to regret’ and *weten* ‘to know’ impose different selection restrictions on their complement; the unacceptability of (13a) shows that the verb *betreuren* is only compatible with declarative clauses, whereas the acceptability of (13b) shows that *weten* is compatible both with declarative and with interrogative clauses. This can be expressed by assuming that *betreuren* selects a [-WH,+FACTIVE] complement clause, but that *weten* does not impose restrictions on the [wh]-feature and thus simply selects a [+FACTIVE] complement clause. Providing a similar account in a non-*ad hoc* fashion seems harder if we adopt Grimshaw’s claim that verbs select semantic types like proposition, interrogative or exclamative.

(13) a. *Jan betreurt wanneer Els vertrekt. [cf. example (12a′)]
Jan regrets when Els leaves
b. Jan weet dat Els morgen vertrekt. [cf. example (12b′)]
Jan knows that Els tomorrow leaves
‘Jan knows that Els is leaving tomorrow.’

Note in passing that examples like *Ik betreur [wat je hier schrijft]* ‘I regret what you write here’ are not relevant in this context: the bracketed part is a free relative, therefore we are dealing with a nominal complement and not a complement clause.

In a similar way, we might account for the fact that verbs like *betwijfelen* ‘to doubt’ in (14) can be combined with an embedded *yes*/*no*-question, but not with an embedded *wh*-question by claiming that its interrogative complement clause must be [-FACTIVE]—although it should be noted that this still leaves open why the embedded *wh*-question in (14) cannot be interpreted as non-factive. Again, providing a similar account is not possible under Grimshaw’s proposal where *yes*/*no*- and *wh*-questions are claimed to be of the same semantic type.

(14) Jan betwijfelt of/*wanneer Marie vertrekt.
Jan doubts whether/when Marie leaves
‘Jan doubts whether Marie will leave.’

For completeness’ sake, it should be noted that a less fortunate aspect of a binary feature approach is that it does not account for the fact that factive verbs like *weten* can also take *yes*/*no*-questions: *Jan weet (niet) of Marie morgen komt* ‘Jan knows/does not know whether Marie is coming tomorrow’, which can never be used to express a non-null proposition. This, as well as the problem noted for example (14), shows that the binary feature approach is still in need of some fine-tuning, but we leave this issue for future research.

The new class of [+FACTIVE,+WH] verbs does not seem to be restricted to factive interrogative constructions. If we assume that the feature [+WH] does not refer to a semantic feature but to the formal (syntactic/morphological) feature that *wh*-elements have in common and that enables them to undergo *wh*-movement, it may also include verbs taking exclamative complements; cf. the primeless examples in (11) above. Another construction that may be included, which is discussed in Nye (2013), is the one illustrated in (15a); the complement clause in this construction, which is especially found in narrative contexts, is introduced by the *wh*-word *hoe* 'how' but seems to be more or less semantically equivalent with the factive declarative *dat*-clause in (15b).

(15) a. Ik herinner me goed hoe hij daar altijd stond te kletsen.
I remember me well how he there always stood to chat
'I well remember how he always stood chatting there.'
b. Ik herinner me goed dat hij daar altijd stond te kletsen.
I remember me well that he there always stood to chat
'I well remember that he always stood chatting there.'

This section has shown that the semantic selection restrictions on finite complement clauses exceed the dichotomies between (i) declarative and interrogative clauses and (ii) yes/no- and *wh*-questions normally found in descriptive grammars. In addition, we have shown that Nye's (2013) binary-feature approach to the selection of complement clauses has certain advantages compared to Grimshaw's (1979) approach based on semantic types.

4.2. Finite and infinitival argument clauses

We need to distinguish between finite and infinitival argument clauses. The examples in (16) show that the choice depends on the matrix verb: whereas propositional verbs like *zeggen* 'to say' or *beweren* 'to claim' can take either a finite or an infinitival clause, an °irrealis verb like *proberen* 'to try' is only compatible with an infinitival clause. Note that we assume that the infinitival clauses in the primed examples contain a phonetically empty pronominal element °PRO that functions as the implied subject of the infinitival clause; we will discuss this element in more detail in Section 4.3.

(16) a. Jan beweert/zegt [dat hij morgen komt]. [finite clause]
Jan claims/says that he tomorrow comes
'Jan claims that he'll come tomorrow.'
a′. Jan beweert /zegt [PRO morgen te komen]. [*te*-infinitival]
Jan claims/says tomorrow to come]
'Jan claims to come tomorrow.'
b. *Jan probeert [dat hij morgen komt]. [finite clause]
Jan tries that he tomorrow comes
b′. Jan probeert [PRO morgen te komen]. [*te*-infinitival]
Jan tries tomorrow to come]
'Jan tries to come tomorrow.'

Replacing finite interrogative clauses by infinitival ones does not seem to be always possible. Although example (17a′) is acceptable, it belongs to a more formal register of the language—in speech we only find more or less fixed forms like *Hij* *vroeg me wat te doen* ‘he asked me what he was supposed to do’. Example (17b′) is also acceptable, but the verb does not introduce a question; instead the embedded clause has the function of a request.

(17) a. Jan vroeg me [hoe hij die auto kon repareren]. [finite clause]
Jan asked me how he that car could repair
‘Jan asked me how he could repair that car.’
a′. Jan vroeg me [hoe PRO die auto te repareren]. [*te*-infinitival]
Jan asked me how that car to repair
b. Jan vroeg Marie [of ze kwam]. [finite clause]
Jan asked Marie whether she came
‘Jan asked (= inquired from) Marie whether she’d come.’
b′. Jan vroeg Marie [PRO te komen]. [*te*-infinitival]
Jan asked Marie to come
‘Jan asked (= requested from) Marie to come.’

That the verb determines the form of the clausal argument is also clear from the examples in (18), which show that while perception verbs like *zien* ‘to see’ exhibit an alternation between finite and non-finite complement clauses, the causative/permission verb *laten* allows infinitival clauses only.

(18) a. Jan zag [dat Marie vertrok]. [finite clause]
Jan saw that Marie left
a′. Jan zag [Marie (*te) vertrekken]. [bare infinitival]
Jan saw Marie to leave
‘Jan saw Marie leave.’
b. *Jan laat [dat Marie vertrekt]. [finite clause]
Jan lets that Marie leaves
b′. Jan laat [Marie (*te) vertrekken]. [bare infinitival]
Jan lets Marie to leave

A comparison of the primed examples in (18) with those in (16) shows us that the verb also determines the *type* of infinitival clause; whereas the verbs in (16) take *te*-infinitivals, the verbs in (18) take bare infinitivals. Section 5.2 will provide a brief introduction to the different types of infinitival clauses.

It seems that there are only few verbs that can be combined with a finite but not with an infinitival declarative object clause. Manner of speech verbs seem to prefer a finite clause as their complement, but judgments on the corresponding infinitival constructions appear to differ from case to case and from person to person. This is clear from a Google search (3/16/2012) on the string [V_{finite} * *te zullen*] for various tense forms of the matrix verbs *roepen* ‘to call’, *schreeuwen* ‘to yell’ and *huilen* ‘to cry’. while there are countless examples in which these verbs are followed by a finite declarative clause, our search resulted in only a small number of cases in which they were followed by an infinitival clause. We found a relatively large number of examples such as (19a′) with the verb *roepen*, but only two examples such as (19b′) with the verb *schreeuwen*, and no examples such as (19c′) with the verb *huilen* ‘to cry’. Nevertheless, the primed examples all seem passable for at least some of the speakers we have consulted.

(19) a. Hij riep jarenlang [dat hij nooit zou trouwen].
he called for.years that he never would marry
‘He called for years that he would never marry.’
a′. Hij riep jarenlang [PRO nooit te zullen trouwen].
he called for.years never to will marry
b. Ze schreeuwden [dat ze hem zouden vermoorden].
they yelled that they him would kill
‘They yelled that they would kill him.’
b′. %Ze schreeuwden [PRO hem te zullen vermoorden].
they yelled him to will kill
c. Het jongetje huilde [dat hij gevallen was].
the boy cried that he fallen was
‘The boy cried that he’d fallen.’
c′. %Het jongetje huilde [PRO gevallen te zijn].
the boy cried fallen to be

At first sight, the (a)-examples in (20) seem to contradict the claim that there are few verbs that can be combined with a finite declarative clause only, but the (b)-examples show that we should be careful not to jump to conclusions.

(20) a. Jan merkte/ontdekte [dat hij loog].
Jan noticed/discovered that he lied
a′. $Jan merkte/ontdekte [PRO te liegen].
Jan noticed/discovered to lie
b. Jan merkte/ontdekte [dat hij honger had].
Jan noticed/discovered that he hunger had
‘Jan noticed/discovered that he was hungry.’
b′. Jan merkte/ontdekte [PRO honger te hebben].
Jan noticed/discovered hunger to have
‘Jan noticed/discovered that he was hungry.’

The contrast between the two primed examples seems to be related to the preferred interpretation of the implied subject PRO of the infinitival clause. First, consider the primeless examples with a finite clause: the most prominent reading of (20a) is that Jan noticed or discovered something about someone else, that is, the subject pronoun *hij* ‘he’ of the embedded clause is preferably interpreted as referring to some individual not mentioned in the sentence; example (20b), on the other hand, is also compatible with a reading in which Jan noticed or discovered something about himself, that is, in which the subject pronoun *hij* takes the subject of the matrix clause as its antecedent. The contrast between the primed examples can now be accounted for by referring to the fact that the implied subject PRO of the infinitival clause differs from the subject pronoun *hij* in that it *must* be interpreted as coreferential with the subject of the matrix clause; this makes the interpretation of (20a′) as unusual as that of (20a) if the pronoun *hij* is taken to be coreferential with the subject of the matrix clause. See Section 4.3 for a brief introduction to the restrictions on the interpretation of the PRO-subject of infinitival argument clauses.

It seems that, besides restrictions imposed by the interpretation of PRO, there are various other factors that may affect the acceptability of infinitival argument clauses. The examples in (21), for instance, suggest that the verb *voorkomen* ‘to prevent’ can only select finite clauses; the pronoun *hij* in the (a)-examples can without difficulty be interpreted as coreferential with the subject of the main clause but nevertheless the primed examples are severely degraded.

(21) a. Jan voorkwam net op tijd [dat hij zijn bril vermorzelde].
Jan prevented just in time that he his glasses crushed
‘Jan prevented just in time that he crushed his glasses.’
a′. $^{*?}$Jan voorkwam net op tijd [PRO zijn bril te vermorzelen].
Jan prevented just in time his glasses to crush
b. Jan voorkwam net op tijd [dat hij viel].
Jan prevented just in time that he fell
‘Jan prevented just in time that he fell.’
b′. $^{*?}$Jan voorkwam net op tijd [PRO te vallen].
Jan prevented just in time to fall

The examples in (22) show, however, that the primed examples improve a great deal when we add an adverbial phrase indicating causation or manner.

(22) a. $^{(?)}$Jan voorkwam hierdoor net op tijd [PRO zijn bril te vermorzelen].
Jan prevented by.this just in time his glasses to crush
b. $^{(?)}$Jan voorkwam zo net op tijd [PRO te vallen].
Jan prevented thus just in time to fall

The primed examples in (23), which are adaptations of actually occurring sentences on the internet, further show that examples like these become even better if the embedded clause is a passive or copular construction. Observe that the relevant issue is *not* that subjects of passive and copular constructions are internal arguments because the same thing holds for the subjects of °unaccusative verb like *vallen* ‘to fall’ in the (b)-examples above.

(23) a. Hierdoor voorkwam hij [dat hij gedeporteerd werd naar Duitsland].
by.this prevented he that he deported was to Germany
‘In this way he prevented that he was deported to Germany.’
a′. Hierdoor voorkwam hij [PRO gedeporteerd te worden naar Duitsland].
by.this prevented he deported to be to Germany
b. Zo voorkwam ik [dat ik zeeziek werd].
thus prevented I that I seasick became
‘In this way I prevented that I became seasick.’
b′. Zo voorkwam ik [PRO zeeziek te worden].
thus prevented I seasick to become

Although there are more potential counterexamples to the claim that there are only few verbs that can be combined with a finite but not with an infinitival declarative clause, we will conclude by pointing out the contrast between the two examples in (24). The reason why (24a) does not have an infinitival counterpart might simply be that we are dealing with an idiomatic expression (which is also listed as such in dictionaries); the options for substituting the finite clause in (24a) are very limited.

(24) a. Ik maakte [dat ik wegkwam].
I made that I away-came
'I got out as quickly as I could.'
b. *Ik maakte [PRO weg te komen].
I made away to come

The examples in (25) suggest that there are also few verbs that can be combined with a finite but not with an infinitival prepositional object clause: the (a)-examples show that verbs such as *verwachten* 'to expect' that normally take finite PO-clauses also allow infinitival complements; verbs such as *vragen* 'to request' that normally take infinitival PO-clauses give rise to a degraded result with finite complements.

(25) a. Jan verwacht [dat hij wordt uitgenodigd].
Jan expects that he is prt-invited
'Jan expects that he'll be invited.'
a′. Jan verwacht uitgenodigd te worden.
Jan expects prt.-invited to be
'Jan expects to be invited.'
b. Jan vraagt Marie [PRO te vertrekken].
Jan asks Marie to leave
'Jan asks Marie to leave.'
b′. $^{??}$Jan vraagt Marie [dat zij vertrekt].
Jan asks Marie that she leaves

To our knowledge the factors affecting the acceptability of infinitival argument clauses have not been studied in detail but we provisionally conclude on the basis of the discussion above that verbs selecting a finite declarative argument clause may also take an infinitival clause in the normal course of things, but not necessarily vice versa. Future research must show whether this conclusion is tenable.

4.3. Control properties of verbs selecting an infinitival clause

Section 4.2 has already shown that there are different restrictions on the interpretation of referential subject pronouns of finite clauses on the one hand, and °PRO-subjects of infinitival complement clauses on the other. The former can freely take some antecedent from the °matrix clause or refer to some entity that is part of the domain of discourse, whereas the latter must be coreferential with some noun phrase in the matrix clause. We illustrate this again by showing that passivization of the primeless examples in (26) gives rise to different results in acceptability: the subject pronoun *hij* 'he' of the embedded finite clause in (26a′) can readily take some antecedent from the discourse domain, whereas the PRO-subject of the infinitival clause in (26b′) cannot.

(26) a. Jan ontdekte [dat hij honger had].
Jan discovered that he hunger had
'Jan discovered that he was hungry.'
a′. Er werd ontdekt [dat hij honger had].
there was discovered that he hunger had
'It was discovered that he was hungry.'

b. Jan ontdekte [PRO honger te hebben].
Jan discovered hunger to have
‘Jan discovered that he was hungry.’
b′. *Er werd ontdekt [PRO honger te hebben].
there was discovered hunger to have
Intended reading: ‘It was discovered that he was hungry.’

The restrictions on the interpretation of PRO-subjects of infinitival complement clauses have become known as °control theory. In many cases, it is required that PRO should be controlled, that is, bound by some antecedent in the matrix clause. The examples in (27) show, however, that PRO cannot take just any antecedent; in (27a) PRO can only be controlled by the subject and in (27b) it can only be controlled by the object of the matrix clause. The available readings are indicated by means of referential indices.

(27) a. Jan$_i$ beloofde Peter$_j$ [PRO$_{i/*j}$ te komen]. [subject control]
Jan promised Peter to come
‘Jan promised Peter to come.’
b. Jan$_i$ vroeg Peter$_j$ [PRO$_{j/*i}$ te komen]. [object control]
Jan asked Peter to come
‘Jan asked Peter to come.’

The examples in (27) suggest that the interpretation of PRO is determined by the matrix verb: accordingly, verbs like *beloven* ‘to promise’ have become known as subject control verbs, and verbs like *vragen* ‘to ask’ as object control verbs. However, the situation is more complex given that the contents of the embedded clause may also affect the control options; adding a deontic modal verb like *mogen* ‘to be allowed’ to the infinitival clauses in (27), for example, reverses the interpretation possibilities of PRO, a phenomenon known as CONTROL SHIFT.

(28) a. Jan$_i$ beloofde Peter$_j$ [PRO$_{j/*i}$ te mogen komen]. [object control]
Jan promised Peter to be.allowed.to come
‘Jan promised Peter to be allowed to come.’
b. Jan$_i$ vroeg Peter$_j$ [PRO$_{i/*j}$ te mogen komen]. [subject control]
Jan asked Peter to be.allowed.to come
‘Jan asked Peter to be allowed to come.’

The examples in (27) and (28) show that the interpretation of PRO can be affected by properties of both the matrix verb and the infinitival clause. Moreover, it would seem that these restrictions are not syntactic in nature but related to our knowledge of the world; the interpretation of example (27a), for instance, is related to the fact that the speaker has the ability to promise that he will perform a certain action himself but he cannot promise that the addressee will perform that action; the interpretation of example (28a), on the other hand, is based on the fact that the speaker may grant permission to the addressee to do something, whereas it is much less likely that he will or needs to grant such permission to himself. Consequently, it is not at all surprising that we find similar shifts when the verbs *beloven* and *vragen* take finite clauses as their complement.

(29) a. Jan$_{i}$ beloofde Peter$_{j}$ [dat hij$_{i/*j}$ zou komen].
Jan promised Peter that he would come
'Jan promised Peter that he (≠ Peter) would come.'
a′. Jan$_{i}$ beloofde Peter$_{j}$ [dat hij$_{j/*i}$ mocht komen].
Jan promised Peter that he be.allowed.to come
'Jan promised Peter that he (≠ Jan) would be allowed to come.'
b. Jan$_{i}$ vroeg Peter$_{j}$ [of hij$_{j/*i}$ kwam].
Jan asked Peter whether he came
'Jan asked Peter whether he (≠ Jan) was willing to come.'
b′. Jan$_{i}$ vroeg Peter$_{j}$ [of hij$_{i/*j}$ mocht komen].
Jan asked Peter whether he was.allowed.to come
'Jan asked Peter whether he (≠ Peter) was allowed to come.'

For the moment we provisionally conclude that the PRO-subject of infinitival argument clauses must be controlled by some antecedent in the matrix clause, but that the actual choice of the antecedent must be compatible with our knowledge of the world. Section 5.2 will show, however, that there are circumstances under which the PRO-subject may be exempt from the requirement that it should be bound.

4.4. Three main types of infinitival argument clauses

Sections 4.2 and 4.3 have shown that we need to distinguish between verbs taking finite and verbs taking infinitival complement clauses, and that these types of complements introduce a number of issues of a more semantic or pragmatic nature. On top of this, this section will show that infinitival clauses do not constitute a single syntactic category but can be subdivided into at least the three formally different categories illustrated in (30): *Om* + *te*-infinitivals, *te*-infinitivals and bare infinitivals.

(30) a. Jan beloofde [om PRO het boek naar Els te sturen]. [*om* + *te*-infinitival]
Jan promised COMP the book to Els to send
'Jan promised to send the book to Els.'
b. Jan beweerde [PRO het boek naar Els te sturen]. [*te*-infinitival]
Jan claimed the book to Els to send
'Jan claimed to send the book to Els.'
c. Jan wilde [PRO het boek naar Els sturen]. [bare infinitival]
Jan wanted the book to Els send
'Jan wanted to send the book to Els.'

The following sections will briefly introduce the three subtypes in (30). For reasons of presentation we begin with *om* + *te*-infinitivals and bare infinitivals, because we will see that *te*-infinitivals again fall into various subgroups, some of which behave more like *om* + *te*-infinitivals and some of which behave more like bare infinitivals.

4.4.1. Om + te-*infinitivals*

Om + *te*-infinitivals are formally characterized by the presence of the infinitival marker *te* and the complementizer-like element *om*. There are at least two analyses available for the infinitival marker *te*. According to some proposals *te* is a bound morpheme prefixed to the infinitival verb, just like *ge-* is a bound morpheme in past participle forms like *ge-pak-t* ‘taken’. This may account for the fact that both *te* and *ge-* are normally adjacent to the stem of the verb. An alternative proposal is that *te* is the T(ense) °head of the functional projection TP. We refer the reader to Section 1.3, sub IIIA1, and references cited there for a more extensive discussion of these proposals.

One reason for assuming that the element *om* is a complementizer, and not a preposition, is that infinitival complement clauses introduced by this element behave like finite complement clauses and not like PP-complements in that they must be in extraposed position, that is, they obligatorily follow the °matrix verb in clause-final position. This can be illustrated by means of the embedded and the perfect-tense counterparts of example (30a), which are given in (31).

(31) a. dat Jan beloofde [om PRO het boek naar Els te sturen].
that Jan promised COMP the book to Els to send
‘that Jan promised to send the book to Els.’
a′. *dat Jan [om PRO het boek naar Els te sturen] beloofde.
b. Jan heeft beloofd [om PRO het boek naar Els te sturen].
Jan has promised COMP the book to Els to send
‘Jan has promised to send the book to Els.’
b′. *Jan heeft [om PRO het boek naar Els te sturen] beloofd.

Further grounds for assuming that *om* is a complementizer are that it can often be omitted, as illustrated in (32a). This would be quite surprising for a preposition, but it is attested for complementizers in many languages: cf. *John promised (that) he would* send *Elisabeth the book*. Another reason for assuming we are not dealing with a PP-complement is that the infinitival clause is not pronominalized by means of the pronominal PP *erom* but by the pronoun *dat*; this is illustrated in (32b).

(32) a. Jan heeft beloofd [(om) PRO het boek naar Els te sturen].
Jan has promised COMP the book to Els to send
‘Jan has promised to send the book to Els.’
b. Jan heeft dat/*erom beloofd.
Jan has that/P+it promised
‘Jan has promised that.’

It should be noted, however, that the omission of *om* is not syntactically innocuous; the examples in (33) show that it may make the infinitival clause transparent for extraction of the object to a position to the left of the matrix verb in the matrix clause; see Section 4.4.3 for more detailed discussion. The percentage sign in (33b) is added because some speakers object to such examples.

(33) a. *Jan heeft het boek$_{i}$ beloofd [om PRO t_{i} naar Els te sturen].
Jan has the book promised COMP to Els to send
b. $^{\%}$Jan heeft het boek$_{i}$ beloofd [PRO t_{i} naar Els te sturen].
Jan has the book promised to Els to send

The fact that this type of extraction is excluded from finite clauses such as (34a) suggests that o*m* + *te*-infinitivals and finite clauses are of the same categorial type; they are CPs. Infinitival clauses without *om*, on the other hand, are likely to be less extended verbal projections, which would make TP a likely candidate. See Section 9.1 for an introduction to the functional categories CP and TP.

(34) a. Jan heeft beloofd [$_{CP}$ dat hij het boek naar Els zal sturen].
Jan has promised that he the book to Els will send
'Jan has promised that he'll send the book to Els.'
b. *Jan heeft het boek$_i$ beloofd [dat hij t_i naar Els zal sturen].

For completeness' sake, note that the string *Jan heeft het boek beloofd dat hij naar Els zal sturen* is acceptable if the postverbal clause is interpreted as a relative clause modifying *het boek* ("John promised the book that he will bring to Els"), but this is of course irrelevant here.

4.4.2. Bare infinitivals

This section discusses a number of formal properties of so-called bare infinitivals and shows that we should distinguish at least three different subcategories.

I. The infinitive verb is not preceded by te

Bare infinitivals are characterized by the fact that they contain neither the complementizer-like element *om* nor the infinitival marker *te*, that is, the infinitive is bare in the sense of not being accompanied by any of the elements that we may find in the two other types of infinitival clauses. The question as to whether a verbal complement may appear as a bare infinitival depends on the matrix verb; a verb like *willen* 'to want', for example, may take a finite clause or a bare infinitival, but not an (*om* +) *te*-infinitival. Note in passing that English *to want* crucially differs from Dutch *willen* in selecting a *to*-infinitival, not a bare infinitival.

(35) a. Jan wil [dat Peter het boek naar Els stuurt].
Jan wants that Peter the book to Els sends
'Jan wishes that Peter will bring the book to Els.'
b. *Jan wil [(om) PRO het boek naar Els te sturen].
Jan wants COMP the book to Els to send
c. Jan wil [PRO het boek naar Els sturen].
Jan wants the book to Els send
'Jan wants to send the book to Els.'

II. Verb clustering

Customarily, the bare infinitive forms a °verb cluster with the verb selecting the bare infinitival complement. This is clear from the fact that the two verbs cluster in clause-final position and that, as a result, the infinitival clause may be split: example (36a) shows that whereas the bare infinitive follows the matrix verb in clause-final position, all other constituents of the infinitival clause must precede it. For convenience, we italicize the infinitival clauses in the examples below.

(36) a. dat Jan *het boek naar Els* wil *sturen*.
that Jan the book to Els wants send
‘that Jan wants to send the book to Els.’
b. $^{\%}$dat Jan *het boek* wil *naar Els sturen*.
b′. $^{\%}$dat Jan wil *het boek naar Els sturen*.

The percentage signs in the two (b)-examples in (36) are added to indicate that certain southern varieties of Dutch also allow parts of the remaining part of the embedded infinitival clause to follow the matrix verb; we will ignore this for the moment and refer the reader to Section 5.2.3 for an extensive discussion of this.

III. The infinitivus-pro-participio (IPP) effect

Monoclausal behavior in the sense indicated in the previous subsection is typically signaled by the so-called °*infinitivus-pro-participio* effect, that is, the phenomenon that a verb does not surface in its expected past participial form when governed by a perfect auxiliary, but as an infinitive. That constructions with bare infinitival complements exhibit monoclausal behavior can be shown by comparing the perfect-tense constructions in (37): if the matrix verb *willen* selects a finite clause, as in (37a), it behaves as expected by appearing as a past participle in perfect-tense constructions, but when it selects a bare infinitival complement, it must appear as an infinitive in such constructions.

(37) a. Jan had gewild/*willen [dat Peter het boek naar Els had gestuurd].
Jan had wanted/want that Peter the book to Els had sent
‘Jan had wished that Peter would have sent the book to Els.’
b. Jan had *het boek naar Els* willen/*gewild *sturen*.
Jan had the book to Els want/wanted send
‘Jan had wanted to send the book to Els.’

IV. Three subtypes of bare infinitival clauses

Bare infinitival complements may occur in at least three different syntactic environments, which differ in the way their subject is realized in the surface structure: the subject can be realized as an accusative noun phrase in an °AcI-construction, the phonetically empty element PRO in a °control construction, or as the subject of the matrix clause in a °subject raising construction. In the following examples the infinitival clauses are italicized and their subjects are underlined.

(38) a. Jan zag *Marie/haar op de hei lopen*. [AcI-infinitival]
Jan saw Marie/her on the heath walk
‘Jan saw Marie/her walk on the heath.’
b. Jan wil *PRO een boek kopen*. [control infinitival]
Jan wants a book buy
‘Jan wants to buy a book.’
c. *Marie/Zij* kan *vertraagd zijn*. [subject raising infinitival]
Marie/she may delayed be
‘Marie/She may be delayed.’

We will refer to these infinitival constructions by means of the names given in straight brackets, for reasons that will become clear in the following subsections.

A. Accusativus-cum-infinitivo infinitivals

Bare infinitival complement clauses selected by perception verbs like *zien* 'to see' or the causative/permissive verb *laten* 'to make/let' exhibit an ACCUSATIVUS-CUM-INFINITIVO effect: the subjects of the bare infinitival clauses do not appear as the phonetically empty element PRO, as would normally be the case in infinitival clauses, but as an accusative noun phrase. This is illustrated in (39), in which the subject of the infinitival clause is underlined.

(39) a. dat Jan *het meisje*/*haar* *een lied* hoorde *zingen*.
that Jan the girl/her a song heard sing
'that Jan heard the girl/her sing a song.'
b. dat Jan *het meisje*/*haar* *een lied* liet *zingen*.
that Jan the girl/her a song made/let sing
'that Jan made/let the girl/her sing a song.'

It is generally assumed that the subject of the infinitival complement is case-marked by the matrix verb, that is, that we are dealing with so-called exceptional case-marking *across the boundary of an infinitival clause*. That it is the matrix verb which assigns case to the subject of the embedded clause is, however, not so easy to prove for Dutch because the examples in (40) show that matrix verbs of AcI-constructions cannot be passivized. We are therefore not able to provide evidence that the underlined noun phrases in (39) are indeed assigned °accusative case by the active matrix verbs. This claim must therefore be motivated by appealing to the fact that there is simply no other element available that could be held responsible for case-assignment.

(40) a. *dat het meisje/zij een lied werd gehoord/horen zingen.
that the girl/she a song was heard/hear sing
b. *dat het meisje/zij een lied werd gelaten/let zingen.
that the girl/she a song was made/make sing

That the underlined phrases in (39) are not selected by the matrix verbs but function as the subjects of the bare infinitival clauses seems undisputed and can be supported by means of pronominalization; the fact that the accusative noun phrase cannot be realized in (41a) shows that it is not selected by the matrix verb *horen* 'to hear' but must be part of the infinitival clause pronominalized by *dat* 'that'. Unfortunately, (41b) shows that pronominalization cannot readily be used as a test in the case of the verb *laten* 'to make/let', as it is at best marginally acceptable with this verb under its permissive reading and completely excluded under its causative reading.

(41) a. dat Jan (*het meisje/*haar) dat hoorde. [perception verb]
that Jan the girl/her that heard
'that Jan heard that.'
b. dat Jan $^{??}$(*het meisje/*haar) dat liet. [permissive verb]
that Jan the girl/her that let
b′. *dat Jan (het meisje/haar) dat liet. [causative verb]
that Jan the girl/her that let

Accusativus-cum-infinitivo constructions of the type discussed here exhibit monoclausal behavior. First, as is indicated by italics in (39) above, the bare infinitival complements are normally split; whereas the bare infinitives normally follow the matrix verbs in clause-final position, their arguments must precede them. Second, the examples in (42) show that they exhibit the IPP-effect; the matrix verb cannot surface as a past participle in perfect-tense constructions, but must be realized as an infinitive.

(42) a. dat Jan het meisje/haar een lied heeft horen/*gehoord zingen.
that Jan the girl/her a song has hear/heard sing
'that Jan has heard the girl/her sing a song.'
b. dat Jan het meisje/haar een lied heeft laten/*gelaten zingen.
that Jan the girl/her a song has make/made sing
'that Jan has made/let the girl/her sing a song.'

B. Control infinitivals

A bare infinitival clause selected by a so-called root/deontic modal like *kunnen* 'to be able', *mogen* 'to be allowed' or *willen* 'to want', or a verb like *leren* 'to teach/learn' has its subject realized as the phonetically empty pronominal-like element PRO. As in the case of (*om* +) *te*-infinitivals, the PRO-subject of a bare infinitival can be either controlled by the subject or by the object of the matrix clause. The choice again depends on the matrix verb: whereas de deontic modals and intransitive *leren* 'to learn' require PRO to be controlled by their subjects, transitive *leren* 'to teach' requires that PRO be controlled by its object. Again, we have italicized the bare infinitival clause and underlined its subject.

(43) a. dat Jan$_i$ *PRO*$_i$ *het boek naar Marie* kan *brengen*.
that Jan the book to Marie is.able bring
'Jan is able to bring the book to Marie.'
b. dat [zijn dochtertje]$_i$ *PRO*$_i$ *piano* leert *spelen*.
that his daughter piano learns play
'that his daughter is learning to play the piano.'
b′. dat Jan$_i$ [zijn dochtertje]$_j$ *PRO*$_{j/*i}$ *piano* leert *spelen*.
that Jan his daughter piano teaches play
'that Jan teaches his daughter to play the piano.'

Control constructions of the sort discussed here exhibit monoclausal behavior. First, the constructions in (43) show once more that the bare infinitival can be split; as is indicated by italics, the arguments of the bare infinitival precede the matrix verb in clause-final position, whereas the bare infinitive normally follows it. Second, the examples in (44) show that the construction exhibits the IPP-effect; the matrix verbs cannot appear as past participles in perfect-tense constructions, but must surface as infinitives.

(44) a. dat Jan *PRO* *het boek naar Marie* heeft kunnen/*gekund *brengen*.
that Jan the book to Marie has be.able/been.able bring
'that Jan has been able to bring the book to Marie.'

b. dat zijn dochtertje PRO *piano* heeft leren/*geleerd *spelen*.
that his daughter piano has learn/learned play
‘that his daughter has learnt to play the piano.’
b′. dat Jan zijn dochtertje PRO *piano* heeft leren/*geleerd *spelen*.
that Jan his daughter piano has teach/ taught play
‘that Jan has taught his daughter to play the piano.’

That the noun phrases *Jan* in (43a) and *zijn dochtertje* in (43b&b′) do not function as subjects of the bare infinitivals is clear from the fact illustrated in (45) that they must also be present when the infinitival clauses are pronominalized; this shows that these noun phrases are assigned °thematic roles by the matrix verbs. The agent role of the bare infinitive must therefore be assigned to some independent argument, which motivates the postulation of a PRO-subject in these examples.

(45) a. Jan kan dat.
Jan is.able that
‘Jan is able to do that.’
b. Zijn dochtertje leert dat.
his daughter learns that
‘His daughter is learning that.’
b′. Jan leert zijn dochtertje dat.
Jan teaches his daughter that
‘Jan is teaching that to his daughter.’

Note in passing that, if we adopt the conclusion from Section 4.6 that the quality of being predicational is a defining property of main verbs, the fact that the root modal *kunnen* ‘to be able’ in the (a)-examples above is able to license the noun phrase *Jan* independently of the embedded infinitival shows that the traditional assumption that root modal verbs are non-main verbs cannot be maintained and that they must instead be seen as regular transitive verbs; cf. Klooster (1984/2001). We return to this issue in Section 4.5.

C. Subject raising infinitivals

The previous subsection has put on hold the fact that examples such as (43a) are actually ambiguous: the matrix verb can not only receive a deontic/root reading but also a so-called epistemic reading. Although the most prominent reading of (43a) is the deontic one, the ambiguity can be brought out by putting this example in the perfect tense; if the modal verb is realized as a non-finite verb, it can only be interpreted deontically as “to be able to”, but if it is realized as the finite verb it can only be interpreted epistemically as “may”.

(46) a. dat Jan PRO *het boek naar Marie* heeft kunnen *brengen*. [deontic]
that Jan the book to Marie has be.able bring
‘that Jan has been able to bring the book to Marie.’
b. dat Jan *het boek naar Marie* kan *hebben gebracht*. [epistemic]
that Jan the book to Marie may have brought
‘that Jan may have brought the book to Marie.’

That constructions with epistemic modals exhibit monoclausal behavior cannot be demonstrated by the IPP-effect as the perfect auxiliary is now part of the infinitival complement of the modal verb (see below), but it is still clear from the fact that the bare infinitival can be split: the arguments of the infinitival clause precede the modal verb in clause-final position whereas the bare infinitive normally follows it. The underlining in (46) suggests entirely different structures for the two constructions: if the modal verb has a deontic interpretation, the subject of the infinitival clause is realized as the phonetically empty pronominal element PRO; if the modal verb has an epistemic interpretation. the subject surfaces as °nominative subject of the entire sentence by being promoted to subject (“raised to the subject position”) of the matrix clause. Grounds for this assumption are again related to pronominalization of the infinitival clause; example (47a) illustrates again that the nominative subject is not affected by pronominalization if the modal verb is deontic, whereas (47b) shows that the nominative argument cannot be realized if the modal is epistemic and should therefore be assumed to belong to the pronominalized infinitival clause. We have added example (47b′) in order to support our earlier claim that the perfect auxiliary in the epistemic constructions in (46b) is part of the infinitival complement, which is pronominalized by *dat* in the (b)-examples in (47).

(47) a. Jan heeft dat gekund. [deontic/*epistemic]
Jan has that been.able
‘Jan has been able to do that.’
b. Dat kan. [epistemic/*deontic]
that may.be.the.case
b′. *Dat kan hebben.
that may.be.the.case have

There is another good reason for assuming that the nominative subject in the epistemic example in (46b) originates as the subject of the infinitival complement clause. This immediately accounts for the fact that in passive constructions such as (48b) the internal argument of the bare infinitive *stelen* ‘to steal’ surfaces as the nominative subject of the sentence; passivization of the bare infinitive first promotes the noun phrase *die auto* ‘that car’ to subject of the infinitival clause, and subject raising subsequently promotes it to subject of the matrix clause.

(48) a. Jan kan de auto/hem gestolen hebben.
Jan may that car/him stolen have
‘Jan may have stolen that car/it.’
b. Die auto/Hij kan gestolen zijn.
that car/he may stolen have.been
‘That car/It may have been stolen.’

Under the alternative hypothesis that the nominative noun phrases in the examples in (48) originate as arguments of the epistemic modal *kunnen*, we can only account for the pattern in (48) by adopting the highly unlikely assumption that passivization of the embedded verb affects the selectional properties of the matrix verb.

A final argument we mention here is that example (49a), with a subject clause introduced by the °anticipatory pronoun *het* ‘it’, is semantically more or less equivalent to (49b), at least with respect to the thematic relations between the italicized elements. If we assume that the nominative subject in (49b) originates as the subject of the infinitival clause and is subsequently promoted to subject of the matrix clause, the observed semantic equivalence follows straightforwardly.

(49) a. Het kan dat *Jan gevallen is*.
it may.be.the.case that Jan fallen is
‘It may be the case that Jan has fallen.’
b. *Jan* kan *gevallen zijn*
Jan may fallen be
‘Jan may have fallen.’

Each of the examples in (47) to (49) strongly suggests that nominative subjects in epistemic constructions such as (46b) originate as the subject of the infinitival clause and are subsequently “raised” to the subject position of the matrix clause. We can formally derive this by assuming that the subject of the infinitival clause cannot be assigned accusative case and must therefore be assigned nominative case by being promoted to subject of the matrix clause in a fashion similar to objects in passive constructions.

(50) a. ___ $V_{epistemic}$ [NP .... $V_{infinitive}$] [underlying structure]
b. NP_i $V_{epistemic}$ [t_i .... $V_{infinitive}$] [Subject Raising]

Note that the analysis in (50) implies that epistemic modals do not assign an external thematic role. They must be able to assign an internal thematic role, however, which is clear from the fact that the finite complement clause in (49a), or the anticipatory pronoun in subject position introducing it, must be semantically licensed. Given the similarity in meaning between the two constructions in (49), we may also assume that the infinitival clause in (49b) must likewise be assigned an internal thematic role. If we adopt the conclusion from Section 4.6 that being predicational is a defining property of main verbs, the conclusion that epistemic modal verbs assign an internal thematic role would imply that the traditional view that epistemic modal verbs are non-main verbs cannot be maintained; we should, instead, consider them as °unaccusative main verbs.

D. Conclusion

The previous subsections have shown that bare infinitival clauses may occur in at least three types of syntactic environment which affect the way their subject is realized: the subject can be realized as an accusative noun phrase, the phonetically empty element PRO, or it may be “raised”, that is, be promoted to subject of the matrix clause and be assigned nominative case. What we did not discuss, and what is in fact a still largely unresolved issue, is what the syntactic mechanisms are that determine the form of the subject of the infinitival clause. For example, why is it that the modal verb *willen* ‘want’ lacks the ability of perception verbs to assign accusative case to the subject of their infinitival complement. Is this simply a lexical property of the verbs involved, or are we dealing with different syntactic structures? And, why is it that the subject of the infinitival clause is realized as PRO when the modal verb *moeten* is deontic but not when it is epistemic; cf. Klooster (1986)?

(51) a. *Jan wil [Marie komen].
Jan wants Marie come
Intended reading: ‘Jan wants Marie to come.’
b. Jan moet [PRO om drie uur aanwezig zijn]. [deontic]
Jan must at three o’clock present be
‘Jan must be present at 3.p.m.’
c. Jan$_i$ moet [t_i om drie uur aanwezig geweest zijn]. [epistemic]
Jan must at three o’clock present be
‘Jan must have been present at 3.p.m.’

Since we do not have anything insightful to offer on the first question, we leave it as an unsolved issue for future research. The second question poses a severe problem for the traditional formulation of control theory in Chomsky (1981), which in effect states that °traces of movement and PRO cannot occur in the same syntactic configuration. The answer may lie in an appeal to the alternative proposal in Koster (1978:ch.2) and, more specifically, Koster (1984a/1984b) that the difference is a property of the antecedent of the empty category (trace/PRO); we will briefly return to this issue in the conclusion of Section 5.2.2.1.

4.4.3. Te-*infinitivals*

This section shows that from an observational point of view clausal complements headed by a *te*-infinitive can be divided into at least three subtypes: one type that exhibits behavior similar to *om + te* infinitivals, one type exhibiting behavior similar to bare infinitivals, and a third type that exhibits mixed behavior. The main characteristics of the three types are given in (52).

(52) • Types of *te*-infinitivals
a. Opaque: no clause splitting and no IPP-effect
b. Transparent: clause splitting and IPP-effect
c. Semi-transparent: clause splitting and no IPP

The abbreviation IPP stands for the *infinitivus-pro-participio* effect, the phenomenon that matrix verbs sometimes cannot appear as past participles in perfect-tense constructions but must surface as infinitives. Section 4.4.2, sub III, has shown that this effect is obligatory in constructions with bare infinitivals, but Subsections I to III below will demonstrate that this does not hold for *te*-infinitivals; obligatory IPP is only found with transparent *te*-infinitivals.

The term CLAUSE SPLITTING refers to the phenomenon that infinitival clauses can be discontinuous: the infinitive and its arguments may surface on different sides of the matrix verb in clause-final position. Evidence has been presented in section 4.4.2, sub II, that in the case of bare infinitivals clause splitting is a concomitant effect of °verb clustering, that is, the formation of an *impermeable series of verbs* in clause-final position. Subsection IV will show, however, that clause splitting is probably not a uniform process in the case of *te*-infinitivals: transparent and semi-transparent *te*-infinitivals are different in that only the former involve verb clustering in the technical sense given above.

The term OPAQUE (or INCOHERENT) as applied to the infinitival clause refers to the fact that such clauses constitute an independent clausal domain in the sense that they may block locally restricted syntactic dependencies like °NP-movement or °binding of the weak reflexive *zich* ‘him/her/itself’. TRANSPARENT (or COHERENT) infinitives, on the other hand, behave in certain respects as if they constitute a single clause with the matrix clause: they do not block such dependencies.

Another term for transparency found in the literature is RESTRUCTURING, which has a transformational background in that it was assumed that an underlying biclausal structure is transformationally restructured such that the embedded infinitival clause forms a monoclausal structure with the matrix clause; see Evers (1975), Rizzi (1982:ch.1) and much subsequent work. Since several more recent approaches do not adopt this transformational view, we will not use this notion in this work in order to avoid unnecessary theoretical bias.

I. Opaque te-*infinitivals*

Verbs taking opaque *te*-infinitival complement clauses are, e.g., NOM-DAT verbs, PO-verbs and particle verbs; see Evers (1975:39ff) and Den Besten et al. (1988). The primeless examples in (53) show that such verbs do not allow clause splitting; like *om* + *te*-infinitivals, the *te*-infinitival is in extraposed position, that is, placed in a position following the matrix verb in clause-final position. The primed examples further show that the matrix verbs appear as participles in the perfect tense, that is, as in the case of infinitival clauses introduced by *om*, there is no IPP-effect. For convenience, we will italicize the *te*-infinitivals in the examples below and refrain from indicating their implied PRO-subject for the sake of simplicity.

(53) a. dat het hem <**het boek*> berouwt <*het boek*> *gekocht te hebben*.
that it him the book regrets bought to have
‘that he regrets it that he has bought the book.’

a′. Het heeft hem berouwd/*berouwen *het boek gekocht te hebben*.
it has him regretted/repent the book bought to have
‘He has regretted it that he has bought the book.’

b. dat Jan ertoe <**het boek*> neigt <*het boek*> *te kopen*.
that Jan to.it the book inclines to buy
‘that Jan is inclined to buy the book.’

b′. Jan is ertoe geneigd/*neigen *het boek te kopen*.
Jan is to.it inclined/incline the book to buy
‘Jan is inclined to buy the book.’

c. dat Peter Marie <$^{??}$*dat boek*> opdraagt <*dat boek*> *te kopen*.
that Peter Marie that book prt.-ordered to buy
‘that Peter orders Marie to buy that book.’

c′. Peter heeft Marie opgedragen/*opdragen *dat boek te kopen*.
Peter has Marie prt.-ordered/prt.-order that book to buy
‘Peter has ordered Marie to buy that book.’

Opaque infinitivals appear to be characterized by the fact that they do not have the syntactic function of direct object of the matrix verb, nor are they assigned a °thematic role by it. The infinitival clauses in the (a)-examples above function as subjects and may also be introduced by the anticipatory subject pronoun *het* ‘it’. The infinitival clauses in the (b)-examples correspond to the nominal part of a PP-complement of the matrix verb, as is clear from the fact that they can be introduced by the °anticipatory pronominal PP *ertoe* ‘to it’. The infinitival clauses in the (c)-examples, finally, are not arguments of the verb at all but licensed as °logical SUBJECTs of the verbal particle *op*; see Section 2.2.1.

II. Transparent te-*infinitivals*

Verbs selecting a transparent infinitival complement often have a modal or aspectual interpretation. Examples are the modal verbs *schijnen* ‘to seem’, *lijken* ‘to appear’ and *blijken* ‘to turn out’. That the infinitival complements of these verbs are transparent is clear from the fact that they are obligatorily split; whereas the *te*-infinitive in (54) must follow the matrix verb in clause-final position, its object must precede it.

(54) dat Jan <*een nieuwe auto*> schijnt <**een nieuwe auto*> *te kopen*.
that Jan a new car seems to buy
‘that Jan seems to be buying a new car.’

That the infinitival complement in (54) is transparent is also clearly shown by the fact that we are dealing with °subject raising, that is, promotion of the subject of the infinitival clause to °nominative subject of the higher clause. This will become clear when we consider the near-equivalent examples in (55): the subject of the finite complement clause in (55a) appears as the nominative subject of the entire sentence in (55b), in which the complement clause is infinitival.

(55) a. Het schijnt *dat Jan een nieuwe auto koopt*.
it seems that Jan a new car buys
‘It seems that Jan is buying a new car.’
b. dat *Jan een nieuwe auto* schijnt *te kopen*.
that Jan a new car seems to buy
‘that Jan seems to be buying a new car.’

Unfortunately, it is more difficult to illustrate that the modal verbs *schijnen* ‘to seem’, *lijken* ‘to appear’ and *blijken* ‘to appear’ trigger the IPP-effect, for the simple reason that not all speakers allow them to occur in perfect-tense constructions, especially not if they take an infinitival complement. Speakers that do allow IPP, however, normally prefer the use of an infinitive.

(56) dat Jan een nieuwe auto heeft $^{\%}$schijnen/*geschenen te kopen.
that Jan a new car has seem/seemed to buy
‘that Jan has seemed to buy a new car.’

Other examples of transparent *te*-infinitivals mentioned both by Evers (1975:5) and Den Besten et al. (1988) are the somewhat formal/obsolete semi-modals *dienen* ‘to be obliged to’, *plegen* ‘to be accustomed/tend’ and *weten* ‘to be able to’, which seem to have a deontic interpretation and are probably best analyzed as °control structures. It is, however, hard to find support for this analysis given that the infinitival clauses cannot be pronominalized without the loss of the modal interpretation of the matrix verbs. The transparent nature of the *te*-infinitivals in (57) is clear from the fact that clause splitting and the IPP-effect are obligatory in these examples.

(57) a. dat Jan <*dat boek*> dient <**dat boek*> *te lezen*.
that Jan that book is.obliged to read
'that Jan has to read that book,'
a′. dat Jan dat boek heeft dienen/*gediend te lezen.
that Jan that book has be.obliged/been.obliged to read
'that Jan has had to read that book.'
b. dat Marie <*dat boek*> weet <**dat boek*> *te bemachtigen*.
that Marie that book knows to obtain
'that Marie is able (knows how) to obtain that book.'
b′. dat Marie dat boek heeft weten/*geweten te bemachtigen.
that Marie that book has know/known to obtain
'that Marie has been able to obtain that book.'

III. Semi-transparent te-*infinitivals*

Evers (1975) suggested that *te*-infinitivals functioning as theme arguments and surfacing as direct objects can (in our terms) be either opaque or transparent, but he also noted that some verbs, his class IIIb, are not very particular in the sense that they can select either type. We illustrate this in (58) with perfect-tense constructions containing the matrix verb *proberen* 'to try'. The fact that the verb appears as a participle in (58a) but as an infinitive in (58b) suggests that we are dealing with, respectively, an opaque and a transparent infinitival clause in these examples. This is also supported by the fact that the infinitival clause is split in (58b), but not in (58a). Following the standard hypothesis of the time that Dutch has an underlying OV-order, Evers accounted for this by assuming that the direct object clause is base-generated to the left of the matrix verb, and that (58a) and (58b) are derived by, respectively, EXTRAPOSITION of the entire clause and VERB RAISING of the infinitival verb *te lezen* 'to read'.

(58) a. dat Jan heeft t_i geprobeerd *[PRO dat boek te lezen]*$_i$. [opaque]
that Jan has tried that book to read
'that Jan has tried to read that book.'
b. dat Jan [*PRO dat boek* $t_{\text{te lezen}}$] heeft proberen *te lezen*. [transparent]
that Jan that book has try to read
'that Jan has tried to read that book.'

The examples in (59) suggest, however, that it is not sufficient to assume that certain verbs optionally trigger extraposition or verb raising. The unacceptability of example (59a) first shows that extraposition indeed requires that the matrix verb surfaces as a past participle in perfect-tense constructions; there are no extraposition constructions that involve IPP in Standard Dutch (but see Barbiers et al., 2008: Section 2.3.6.1.3, for a number of Flemish and Frisian dialects that do accept examples such as (59a)). Den Besten et al. (1988) found, however, that clause splitting is very common when the matrix verb appears as a participle, that is, clause splitting does not require IPP as is clear from the fact that it is easy to find example (59b) alongside (58b); cf. Gerritsen (1991: Map 25), Haeseryn et al. (1997:950-2), Barbiers et al. (2008), and taaladvies.net/taal/advies/vraag/674.

(59) a. *dat Jan heeft proberen *dat boek te lezen*.
that Jan has try that book to read
'that Jan has tried to read that book.'
b. dat Jan *dat boek* heeft geprobeerd *te lezen*. [semi-transparent]
that Jan that book has tried to read
'that Jan has tried to read that book.'

Note in passing that the verb *proberen* is special in that it seems equally acceptable with opaque, transparent and semi-transparent infinitival complement clauses. Many verbs are more restrictive in this respect (although there is always some variation in what speakers do or do not accept): *besluiten* 'to decide', for example, can only take opaque or semi-transparent *te*-infinitivals, as is clear from the fact illustrated in (60b′) that it is incompatible with the IPP-effect.

(60) a. dat Jan <*dat boek*> besloot <*dat boek*> *te lezen*.
that Jan that book decided to read
'that Jan has decided to read that book.'
b. dat Jan <*dat boek*> heeft <*dat boek*> besloten *te lezen*. [opaque/semi-tr.]
that Jan that book has decided to read
'that Jan decided to read that book.'
b′. *dat Jan *dat boek* heeft besloten/$^{*?}$besluiten *te lezen*. [transparent]
that Jan that book has decided/decide to read
'that Jan has decided to read that book.'

IV. Potential problems with the classification of te*-infinitivals*

The main conclusion to be drawn from Subsections I to III is that from an observational point of view we can distinguish the three types of *te*-infinitivals in (61) on the basis of whether or not clause splitting and IPP are possible.

(61) • Types of *te*-infinitivals
a. Opaque: no clause splitting and no IPP-effect
b. Transparent: clause splitting and IPP-effect
c. Semi-transparent: clause splitting and no IPP

It should be pointed out, however, that semi-transparent *te*-infinitivals differ from transparent ones in that the former do not require that *all* non-verbal constituents of the infinitival clause precede the matrix verb; cf. the contrast between the two examples in (62). This bears out that clause splitting of semi-transparent *te*-infinitivals is not the result of verb clustering in the technical sense defined in the introduction to this section, that is, the formation of an *impermeable series of verbs* in clause-final position.

(62) a. dat Marie *die jongen* <*een kus*> heeft proberen <**een kus*> *te geven*.
that Marie that boy a kiss has try to give
b. dat Marie die *jongen* <*een kus*> heeft geprobeerd <*een kus*> *te geven*.
that Marie that boy a kiss has tried to give
'that Marie has tried to give that boy a kiss.'

Constructions with semi-transparent *te*-infinitivals like (59b) and (62b) were referred to as the third construction in Den Besten et al. (1988), but have become known later as the REMNANT EXTRAPOSITION construction. Den Besten et al. (1988) derived the construction by a combination of °extraposition of the *te*-infinitival and leftward movement of one or more of its constituents. As a result, the extraposed phrase consists of merely a remnant of the original *te*-infinitival (see also Reuland 1981). If we adopt the leftward movement analysis (while leaving open the question as to whether extraposition involves rightward movement of the infinitival clause), the representations of (59b) in (62b) are as given in (63).

(63) a. dat Jan dat boek$_i$ heeft geprobeerd [PRO t_i te lezen].
b. dat Marie die jongen$_i$ een kus$_j$ heeft geprobeerd [PRO t_i t_j te geven].
b′. dat Marie die jongen$_i$ heeft geprobeerd [PRO t_i een kus te geven].

The fact that the direct object *een kus* 'a kiss' in (62b) may either precede or follow the clause-final verbs implies that the postulated leftward movement is optional. This means that it is no longer obvious that the *te*-infinitivals in examples such as (64) should be considered opaque as they can also be analyzed as semi-transparent clauses without the postulated leftward movements in (63).

(64) a. dat Jan heeft geprobeerd *dat boek te lezen*.
that Jan has tried that book to read
'that Jan has tried to read that book.'
b. dat Marie heeft geprobeerd die *jongen een kus te geven*.
that Marie has tried that boy a kiss to give
'that Marie has tried to give that boy a kiss.'

All of this might indicate that Den Besten et al. (1988) were wrong in assuming that there are opaque *te*-infinitivals, and that rather we have to assume that all *te*-infinitivals are (semi-)transparent. If so, the "opaque" cases discussed in Subsection I cannot be described by appealing to the label "clause type". Since (semi-)transparent infinitival clauses differ crucially from the opaque infinitival clauses discussed in Subsection I in that they (i) are selected as internal arguments of a verb and (ii) have the syntactic function of direct object, this may be the key to the solution. This will be one of the topics addressed in our more extensive discussion of *te*-infinitivals in Section 5.2.2.

4.5. Non-main verbs

Non-main verbs differ from main verbs: they do not denote states of affairs, but express additional (temporal, modal, aspectual, etc.) information about states of affairs denoted by main verbs. This implies that non-main verbs are normally accompanied by the projection of a main verb. Moreover, constructions with non-main verbs are characterized by the fact that the main verbs in them are never finite. The examples in (65) also show that the form of the non-finite main verb depends on the type of non-main verb: perfect and passive auxiliaries, for example, combine with past/passive participles, modal/aspectual verbs combine with bare infinitivals, and semi-aspectual verbs combine with *te*-infinitivals.

(65) • Types of non-main verbs
a. Jan heeft dat boek *gelezen*. [perfect auxiliary]
Jan has that book read
'Jan has read that book.'
b. Het boek werd me (door Peter) *toegestuurd*. [passive auxiliary]
the book was me by Peter prt.-sent
'The book was sent to me (by Peter).'
c. Jan wil/gaat dat boek *kopen*. [modal/aspectual verb]
Jan wants/goes that book buy
'Jan wants/is going to buy that book.'
d. Jan zit dat boek *te lezen*. [semi-aspectual verb]
Jan sits that book to read
'Jan is reading that book.'

Although the set of non-main verbs traditionally assumed is substantially larger than the four groups mentioned in (65), we will confine ourselves to these verbs for the purpose of illustration; Section 5.2 will provide a more exhaustive discussion.

I. Perfect and passive auxiliaries

Auxiliaries like *hebben* and *zijn* are temporal in the sense that the perfect-tense constructions they are part of situate the state of affairs prior to a specific point in time. Example (66a), for instance, situates the arrival of Marie prior to the speech time (which is the default value), as the fact that it can be modified by the time adverbial *gisteren* 'yesterday' but not by the time adverbial *morgen* 'tomorrow' makes quite clear. In addition, perfect-tense constructions may under certain conditions also have aspectual implications by expressing that the state of affairs denoted by the main verb is completed in the sense that some logically implied endpoint has been reached: example (66b), for example, can only be used when Jan has told the full story. We refer the reader to Section 1.5.1 for a more detailed discussion of the semantics of the perfect tense.

(66) a. Marie is (gisteren/*morgen) gearriveerd.
Marie is yesterday/tomorrow arrived
'Marie arrived/Marie arrived yesterday.'
b. Jan heeft me het verhaal (gisteren/*morgen) verteld.
Jan has me the story yesterday/tomorrow told
'Jan has told me the story (yesterday).'

Participles are also used in combination with the auxiliaries *worden* 'to be' and *zijn* 'to have been' in regular passive constructions like (67a&b) and the auxiliary *krijgen* 'to get' in so-called *krijgen*-passive constructions such as (67c).

(67) a. Het boek werd me (door Peter) toegestuurd.
the book was me by Peter prt.-sent
‘The book was sent to me (by Peter).’
b. Het boek is me (door Peter) toegestuurd.
the book has.been me by Peter prt.-sent
‘The book has been sent to me (by Peter).’
c. Ik kreeg het boek (door Peter) toegestuurd.
I got the book by Peter prt.-sent
‘I was sent the book (by Peter).’

Note in passing that the auxiliary verb *zijn* in (67b) is sometimes analyzed not as a passive but as a perfect auxiliary given that the passive participle *geworden* can at least marginally be added to such examples. If correct, this means that *worden* and *krijgen* would exhaust the set of passive auxiliaries, but see Section 6.2.2 for a potential problem for this conclusion.

That the auxiliaries discussed in this section are only instrumental in creating perfect tense or passive constructions immediately accounts for the fact that they cannot be used as heads of clauses (although *zijn* ‘to be’ and *worden* ‘to become’ do occur as copulas, and *hebben* ‘to have’ and *krijgen* ‘to get’ can also be used as main verbs of possession).

II. Modal/aspectual verbs

The examples in (68) show that modal and aspectual verbs like *willen* and *gaan* differ from temporal and passive auxiliaries in that they do not combine with participles but require the main verb to take the form of a bare infinitive.

(68) a. Jan wil dat boek morgen kopen.
Jan wants that book tomorrow buy
‘Jan wants to buy that book tomorrow.’
b. Jan gaat morgen dat boek kopen.
Jan goes tomorrow that book buy
‘Jan is going to buy that book tomorrow.’

The primeless examples in (69) show that modal and aspectual verbs also differ from main verbs in that they exhibit the *infinitivus-pro-participio* (IPP) effect; they do not take the form of a participle in perfect-tense constructions, but of an infinitive. The primed examples have been added to show that *willen* and *gaan* do appear as participles are used as main verbs.

(69) a. Jan heeft dat boek altijd al willen/*gewild kopen.
Jan has that book always already want/wanted buy
‘Jan has always wanted to buy that book.’
a′. Jan heeft dat boek altijd al gewild/*willen.
Jan has that book always already wanted/want
‘Jan has always wanted have that book.’

b. Jan is dat boek gaan/*gegaan kopen.
Jan has that book go/gone buy
'Jan has gone to buy that book.'
b′. Jan is naar de winkel gegaan/*gaan.
Jan is to the shop gone/go
'Jan has gone to the shop.'

If modal and aspectual verbs supplement the event expressed by the main verb with specific modal/aspectual information, we expect that these verbs cannot be used without a main verb. This is indeed borne out in the case of the aspectual verbs, but not in the case of the modal verbs: the (a)-examples in (70) show that the string *een ijsje kopen* can be pronominalized by means of *het* 'it' or *dat* 'that'; the (b)-examples show that this is not possible with aspectual verbs (although speakers do accept °left dislocation constructions like *Een ijsje kopen, dat gaan we zeker!* 'Buying ice cream we certainly will!'; we refer the reader to Section 4.6, sub II, for reasons for assuming that this does not involve pronominalization).

(70) a. Jan wil [een ijsje kopen]. a′. Jan wil het/dat.
Jan wants an ice.cream buy Jan wants it/that
'Jan wants to buy an ice cream.'
b. Jan gaat [een ijsje kopen]. b′. *Jan gaat het/dat.
Jan goes an ice.cream buy Jan goes it/that
'Jan is going to buy an ice cream.'

Of course, one might try to solve this problem with modal verbs by assuming that example (70a′) in fact contains a phonetically empty verb that corresponds to the semantically light verb *doen* 'to do' in (71a), but this would leave unexplained why this verb cannot co-occur with the aspectual verb *gaan*.

(71) a. Jan wil het/dat doen. a′. Jan wil het/dat ∅
Jan wants it/that do Jan wants it/that ∅
b. Jan gaat het/dat doen. b′. *Jan gaat het/dat ∅.
Jan goes it/that do/∅ Jan goes it/that ∅

Furthermore, this line of thinking might lead us to expect the modal verb *willen* to exhibit the IPP-effect irrespective of whether the clause contains the verb *doen* or its phonetically empty counterpart ∅. The examples in (72) show that this expectation is not borne out: the effect does not occur when *doen* is not present.

(72) a. Jan heeft het/dat willen/*gewild doen.
Jan has it/that want/wanted do
b. Jan heeft het/dat gewild /*willen ∅.
Jan has it/that wanted/want ∅

Finally, the fact illustrated in (73) that modal verbs differ from aspectual verbs like *gaan* in that they can be combined with a nominal object is problematic for the view that the former is a non-main verb.

(73) a. Jan wil een ijsje.
Jan wants an ice.cream
‘Jan want to have an ice cream.’
b. *Jan gaat een ijsje.
Jan goes an ice.cream

The examples above are intended to bring out that it is not *a priori* clear that the question as to whether or not a specific verb can be used as the only verb of a clause is cast iron proof for establishing whether or not that specific verb is a main verb. We will return to this issue in Section 4.6.

III. Semi-aspectual verbs

Semi-aspectual verbs correspond to main verbs like *zitten* ‘to sit’, *liggen* ‘to lie’, *hangen* ‘to hang’ and *staan* ‘to stand’ in (74), which refer to a certain posture or position of the subject of the clause, and certain verbs of movement like *lopen* ‘to walk’.

(74) a. Het boek staat in de kast.
the book stands in the bookcase
‘The book is in the bookcase.’
b. Het boek ligt op tafel.
the book lies on table
‘The book is lying on the table.’

In their semi-aspectual use the lexical meaning of the main verb can but need not be present; examples like those in (75) can be used comfortably when the speaker cannot observe the referent of the subject of the clause and is thus not able to tell whether this referent is actually sitting or walking at the moment of speech. The primary function of the semi-aspectual verb is to indicate that we are dealing with an ongoing event and we are thus dealing with a progressive construction comparable to the English progressive construction: see the renderings given in (75).

(75) a. Jan zit momenteel te lezen.
Jan sits at.present to read
‘Jan is reading at the moment.’
b. Els loopt momenteel over het probleem te piekeren.
Els walks at.present on that problem to worry
‘Els is worrying about that problem at the moment.’

The examples in (75) also show that semi-aspectual verbs differ from the modal and aspectual verbs in (68) in that they do not combine with bare infinitivals but with so-called *te*-infinitivals: leaving out the infinitival marker *te* leads to ungrammaticality. This is, however, not the case in the corresponding perfect-tense constructions in (76), in which the marker *te* can be dropped. The examples in (76) make it clear as well that the semi-aspectual verbs exhibit the IPP-effect; replacement of the infinitive *zitten*/*lopen* by the participle *gezeten*/*gelopen* leads to ungrammaticality

(76) a. Jan heeft de hele dag zitten (te) lezen.
Jan has the whole day sit to read
‘Jan has been reading the whole day.’
b. Els heeft de hele dag over het probleem lopen ($^{?}$te) piekeren.
Els has the whole day on the problem walk to worry
‘Els has been worrying about that problem all day.’

IV. Non-main verbs are part of a verbal complex

The previous subsections have shown that non-main verbs impose certain restrictions on the morphological form of the main verb: temporal and passive auxiliaries select participles, modal/aspectual verbs select bare infinitivals, and (finite) semi-aspectual verbs select *te*-infinitivals. What we have not shown yet is that non-main verbs and the main verb they select obligatorily form a °verbal complex, in which the main verb refers to some state of affairs and the non-main verbs function as modifiers providing supplementary information. This is clear from the fact that an embedded main verb cannot normally be the °head of an independent finite clause introduced by the complementizer *dat* ‘that’ or an infinitival clause introduced by the complementizer *om*. We illustrate this in (77) for the aspectual verb *gaan* and the semi-aspectual verb *zitten*; the number sign # is used to indicate that (77b) is possible if *zitten* is construed as a main verb and the infinitival clause is an adverbial purpose clause: “Jan sits in order to read the book”.

(77) a. *Jan gaat dat hij het boek leest.
Jan goes that he the book reads
b. $^{\#}$Jan zit om dat boek te lezen.
Jan sits COMP that book to read

Observe that this test shows again that a modal verb like *willen* ‘to want’ can be used as a main verb; see the discussion of (72) in Subsection II. We will return to the issue in Section 4.6.

(78) a. Jan wil op tijd komen.
Jan wants in time arrive
‘Jan wants to arrive there on time.’
b. Jan wil dat hij op tijd komt.
Jan want that he in time arrives
‘Jan wants that he’ll arrive there on time.’

V. Placement of the non-main verb in the clause

All examples in the subsections above have been presented as main with the non-main verb in second position. In most varieties of Dutch spoken in the Netherlands the auxiliaries cluster with the main verb in clause-final position; the arguments of the main verb must precede the non-main verb even when the main verb follows it. This clausal split is illustrated in (79) for the perfect auxiliary *hebben* ‘to have’, the modal verb *willen* ‘to want’ and the semi-aspectual verb *zitten* ‘to sit’.

(79) a. dat Jan <het boek> heeft <*het boek> gelezen.
that Jan the book has read
‘that Jan has read the book.’
b. dat Jan <het boek> wil <$^{\%}$het boek> lezen.
that Jan the book wants read
‘that Jan wants to read the book.’
c. dat Jan <het boek> zit <$^{\%}$het boek> te lezen.
that Jan the book sits to read
‘that Jan is reading the book.’

We should note, however, that certain southern varieties of Dutch (including the standard variety spoken in Belgium) do allow the object to intervene between non-main verbs and (*te*-)infinitives, hence the use of the percentage sign in (79b&c). See Barbiers (2008: Section 2.3.1) and Chapter 7 for more detailed information.

VI. Conclusion

The previous subsections have shown that auxiliaries must be accompanied by a main verb in the same clause. Furthermore, non-main verbs place restrictions on the form of the main verb they select: temporal and passive auxiliaries select participles, modal and aspectual verbs select bare infinitivals, and (finite) semi-aspectual verbs select *te*-infinitivals. Non-main verbs do not combine with clauses introduced by the complementizer *dat* or *om*, which strongly suggests that non-main verbs must form a single verbal complex with a main verb. Finally, we have seen that in the varieties of Dutch spoken in the Netherlands, clauses with non-main verbs exhibit monoclausal behavior in the sense that they trigger °verb clustering, as a result of which the projection of the main verb must be split if the non-main verb is in clause-final position.

4.6. The distinction between main and non-main verbs

Although native speakers normally have little difficulty in distinguishing main from non-main verbs, there are cases in which making a decision is not so straightforward; see the remarks on the behavior of the modal verb *willen* in Section 4.5, sub II and IV. The question now arises what the crucial differences between main and non-main verbs are. We will consider two options: (i) the question as to whether the non-main and the infinitival main verb enter a °verbal complex in the complex resulting in monoclausal behavior, and (ii) the question as to whether the verb can be considered predicational in nature. We will argue that the second option is to be preferred despite the fact that this will give rise to a somewhat different dividing line between non-main and main verbs than traditionally assumed; cf., e.g., Haeseryn et al. (1997).

I. Mono- versus biclausal behavior

Main and non-main verbs play a different semantic role in the clause. The former function semantically as *n*-place predicates and are therefore typically the (semantic and syntactic) °head of a clause; sentences that contain two main verbs are thus normally biclausal. The fact that the addition of a non-main verb to a clause such as

(80a) does not affect the number of arguments that can be expressed is normally taken as evidence that non-main verbs are not predicates. Instead, they are assumed to add, e.g., temporal, aspectual or modal information to the meaning expressed by the main verb.

(80) a. Jan leest het boek. [main verb only]
Jan reads the book
b. Jan heeft het boek gelezen. [perfect auxiliary]
Jan has the book read
c. Jan wil/gaat het boek lezen. [modal/aspectual verb]
Jan wants/goes the book read
d. Jan zit het boek te lezen. [semi-aspectual verb]
Jan sits the book to read

Let us therefore for the moment assume that non-main verbs must, but main verbs cannot combine with another main verb in a structure exhibiting monoclausal behavior, and that we can test this for infinitival constructions by assuming that mono- and biclausal structures systematically differ with respect to °verb clustering and the *infinitivus-pro-participio* (IPP) effect in the way indicated in Table 2.

Table 2: Structures exhibiting mono- and biclausal behavior

	MONOCLAUSAL	BICLAUSAL
VERB CLUSTERING	+	—
INFINITIVUS-PRO-PARTICIPIO	+	—

The examples in (81) illustrate the monoclausal properties of structures containing the semi-aspectual verb *zitten*. First, example (81a) shows that the semi-aspectual verb and the main verb *lezen* form a verb cluster, as a result of which the infinitival verb *zitten* is separated from its direct object *het boek* ‘the book’. Second, example (81b) shows that the IPP-effect is obligatory.

(81) a. dat Jan <dat boek> zit <%dat boek> te lezen. [verb clustering]
that Jan that book sits to read
‘that Jan is reading that book.’
b. Jan heeft dat boek zitten/*gezeten te lezen. [IPP]
Jan has that book sit/sat to read
‘Jan has been reading that book.’

We should note, however, that verb clustering is somewhat obscured in the varieties of Dutch spoken in Belgium since these allow permeation of the verb cluster by various elements; for example, the order in (81a) marked by a percentage sign is acceptable in some of these varieties. Further, we should note that passive constructions are exempt from the IPP-effect; we will ignore this here but return to it in Section 6.2.2.

The examples in (82) illustrate the biclausal properties of structures containing the main verb *beweren* ‘to claim’: example (82a) shows that the object *het boek* ‘the book’ of the verb *lezen* ‘to read’ can intervene between *beweren* and *lezen* ‘to read’ and (82b) shows that the IPP-effect does not arise.

(82) a. dat Jan beweert dat boek te lezen. [no verb clustering]
that Jan claims that book to read
b. Jan heeft beweerd/*beweren dat boek te lezen. [no IPP]
Jan has claimed/claim that book to read

Now consider example (83a), in which the verb *proberen* 'to try' semantically functions as a two-place predicate with an agentive subject and an infinitival direct object clause. That we are dealing with a regular direct object clause is clear from the fact illustrated in (83b) that the infinitival clause can be pronominalized or be replaced by a referential noun phrase.

(83) a. Jan probeerde (om) dat boek te lezen.
Jan tried COMP that book to read
'Jan tried to read that book.'
b. Jan probeerde het/een nieuw merk sigaretten.
Jan tried it/ a new brand [of] cigarettes
'Jan tried it/a new brand of cigarettes.'

Example (83a) also shows that the infinitival complement of *proberen* can be either an *om* + *te*-infinitival or a *te*-infinitival without the complementizer *om*. We will see shortly that these infinitival complements exhibit a somewhat different behavior, but, first, the examples in (84) show that the two types of infinitival clause may be placed after the verb *proberen* in clause-final position, and that *proberen* must occur as a past participle in the corresponding perfect-tense construction. This is fully consistent with the earlier claim that *proberen* is a main verb.

(84) a. dat Jan probeert (*om*) *dat boek te lezen*.
that Jan tries COMP that book to read
'that Jan is trying to read that book.'
b. dat Jan heeft geprobeerd/*proberen (*om*) *dat boek te lezen*.
that Jan has tried/try COMP that book to read
'that Jan has tried to read that book.'

The examples in (85) show, however, that the *te*-infinitival without *om* is special in that it is also compatible with the IPP-effect, provided that the object of the infinitival verb *lezen* precedes *proberen*: the word order in (85b) is unacceptable.

(85) a. dat Jan *dat boek* heeft proberen *te lezen*.
that Jan that book has tried to read
'that Jan has tried to read that book.'
b. *Jan heeft proberen *dat boek te lezen*.

This shows that *proberen* may also trigger monoclausal behavior, from which we may conclude that it does not always behave like a run-of-the mill main verb, but may be of a hybrid nature in the sense that it also exhibit properties of non-main verbs. The fact that *proberen* is not an isolated case and that there are more unsuspected main verbs which can enter a verbal complex and thus trigger monoclausal behavior strongly suggests that having this option is not a defining property of non-main verbs. This is confirmed by the fact that constructions with bare infinitivals always exhibit monoclausal behavior, irrespective of whether the selecting verb is a main or a non-main verb: this is illustrated in (86) for the aspectual verb *gaan* and the main verb *horen* ‘to hear’.

(86) a. dat hij *een liedje* gaat *zingen*. [verb clustering]
that he a song goes sing
‘that he’s going to sing a song’
a′. dat hij een liedje is gaan zingen. [infinitivus-pro-participio]
that he a song is gone sing
‘that he has started singing a song’
b. dat ik *hem een liedje* hoor *zingen*. [verb clustering]
that I him a song hear sing
‘that I hear him sing a song.’
b′. dat ik hem een liedje heb horen zingen. [infinitivus-pro-participio]
that I him a song have heard sing
‘that I’ve heard him sing a song.’

All of this implies that the hypothesis that main verbs differ from non-main verbs in that they cannot combine with another main verb in a structure that exhibits monoclausal behavior is refuted, and, consequently, that we have to look for other means to distinguish main from non-main verbs.

II. The predicational nature of the verb

This subsection investigates two other syntactic properties that seem related to the predicational nature of main versus the non-predicational nature of non-main verbs. The predicational nature of main verbs like *beweren* ‘to claim’ and *proberen* ‘to try’ is clear from the fact that they do not require a °projection of a main verb as their complement; the primed examples in (87), in which the italicized infinitival clauses of the primeless examples are pronominalized or replaced by a noun phrase, unambiguously show that we are dealing with two-place predicates, that is, regular transitive main verbs.

(87) a. Jan beweerde *dat boek te lezen*.
Jan claimed that book to read
a′. Jan beweerde het/de vreemdste dingen.
Jan claimed it/the weirdest things
b. Jan probeert *dat boek te lezen*.
Jan tried that book to read
b′. Jan probeerde het/een stickie.
Jan tried it/a joint

Non-main verbs like the aspectual verb *gaan* in the (a)-examples in (88), on the other hand, are clearly not predicational, as is clear from the fact that they normally do not allow pronominalization of the projection of the infinitival main verb: the verb *gaan* is not able to license the subject and the object pronoun, which clearly shows that it does not behave like a transitive verb. A potential problem is, however, that the (b)-examples show that modal verbs exhibit unexpected behavior in this respect; example (88b′) shows that pronominalization is possible (see also Section 4.5, sub II, where the same point was made).

(88) a. Jan gaat *het boek lezen*. a′. *Jan gaat het/dat.
Jan goes the book read Jan goes it/that
‘Jan is going to read the book.’
b. Jan wil *het boek lezen*. b′. Jan wil het/dat.
Jan wants the book read Jan wants it/that
‘Jan wants to read the book.’

Another potential problem is that we wrongly expect that main verbs always allow pronominalization of their infinitival complement. Consider the (b)-examples in (89) with the causative/permissive verb *laten*. Example (89b) shows that *laten* adds an argument to those selected by the embedded main verb *lezen* in (89a), from which we may safely conclude that it is a two-place predicate that selects a nominal subject and an object clause. Example (89b′) shows, however that *laten* does not allow pronominalization of the embedded infinitival clause. The (c)-examples are added to show that perception verbs such as *zien* ‘to see’ do behave as expected by allowing pronominalization of the embedded clause.

(89) a. Jan leest het boek.
Jan reads the book
b. Zij laat *Jan het boek lezen*. b′. *Zij laat het/dat.
she makes Jan the book read she makes it/that
‘She makes/lets Peter read the book.’
c. Zij zag *Jan het boek lezen*. c′. Zij zag het/dat.
she saw Jan the book read she saw it/that
‘She saw Jan read the book.’

We have seen that there are two ways to establish whether a verb that combines with an infinitival verb is propositional in nature. The easiest way is to investigate whether it is able to introduce an argument that is not licensed by the embedded main verb; if this is the case, the °matrix verb clearly has an argument structure of its own. The second way is to investigate whether the projection of the infinitival verb can be pronominalized; if so, we may conclude that the pronoun must be semantically licensed and therefore functions as an argument of the verb. Table 3 provides the results of these tests for the verbs in (88) and (89).

Table 3: A comparison of aspectual, modal and causative verbs

VERB TYPE	ADDITIONAL ARGUMENT	PRONOMINALIZATION	EXAMPLE
aspectual	—	—	(88a)
modal	—	+	(88b)
causative	+	—	(89a)
perception	+	+	(89b)

Assuming that the distinction between main and non-main verbs is really determined by the question as to whether the verb is predicational in nature, we have to conclude that of the four verb types discussed here, only the aspectual verbs can be considered non-main verbs. This implies that the dividing line between these two sets will be slightly different than normally assumed in more traditional grammars. For example, whereas modal verbs are normally considered non-main verbs, we are bound to conclude that they are main verbs; see Klooster (1984/1986).

For completeness' sake, we conclude by noting that the pronominalization test must be applied with care; not all structures containing the pronoun *dat*/*het* can be used to show that the verb under investigation is predicational in nature. There appear to be two complications. First, the examples in (90) show that secondary predicates can also be pronominalized by the pronoun *dat*; the intended interpretation of the pronoun is indicated by means of coindexing. The acceptability of the second conjunct in these examples does not show that the copular verb *zijn* is a two-place predicate; as Section 2.2 has shown, it is simply a verb taking a predicative small-clause complement.

(90) a. Jan is slim$_i$ en Marie is dat$_i$ ook.
Jan is smart and Marie is that too
b. Jan is [een goede leerling]$_i$ en Marie is dat$_i$ ook.
Jan is an apt pupil and Marie is that too

Second, the examples in (91) show that °left dislocation constructions should also be set aside. The fact illustrated in (91a) that the pronoun *dat* can be used to refer to the left-dislocated participle phrase does not show that the perfect auxiliary *hebben* is a two-place predicate. In fact, if we took example (91a) as evidence for assuming that the perfect auxiliary *hebben* is two-place predicate, we would be forced to conclude on the basis of examples like (91b&c) that it can also be a three- or even a four-place predicate, a conclusion that is clearly untenable.

(91) a. [Boeken gelezen]$_i$ dat$_i$ heeft hij niet.
books read that has he not
'He hasn't read books.'
b. [Gelezen]$_i$ dat$_i$ heeft hij dat boek niet.
read that has he that book not
'He hasn't read that book.'
c. [Gegeven]$_i$ dat$_i$ heeft hij Peter dat boek niet.
given that has he Peter that book not
'He hasn't given Peter that book.'

III. Why we discuss non-main verb constructions as subcases of complementation

We normally use the term complement as equivalent with the term °internal argument; it refers, e.g., to arguments of verbs that are assigned a °thematic role like goal or theme. Given that Section 4.6 has argued that main and non-main verbs differ in that only the former are predicational in nature, and that the latter are not able to select any arguments, we could restrict the term verbal complement such that it only refers to verbal arguments of main verbs. Nevertheless, we will adopt a somewhat looser notion of verbal complements that also includes the verbal projections in the domain of non-main verbs. The main reason for doing so is that we have seen that non-main verbs impose certain morphosyntactic selection restrictions on the main verb: perfect auxiliaries, for example, must combine with past participles, aspectual verbs only combine with bare infinitivals, and semi-aspectual verbs normally combine with *te*-infinitivals. By stating that non-main verbs select the projection of the main verb as their complement, these selection restrictions can be accounted for.

(92) a. Jan heeft dat boek *gelezen*. [perfect auxiliary]
Jan has that book read
'Jan has read that book.'
b. Jan gaat dat boek *kopen*. [modal/aspectual verb]
Jan goes that book buy
'Jan is going buy that book.'
d. Jan zit dat boek *te lezen*. [semi-aspectual verb]
Jan sits that book to read
'Jan is reading that book.'

By discussing verbal complements of main and non-main verbs in a single chapter, it will also become easier to compare the behavior of such verbal complements. That this is desirable is clear from the fact that Subsection II has shown that besides clear-cut cases of main and non-main verbs, there are also verbs that are of a more hybrid nature; we will see numerous other cases in Section 5.2.2 and 5.2.3.

IV. Conclusion

This section discussed a number of properties of main and non-main verbs. Main verbs function semantically as *n*-place predicates and are therefore typically the (semantic and syntactic) head of some clause; if the sentence contains two main verbs, they are prototypically expressed in a biclausal structure. Non-main verbs, on the other hand, are not predicates but provide additional information to the meaning expressed by the main verb. As a result, non-main verbs must combine with a main clause in a verbal complex and thus trigger monoclausal behavior; they exhibit the two properties indicated in Table 4, repeated from Subsection I.

Table 4: Structures exhibiting mono- and biclausal behavior

	MONOCLAUSAL	BICLAUSAL
VERB CLUSTERING	+	—
INFINITIVUS-PRO-PARTICIPIO	+	—

It is nevertheless not always easy to determine whether we are dealing with a main or a non-main verb, given that some verbs exhibit a somewhat hybrid behavior. Subsection II was devoted to the question as to how we can distinguish main from non-main verb. We argued that it is not sufficient to show that a verb enters into a verbal complex with an infinitival main verb and then draw the conclusion that we are dealing with a non-main verbs, given that main verbs like *proberen* 'to try' also have this property. Therefore we decided that we need to investigate the predicational nature of the verb in question: if addition of this verb results in the addition of an argument that is not licensed by the non-finite main verb, or if the projection of the non-finite main verb can be pronominalized, we are dealing with a main verb. This leads to a classification slightly different from what is normally assumed in descriptive grammars. We illustrated this for modal verbs like *willen*, which are normally classified a non-main verbs but must be considered to be main verbs according to our criterion. Section 5.2 will show that this also holds for a number of other verb types.

Chapter 5 Projection of verb phrases IIIb: Argument and complementive clauses

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5.3. **Complementive clauses** **936**

Introduction

This chapter provides an exhaustive discussion of dependent clauses functioning as °arguments or °complementives. Section 5.1 starts with finite argument clauses; we will consider in detail subject, direct object, and prepositional clauses.

(1) a. dat duidelijk is [dat Marie de nieuwe voorzitter wordt]. [subject]
that clear is that Marie the new chairman becomes
‘that it is clear that Marie will be the new Chair.’
b. dat Jan niet gemeld heeft [dat hij weg zou zijn]. [direct object]
that Jan not reported has that he away would be
‘that Jan hasn’t reported that he’d be away.’
c. dat Peter erover klaagt [dat het regent]. [prepositional object]
that Peter about.it complains that it rains
‘that Peter is complaining about that it is raining.’

Section 5.1 also includes a discussion of fragment clauses and *wh*-extraction. A typical example of fragment clauses is given in (2a), in which the *wh*-word *who* is interpreted in the same way as the embedded clause in *Ik weet niet wie Jan gisteren heeft bezocht* ‘I do not know who Jan has visited yesterday.’ *Wh*-extraction is illustrated in (2b) by means of *wh*-movement of the direct object of the °complement clause; the °trace t_i indicates the normal position of the direct object.

(2) a. Jan heeft gisteren iemand bezocht, maar ik weet niet wie.
Jan has yesterday someone visited but I know not who
‘Jan visited someone yesterday but I don’t know who.’
b. Wat$_i$ denk je [$_{\text{CLAUSE}}$ dat Marie t_i morgen zal kopen]?
what think you that Marie tomorrow will buy
‘What do you think that Marie will buy tomorrow?’

Section 5.2 discusses three types of formally different types of infinitival clauses: *Om* + *te*-infinitivals, *te*-infinitivals and bare infinitivals. Some typical examples are given in (3), which typically have an implicit (phonetically empty) subject pronoun, normally represented as PRO; an important issue will be what the conditions on the interpretation of °PRO are (°control theory).

(3) a. Jan beloofde [om PRO het boek naar Els te sturen]. [*om* + *te*-infinitival]
Jan promised COMP the book to Els to send
‘Jan promised to send the book to Els.’
b. Jan beweerde [PRO het boek naar Els te sturen]. [*te*-infinitival]
Jan claimed the book to Els to send
‘Jan claimed to send the book to Els.’
c. Jan wilde [PRO het boek naar Els sturen]. [bare infinitival]
Jan wanted the book to Els send
‘Jan wanted to send the book to Els.’

Section 5.2 also discusses °subject raising and *accusativus-cum-infinitivo* infinitivals such as (4). We will give reasons for assuming that the °nominative subject in (4a) is extracted from the infinitival clause and that the subject of the infinitival clause in

(4b) functions as the subject of the infinitival clause but is assigned °accusative case by the °matrix verb *horen* 'to hear'.

(4) a. Jan$_i$ schijnt [t_i een nieuwe auto te kopen]. [subject raising]
Jan seems a new car to buy
'Jan seems to buy a new car.'
b. Els hoorde [hen$_{acc}$ een liedje zingen]. [accusativus-cum-infinitivo]
Els heard them a song sing
'Els heard them sing a song.'

Section 5.3 concludes with a discussion of complementives, that is, clauses that function as secondary predicates; examples that are sometimes (perhaps incorrectly) analyzed as involving complementive clauses are the copular constructions in (5).

(5) a. Een feit is [dat hij te lui is].
a fact is that he too lazy is
'It's a fact is that he's too lazy.'
b. dat boek is moeilijk [(om) te lezen].
that book is hard COMP to read
'that book is hard to read.'

5.1. Finite argument clauses

Section 5.1.1 starts with a number of more general remarks concerning finite °argument clauses. Sections 5.1.2 through 5.1.4 discuss in more detail the use of finite clauses as direct objects, subjects and prepositional objects. Section 5.1.5 continues with a discussion of fragment clauses. A prototypical case of the type of fragment clauses we have in mind is provided by the so-called sluicing construction in (6b), which can be used as a reaction to example in (6a). Sluicing constructions are arguably derived by partial deletion of the phonetic contents of a finite clause, which is indicated here by means of crossing-out.

(6) a. Jan heeft gisteren iemand bezocht. [speaker A]
Jan has yesterday someone visited
'Jan visited someone yesterday.'
b. Kan je me ook zeggen wie ~~Jan gisteren bezocht heeft~~? [speaker B]
can you me also tell who Jan yesterday visited has
'Can you also tell me who (Jan visited yesterday)?'

Section 5.1.6 concludes with a brief discussion of *wh*-extraction from finite clauses, which is illustrated in (7) by means of *wh*-movement of a direct object; the *wh*-phrase *wat* in (7b) arguably originates in the same position as the direct object *dit boek* in (7a); consequently, the embedded clause in (7b) contains an interpretative gap, which we have indicated by means of the °trace t_i.

(7) a. Ik denk [$_{\text{CLAUSE}}$ dat Marie dit boek morgen zal kopen].
I think that Marie this book tomorrow will buy
b. Wat$_i$ denk je [$_{\text{CLAUSE}}$ dat Marie t_i morgen zal kopen]?
what think you that Marie tomorrow will buy
'What do you think that Marie will buy tomorrow?'

Wh-extraction is only possible from complement clauses of a limited set of verbs, and our discussion will focus especially on the properties that a °matrix verb must have in order to license *wh*-extraction. For a more general and extensive discussion of the restrictions on *wh*-movement the reader is referred to Section 11.3.1.

5.1.1. General introduction

This section provides a brief introduction to a number of more general issues concerning finite argument clauses. We begin with a brief discussion of the syntactic functions that argument clauses may have. This is followed by some remarks on their form, with special attention to the position of the finite verb and the form of their complementizer. We then investigate the anticipatory pronominal elements that can be used to introduce finite argument clauses. We conclude this introduction with a brief discussion of free relatives, which are sometimes also analyzed as argument clauses.

I. The syntactic function of finite argument clauses

Finite clauses regularly occur as arguments of verbs: they can be used as subject, direct object or as part of a prepositional object. Indirect objects are normally nominal, which seems related to the fact that they typically refer to living entities or institutions, not to propositions. The examples in (8) show that argument clauses are normally placed after the verbs in clause-final position. The reason for calling the embedded clause in (8c) a prepositional object and not a direct object is that it cannot be pronominalized by means of the pronoun *het*, but must be replaced by the pronominal PP *erover*. The properties of the three types of argument clauses in (8) will be discussed in greater detail in Sections 5.1.2 to 5.1.4.

(8) a. dat duidelijk is [dat Marie de nieuwe voorzitter wordt]. [subject]
that clear is that Marie the new chairman becomes
‘that it is clear that Marie will be the new Chair.’
b. dat Jan niet gemeld heeft [dat hij weg zou zijn]. [direct object]
that Jan not reported has that he away would be
‘that Jan hasn’t reported that he wouldn’t be there.’
c. dat Peter klaagt [dat het regent]. [prepositional object]
that Peter complains that it rains
‘that Peter is complaining that it is raining.’
c′. dat Jan erover/*het klaagt.
that Jan about.it/it complains

II. The form of finite argument clauses

Finite argument clauses normally take the form of an embedded clause, that is, a clause with the finite verb in clause-final position, as in the indirect reported speech example in (9a). Possible exceptions to this general rule are found in the direct and semi-direct reported speech examples in (9b-c), in which the apparent dependent clause appears in main clause order, that is, with the finite verb in second position. For this reason cases of direct and semi-direct speech deserve special attention and they will therefore be discussed separately in Section 5.1.2.4.

(9) a. Jan zei [dat hij Marie *ging* bezoeken]. [indirect reported speech]
Jan said that he Marie went visit
'Jan said that he was going to visit Marie.'
b. Jan zei: "Ik *ga* Marie bezoeken." [direct reported speech]
Jan said I go Marie visit
'Jan said: "I'm going to visit Marie".'
c. Jan zei hij *ging* Marie bezoeken. [semi-direct reported speech]
Jan said he went Marie visit
'Jan said he was going to visit Marie.'

Examples (10a&b) show that declarative argument clauses are obligatorily introduced by the complementizer *dat* 'that', that is, unlike English *that*, Dutch *dat* cannot be omitted. Example (10c) further shows that Dutch also differs from German in that it does not allow embedded clauses without a complementizer and with °verb-second; see Haider (1985) for a discussion of verb-second in embedded clauses in German and Barbiers et al. (2005: Section 1.3.1.8) for a number of Dutch (especially eastern) dialects that may also have this construction. Observe that example (10c) is acceptable as a case of direct reported speech, but this is, of course, not the reading intended here.

(10) • Declarative argument clauses
a. Jan zegt [dat Peter ziek is]. [with complementizer]
Jan says that Peter ill is
'Jan says that Peter is ill.'
b. *Jan zegt [Ø Peter ziek is]. [without complementizer and without V2]
Jan says that Peter ill is
'Jan says Peter is ill.'
c. *Jan zegt [Peter is ziek]. [without complementizer and with V2]
Jan says Peter is ill

Interrogative argument clauses are introduced either by the complementizer *of* 'whether' or by a *wh*-phrase. In speech (but not in written language) it is also common that the *wh*-phrase in embedded *wh*-questions is followed by a complementizer: the complementizer *of* is used in the northern, whereas the complementizer *dat* is more common in the southern varieties; some (mainly northern) speakers even use the combination *of dat*; we refer the reader to Barbiers (2005: Section 1.3.1.5) for details on the geographical distribution of these options; see also Hoekstra & Zwart (1994), Sturm (1996) and Zwart & Hoekstra (1997) on the question as to whether *of dat* should be analyzed as a compound or as two separate words.

(11) • Interrogative argument clauses
a. Jan vraagt [of Peter ziek is]. [*yes*/*no*-question]
Jan asks whether Peter ill is
'Jan asks whether Peter is ill.'
b. Jan vraagt wie (of/dat) er ziek is. [*wh*-question]
Jan asks who whether/that there ill is
'Jan asks who is ill.'

If two embedded yes/no questions are coordinated by means of the disjunction *of* ‘or’, as in (12a), the complementizer of the second clause does not occur as *of* but as *dat* in order to avoid a sequence of two (homophonous) occurrences of *of*. That this is a surface phenomenon is clear from the fact illustrated in (12b) that the second complementizer must be realized as *of* when we replace the disjunction *of* by the more formal disjunction *dan wel* ‘or’; see Haeseryn et al. (1997:547).

(12) a. Ik weet niet [of hij nog komt] of [dat/*of hij thuis blijft].
I know not whether he still comes or that/whether he home stays
‘I don’t know whether he’s still coming or whether he’ll stay at home.’
b. Ik weet niet [of hij nog komt] dan wel [of/*dat hij thuis blijft].
I know not whether he still comes or whether/that he home stays
‘I don’t know whether he’s still coming or whether he’ll stay at home.’

There is a small set of cases in which what would seem to be an argument clause is introduced by the conjunction *als* ‘if/when’; cf. Haeseryn et al. (1997:1136&1153). The primeless examples in (13) show that such *als*-clauses are especially common in constructions with a subject/object experiencer, although the primed examples show that the experiencer may also remain implicit; observe that *het* functions as an °anticipatory pronoun associated with the *als*-clause. To our knowledge *als*-clauses of this type have received little attention in the literature so far, and, in fact, it remains to be demonstrated whether they do indeed function as argument clauses in these cases; this is why Section 5.1.2.2, sub IV, investigates them in more detail.

(13) • Argument clauses introduced by *als* ‘if/when’?
a. Jan$_{\text{Experiencer}}$ waardeert het [als je hem helpt]. [subject experiencer]
Jan appreciates it if one him helps
‘Jan appreciates it if you help him.’
a′. Het wordt gewaardeerd [als je hem helpt]. [implicit experiencer]
it is appreciated if you him helps
‘It’s appreciated if you help him.’
b. Het irriteert me [als je zingt]. [object experiencer]
it annoys me when you sing
‘Your singing annoys me.’
b′. Het is irritant [als je zingt]. [implicit experiencer]
it is annoying when you sing
‘Your singing annoys me.’

It is important to observe that the distinction between declarative and interrogative embedded clauses is formal rather than semantic: the embedded clause in (14a) is called declarative despite the fact that we are clearly not dealing with an assertion, and the embedded clauses in (14b&c) are called interrogative despite the fact that we are not dealing with true questions. Notwithstanding this, we will simply accept the traditional terminology.

(14) a. Jan vermoedt [dat hij ziek is]. [declarative clause]
Jan suspects that he ill is
‘Jan suspects that he’s ill.’

b. Jan betwijfelt [of hij op tijd zal aankomen]. [*yes*/*no*-question]
Jan doubts whether he on time will arrive
‘Jan doubts whether he’ll arrive in time.’
c. Els onderzoekt [wie het boek gestolen heeft]. [*wh*-question]
Els investigates who the book stolen has
‘Els is investigating who has stolen the book.’

III. The anticipatory pronominal elements het *‘it’ and* er + P *‘P + it’*

The examples in (15) show that finite argument clauses may be introduced by an anticipatory pronominal element (given in italics), which appears to the left of the clause-final verbs.

(15) a. dat *het* duidelijk is [dat Marie de nieuwe voorzitter wordt]. [subject]
that it clear is that Marie the new chairman becomes
‘that it is clear that Marie will be the new Chair.’
b. dat Jan *het* niet gemeld heeft [dat hij weg zou gaan]. [direct object]
that Jan it not reported has that he away would go
‘that Jan didn’t report it that he’d go away.’
c. dat Peter *erover* klaagt [dat het regent]. [prepositional object]
that Peter about.it complains that it rains
‘that Peter complains about it that it rains.’

The distribution of anticipatory pronominal elements is rather complex: Sections 5.1.2 to 5.1.4 will show that in many cases it is optional, but there are also cases in which it must or cannot occur. In addition, the presence or absence of the pronominal element may affect the syntactic behavior of argument clauses: example (16b), for example, shows that object clauses only allow *wh*-extraction if there is no anticipatory pronoun; see, e.g., Bennis (1986:ch.2)

(16) a. dat Jan (het) zei [dat Peter een nieuwe auto gekocht had].
that Jan it said that Peter a new car bought had
‘that Jan said (it) that Peter had bought a new car.’
b. Wat$_i$ zei Jan (*het) [dat Peter t_i gekocht had]?
what said Jan it that Peter bought had
‘What did Jan say that Peter had bought?’

If the anticipatory pronominal element is optional, its presence may trigger a somewhat different reading: sentence (16a) without the pronoun *het* presents the proposition expressed by the embedded clause as new information; (16a) with the pronoun, on the other hand, presents the embedded proposition as old information and adds to this that Jan was the source of the information. In cases such as (17), the presence of the anticipatory pronoun may trigger a factive reading of the object clause: example (17a) simply presents the proposition expressed by the embedded clause as new information, which may or may not be true, whereas (17b) presents this proposition as familiar truthful information.

(17) a. Jan heeft me gisteren verteld [dat hij decaan wordt].
Jan has me yesterday told that he dean becomes
'Jan told me yesterday that he'll become dean of the faculty.'
b. Jan heeft het me gisteren verteld [dat hij decaan wordt].
Jan has it me yesterday told that he dean becomes
'Jan told me yesterday that he'll become dean of the faculty.'

A similar contrast can be found in the passive counterparts of the examples in (17) in (18): the impersonal passive with the °expletive *er* 'there' in (18a) presents the proposition expressed by the embedded clause as new information that may be true or false, whereas the personal passive with the anticipatory subject pronoun *het* 'it' in (18b) presents it as familiar and true; see Haeseryn et al. (1997:1138) for similar intuitions. A more detailed description of the distribution of expletive *er* 'there' and the anticipatory subject pronoun *het* 'it' will be provided in Section 5.1.3, sub III.

(18) a. Er werd me gisteren verteld [dat hij decaan wordt].
there was me yesterday told that he dean becomes
'I was told yesterday that he'll become dean of the faculty.'
b. Het werd me gisteren verteld [dat hij decaan wordt].
it was me yesterday told that he dean becomes
'I was told yesterday that he'll become dean of the faculty.'

The question as to whether a factive reading arises is, however, more complex than the examples in (17) and (18) suggest. Examples (19a&b) show that regardless of the presence or absence of the anticipatory pronoun, the truth of propositions expressed by clausal objects of typically factive verbs like *betreuren* 'to regret' will normally be presupposed by the speaker, whereas the truth of propositions expressed by clausal objects of a typically non-factive verb like *beweren* 'to claim' will normally be left open. It is only with neutral verbs like *vertellen* 'to tell', which can be used both as factive and as non-factive verbs, that the presence of the anticipatory pronoun *het* will normally trigger the factive reading.

(19) a. Jan betreurt (het) [dat Marie ontslagen is]. [factive]
Jan regrets it that Marie fired is
'Jan regrets (it) that Marie has been fired.'
b. Jan beweert (het) [dat Marie ontslagen is]. [non-factive]
Jan claims it that Marie fired is
'Jan claims (it) that Marie has been fired.'
c. Jan vertelde me [dat Marie ontslagen is]. [non-factive]
Jan told me that Marie fired is
'Jan told me that Marie has been fired.'
c′. Jan vertelde het me [dat Marie ontslagen is]. [factive]
Jan told it me that Marie fired is
'Jan told it to me that Marie has been fired.'

Because the semantic effect of the anticipatory pronoun *het* is sometimes difficult to pinpoint even with neutral verbs like *vertellen*, we will not digress on this issue and leave further investigation of it to future research.

Observe finally that the frequency of the anticipatory pronoun *het* is much higher with typically factive verbs like *betreuren* ‘to regret’ than with non-factive verbs like *beweren* ‘to claim’; neutral verbs like *vertellen* ‘to tell’ take up an intermediate position. This is shown in Table (20) by the results of a Google search (12/9/2011) on the strings [*V-t (het) dat*] and [*V-de (het) dat*].

(20) The realization of the anticipatory pronoun *het* ‘it’

	ANTICIPATORY PRONOUN PRESENT		ANTICIPATORY PRONOUN ABSENT	
FACTIVE	*betreurt het dat ...* regrets it that	1.300.000 81 %	*betreurt dat ...* regrets that	300.000 19%
	betreurde het dat ... regretted it that	112.000 72 %	*betreurde dat ...* regretted that	42.400 28 %
NON-FACTIVE	*beweert het dat ...* claims it that	120.000 9%	*beweert dat ...* claims that	1.250.000 91 %
	beweerde het dat ... claimed it that	15.600 3%	*beweerde dat ...* claimed that	548.000 97 %
NEUTRAL	*vertelt het dat ...* tells it that	360.000 22%	*vertelt dat ...* claims that	1.290.000 78 %
	vertelde het dat ... told it that	162.000 48 %	*vertelde dat ...* told that	174.000 52 %

IV. Free relatives

Haeseryn et al. (1997) assume that argument clauses may also take the form of free relative clauses. The reason for this is that we are clearly dealing with non-main clauses functioning as arguments. That we are dealing with non-main clauses is easily recognizable from the fact that the finite verb appears in clause-final position; that we are dealing with arguments is clear from the fact that free relatives may function as subject, direct object and part of a prepositional object.

(21) a. [Wie dit leest] is gek. [subject]
who this reads is crazy
‘Anyone who reads this is crazy.’
b. Jan prijst [wie hij bewondert]. [direct object]
Jan praises who he admires
‘Jan praises whoever he admires.’
c. Jan wil wachten [op wat Els te zeggen heeft]. [PO-object]
Jan wants.to wait for what Els to say has
‘Jan wants to wait for whatever Els has to say (about it).’

The question we want to raise here, however, is whether free relatives exhibit the behavior typical of argument clauses. There may be good reasons for answering this question in the negative and for assuming that free relatives are nominal in nature. The first reason is that they normally refer to entities and not to propositions. This would also account for the fact that free relatives can readily be used as indirect objects, whereas declarative and interrogative argument clauses cannot.

(22) a. Jan gaf [wie erom vroeg] een gesigneerde foto.
Jan gave who for.it asked a signed picture
'Jan gave a signed picture to anyone who asked for it.'
b. Jan gaf een gesigneerde foto aan [wie erom vroeg].
Jan gave a signed picture to who for.it asked
'Jan gave a signed picture to anyone who asked for it.'

Secondly, the examples in (23) show that free relatives may occur in the argument positions in the °middle field of the clause, which are normally not available to declarative and interrogative argument clauses.

(23) a. dat [wie dit leest] gek is. [subject]
that who this reads crazy is
'that anyone who reads this is crazy.'
b. dat Jan [wie hij bewondert] prijst. [direct object]
that Jan who he admires praises
'that Jan praises whoever he admires.'
c. dat Jan [op wat Els te zeggen heeft] wil wachten. [PO-object]
that Jan for what Els to say has wants.to wait
'that Jan wants to wait for whatever Els has to say (about it).'

Thirdly, the examples in (24) show that the use of the anticipatory elements *het* and *erop* is impossible.

(24) a. *dat het$_i$ gek is [wie dit leest]$_i$. [subject]
that it crazy is who this reads
b. *dat Jan het$_i$ prijst [wie hij bewondert]$_i$. [direct object]
that Jan it praises who he admires
c. *dat Jan er$_i$ op wacht [wat Els te zeggen heeft]$_i$. [PO-object]
that Jan there for waits what Els to say has

Fourthly, the examples in (25) show that °extraposition of the free relatives only yields an acceptable result if they function as direct objects. Not also that the prepositional object clause may only be in extraposed position if it pied-pipes the preposition, although this would normally give rise to a marked result with finite prepositional object clauses; cf. $^{??}$*dat Jan wacht op dat Els iets zegt* 'that Jan is waiting for that Els says something'.

(25) a. $^{??}$dat gek is [wie dit leest]. [subject]
that crazy is who this reads
b. dat Jan prijst [wie hij bewondert]. [direct object]
that Jan praises who he admires
c. dat Jan <*op> wacht <op> [wat Els te zeggen heeft]. [PO-object]
that Jan for waits what Els to say has

The behavior displayed in examples (22)-(24) is what we attribute to nominal but not to clausal arguments. The only fact that is perhaps not immediately expected is that free relatives functioning as direct objects may follow the clause-final verbs, but this would follow if we assume that free relatives exhibit similar extraposition behavior as the regular relative clauses with an overt antecedent (here: *iedereen* and *hetgeen*) in (26). However, this suggestion leaves unexplained why (25c) is unacceptable with the preposition *op* stranded in preverbal position.

(26) a. $^{?}$dat iedereen gek is [$_{\text{REL-CLAUSE}}$ die dit leest].
that everyone crazy is who this reads
'that everyone who reads this is mad.'
b. dat Jan iedereen prijst [$_{\text{REL-CLAUSE}}$ die hij bewondert].
that Jan everyone praises who he admires
'that Jan praises everyone whom he admires.'
c. dat Jan op hetgeen wacht [$_{\text{REL-CLAUSE}}$ dat Els te zeggen heeft].
that Jan for the.things waits that Els to say has
'that Jan is waiting for the things that Els has to say.'

We conclude from the discussion that free relatives are nominal in nature and should therefore not be included in our discussion of argument clauses. We refer to Section N3.3.2.2 for a discussion of free relatives.

5.1.2. Direct object clauses

This section investigates finite direct object clauses. Section 5.1.2.1 deals with a number of verb classes that may select such object clauses, as well as the semantic restrictions that may be imposed on them by the individual members of these classes; example (27) shows, for instance, that verbs like *zeggen* 'to say' and *vragen* 'to ask' differ in that the former selects declarative while the latter selects interrogative clauses.

(27) a. Jan zei [dat de bibliotheek gesloten was]. [declarative]
Jan said that the library closed was
'Jan said that the library was closed.'
b. Peter vroeg [of de bibliotheek open was]. [interrogative]
Peter asked whether the library open was
'Peter asked whether the library was open.'

The unmarked position of object clauses is in clause-final position, but Section 5.1.2.2 will show that they may also occur in sentence-initial position. The only option blocked in clauses with a neutral intonation pattern is that they are placed in the °middle field of the °matrix clause (the order in (28c) improves when contrastive accent is placed on the adjective *zwanger*).

(28) a. Jan heeft daarnet nog beweerd [dat Marie zwanger is].
Jan has just.now still claimed that Marie pregnant is
'Jan has claimed only just now that Marie is pregnant.'
b. [Dat Marie zwanger is] heeft Jan daarnet nog beweerd.
c. $^{*?}$Jan heeft [dat Marie zwanger is] daarnet nog beweerd.

Factive constructions, that is, constructions in which the truth of the embedded clause is presupposed by the speaker, are a systematic exception to this general rule, as shown in (29). Since factivity deserves closer attention, it will be investigated in greater detail in Section 5.1.2.3.

(29) a. Marie zal vanmiddag bekend maken [dat zij zwanger is].
Marie will this.afternoon public make that she pregnant is
'This afternoon, Marie will make public that she's pregnant.'
b. [Dat zij zwanger is] zal Marie vanmiddag bekend maken.
c. Marie zal [dat zij zwanger is] vanmiddag bekend maken.

Section 5.1.2.4 concludes the discussion of finite direct object clauses by dealing with the three types of reported speech illustrated in (30). Contrary to what is frequently claimed, there are reasons for assuming that direct and semi-direct quotes do not necessarily function as direct object clauses of the matrix verbs.

(30) a. Marie zei [dat zij zwanger is]. [indirect reported speech]
Marie said that she pregnant is
'Marie said that she's pregnant.'
b. Marie zei: "Ik ben zwanger." [direct reported speech]
Marie said I am pregnant
c. Marie zei ze was zwanger. [semi-direct reported speech (erlebte rede)]
Marie said she was pregnant

5.1.2.1. Selection restrictions on finite direct object clauses

Finite direct object clauses can be selected by a wide range of verbs. Providing an exhaustive enumeration is virtually impossible, but example (31) serves to provide a small, but representative sample of verbs that can do so.

(31) • Verb types that take a finite direct object clause
a. Verbs of communication: *aankondigen* 'to announce', *beloven* 'to promise', *bevelen* 'to command', *mailen* 'to text', *roepen* 'to call', *schrijven* 'to write', *melden* 'to report', *smeken* 'to beg', *vertellen* 'to tell', *verzoeken* 'to request', *vragen* 'to ask', *zeggen* 'to say'
b. Verbs of perception: *horen* 'to hear', *kijken* 'to look', *luisteren* 'to listen', *proeven* 'to taste', *ruiken* 'to smell', *voelen* 'to feel', *zien* 'to see'
c. Verbs of cognition: *betwijfelen* 'to doubt', *begrijpen* 'to understand', *doorhebben* 'to see through', *geloven* 'to believe', *overwegen* 'to consider', *voorzien* 'to expect', *vermoeden* 'to suspect', *verwachten* 'to expect', *vinden* 'to be of the opinion', *weten* 'to know', *zich inbeelden* 'to imagine', *zich realiseren* 'to realize', *zich afvragen* 'to wonder'
d. Verbs of investigation and discovery: *aantonen* 'to show', *nagaan* 'to examine', *onderzoeken* 'to investigate', *ontdekken* 'to discover'
e. Verbs of wishing: *hopen* 'to hope', *wensen* 'to wish', *willen* 'to want'
f. Verbs with subject experiencers: *betreuren* 'to regret', *haten* 'to hate', *verafschuwen* 'to loathe', *waarderen* 'to appreciate'

Direct object clauses also occur in sentences with verbs like *achten* and *vinden* 'to consider', where they are semantically licensed as the °SUBJECT of an adjectival or nominal °complementive. Note in passing that such object clauses are regularly introduced by the anticipatory pronoun *het* 'it'.

(32) a. Jan acht het belangrijk [dat zijn kleren netjes zijn].
Jan considers it important that his clothes neat are
‘Jan considers it important that his clothes are neat.’
a′. Jan vindt het vervelend [dat zijn schoenen vies zijn].
Jan considers it annoying that his shoes dirty are
‘Jan considers it annoying that his shoes are dirty.’
b. Jan acht het een voordeel [dat zijn project later start].
Jan considers it an advantage that his project later starts
‘Jan considers it an advantage that his project starts later.’
b′. Jan vindt het een schande [dat zijn project geen aandacht krijgt].
Jan considers it a disgrace that his project no attention gets
‘Jan considers it a disgrace that his project doesn’t get any attention.’

Finite direct object clauses normally take the form of a declarative clause introduced by the complementizer *dat* ‘that’, an interrogative clause with the complementizer *of* ‘whether’ or an interrogative clause introduced by a *wh*-phrase; examples are given in (33). The following subsections show that providing a simple and straightforward answer to the question what determines the distribution of these clause types is not easy: it appears to be determined by various factors, which all seem to have a semantic component, however.

(33) a. dat Jan hoopt [dat Marie morgen komt].
that Jan hopes that Marie tomorrow comes
‘that Jan hopes that Marie will come tomorrow.’
b. dat Peter weet [of/wanneer Marie komt].
that Peter knows whether/when Marie comes
‘that Peter knows whether/when Marie will come.’

Subsection I to VI will investigate the selection restrictions imposed by the verb types in (31) and discuss a number of factors that seem to determine these restrictions. Subsection VII concludes with a discussion of examples such as (32) which illustrate object clauses functioning as a SUBJECT of a complementive.

I. Verbs of communication

At first sight, it seems relatively straightforward to determine whether a verb of communication selects a declarative or an interrogative clause. The former are selected by verbs like *zeggen* ‘to say’ and *aankondigen* ‘to announce’, which are used in the (a)-examples in (34) to report something that was said/announced, while the latter are selected by ditransitive verbs like *vragen* ‘to ask’ and *smeken* ‘to beg’, which are used in the (b)-examples to report something that was asked/requested. In short, the choice between declarative and interrogative clauses is determined by the speech act reported by the speaker.

(34) a. Jan zei [dat Peter ziek was].
Jan said that Peter ill was
‘Jan said that Peter was ill.’
a′. Marie kondigde aan [dat Els ontslag zou nemen].
Marie announced prt. that Els resignation would take
‘Marie announced that Els would resign.’

b. Jan vroeg Marie [of Peter ziek was].
Jan asked Marie whether Peter ill was
'Jan asked Marie whether Peter was ill.'
b′. Marie smeekt Els [of ze nog wat langer wil blijven].
Marie begs Els whether she yet a.bit longer want.to stay
'Marie begged Els that she would stay a bit longer.'

Closer inspection reveals the situation to be more complex than this. The above only holds in cases of indirect reported speech; in other contexts verbs like *zeggen* and *aankondigen* may also select interrogative clauses, as is shown by the two (b)-examples in (35). The choice between the three examples depends on the speaker's knowledge state. Example (35a) is used when the speaker knows that there will be a reorganization, but does not know whether Marie has made this public. Example (35b) is normally used when the speaker does not know for certain whether or not there will be a reorganization, and (35b′) is used when he knows that there will be a reorganization but does not know when it will take place.

(35) a. Heeft Marie gezegd [dat het instituut gereorganiseerd zal worden]?
has Marie said that the institute reorganized will be
'Did Marie say that the institute will be reorganized?'
b. Heeft Marie gezegd [of het instituut gereorganiseerd zal worden]?
has Marie said whether the institute reorganized will be
'Did Marie say whether the institute will be reorganized?'
b′. Heeft Marie gezegd [wanneer het instituut gereorganiseerd zal worden]?
has Marie said when the institute reorganized will be
'Did Marie say when the institute will be reorganized?'

The examples in (36) show that the speaker has a similar choice if the sentence is negated. The choice between the three utterances again depends on the speaker's knowledge state. Example (36a) can be used to express that the speaker knows that there will be a reorganization but that Marie did not make this public or to express that the speaker expected that Marie would announce a reorganization but that this expectation was not borne out. Example (36b) will typically be used when the speaker does not know for certain whether or not there will be a reorganization, and (36b′) expresses that, while the speaker is convinced that there will be a reorganization, Marie did not give more specific information about the time when it will take place.

(36) a. Marie heeft niet gezegd [dat het instituut gereorganiseerd zal worden].
Marie has not said that the institute reorganized will be
'Marie didn't say that the institute will be reorganized.'
b. Marie heeft niet gezegd [of het instituut gereorganiseerd zal worden].
Marie has not said whether the institute reorganized will be
'Marie didn't say whether the institute will be reorganized.'
b′. Marie heeft niet gezegd [wanneer het instituut gereorganiseerd zal worden].
Marie has not said when the institute reorganized will be
'Marie didn't say when the institute will be reorganized.'

Not all verbs of communication are compatible with an interrogative argument clause if they occur in an interrogative or negative sentence. The examples in (37), for instance, show that the verb *aankondigen* ‘to announce’ in (37a′) does not easily allow it, which is probably due to the fact that it is factive in the sense discussed in Section 5.1.2.3. Observe also that there is a contrast in acceptability between *yes*/*no*- and *wh*-clauses and that the latter do occasionally occur on the internet.

(37) a. Heeft Marie aangekondigd [dat/*of Els ontslag neemt]?
has Marie prt.-announced that/whether Els resignation takes
‘Has Marie announced that/*whether Els will resign?’
a′. $^{??}$Heeft Marie aangekondigd [waarom Els ontslag neemt]?
has Marie prt.-announced why Els resignation takes
b. Marie heeft niet aangekondigd [dat/*of Els ontslag neemt].
Marie has not prt.-announced that/whether Els resignation takes
‘Marie hasn’t announced that/*whether Els will resign.’
b′. $^{??}$Marie heeft niet aangekondigd [waarom Els ontslag neemt].
Marie has not prt.-announced why Els resignation takes

For completeness’ sake, the examples in (38) show that verbs like *vragen* can sometimes also be used with declarative argument clauses, in which case we are dealing with a request/demand rather than a question. The two meanings can be distinguished easily: *vragen* with the meaning “to ask” takes a nominal object that alternates with an *aan*-PP, whereas *vragen* with the meaning “to request/demand” prefers a *van*-PP and admits a nominal object in formal/archaic contexts only.

(38) a. Jan vroeg (aan) Marie [of/*dat Peter ziek was].
Jan asked to Marie whether/that Peter ill was
‘Jan asked Marie whether/*that Peter was ill.’
b. Jan vroeg $^{?}$(van) zijn team [dat het altijd beschikbaar was].
Jan asked of his team that it always available was
‘Jan asked of his team that they would always be available.’

II. Verbs of (direct) perception

The examples in (39) show that the perception verbs *proeven* ‘to taste’, *ruiken* ‘to smell’ and *voelen* ‘to feel’ may select either a declarative or an interrogative clause. The meaning of the verbs in the primed and the primeless examples differs in that in the former case the subject of the perception verb senses involuntarily (in the sense of “without conscious control”) that the state of affairs expressed by the embedded clause holds (*Yuk, the soup has gone off!*), whereas in the primed examples the subject intentionally employs his/her senses to establish whether the state of affairs expressed by the embedded clause holds (*No, don’t worry, the soup is still fine*).

(39) a. Marie proefde/rook [dat de soep bedorven was]. [involuntary]
Marie tasted/smelled that the soup tainted was
‘Marie tasted/smelled that the soup had gone off.’
a′. Marie proefde/rook [of de soep bedorven was]. [voluntary]
Marie tasted/smelled whether the soup tainted was
‘Marie tasted/smelled whether the soup had gone off.’

b. Jan voelde [dat de was droog was]. [involuntary]
Jan felt that the laundry dry was
‘Jan felt that the laundry was dry.’
b′. Jan voelde [of de was droog was]. [voluntary]
Jan felt whether the laundry dry was
‘Jan felt whether the laundry was dry.’

It does not seem to be the case that we are dealing with two uses of one and the same verb but with real polysemy. The reason for assuming so is that in the domain of vision and hearing there are two specialized verbs for the two meanings: *zien* ‘to see’ and *horen* ‘to hear’ are used for involuntary perception, whereas *kijken* ‘to look’ and *luisteren* ‘to listen’ are used for the active involvement of vision and hearing.

(40) a. Marie zag [dat/*of de zon scheen]. [involuntary]
Marie saw that/whether the sun shone
‘Marie saw that the sun was shining.’
a′. Marie keek [of/*dat de zon scheen]. [voluntary]
Marie looked whether/that the sun shone
‘Marie looked whether the sun was shining.’
b. Jan hoorde [dat/*of de deur klapperde]. [involuntary]
Jan heard that/whether the door rattled
‘Jan heard that the door was rattling.’
b′. Jan luisterde [of/*dat de deur klapperde]. [voluntary]
Jan listened whether/that the door rattled
‘Jan listened whether the door was rattling.’

That the distinction between involuntary and voluntary perception is also relevant for the polysemous verbs *proeven, ruiken* and *voelen* is clear from the fact that imperatives, which imply voluntary action, require these verbs to take an embedded question.

(41) a. Proef/ruik even [of/*dat de soep nog eetbaar is]! [voluntary]
taste/smell PRT whether/that the soup yet edible is
‘Just taste/smell whether the soup is still edible.’
b. Voel even [of/*dat de was al droog is]! [voluntary]
feel PRT whether/that the laundry already dry is
‘Just feel whether the laundry is dry.’

The contrast between involuntary and voluntary perception seems quite sharp if the argument clause is introduced by the complementizer *of*, but more diffuse when introduced by a *wh*-phrase. The examples in (42) seem to allow both readings: example (42c), for example, does not require that Jan purposely feels how wet the washing was, but that he may accidently it that while putting the washing in the cupboard.

(42) a. Marie proefde [welke kruiden er in de soep zaten].
Marie tasted which herbs there in the soup were
'Marie tasted which herbs were in the soup.'
b. De hond rook [welke man cannabis bij zich had].
the dog smelled which man cannabis with REFL had
'The dog smelled which man was in possession of cannabis.'
c. Jan voelde [hoe nat de was nog was].
Jan felt how wet the laundry still was
'Jan felt how wet the washing still was'

That verbs of involuntary perception are compatible with embedded *wh*-questions is also shown by the acceptability of the examples in (43), which contrast sharply with the primeless examples in (40).

(43) a. Jan zag onmiddellijk [welke boeken Marie geleend had].
Jan saw immediately which books Marie borrowed had
'Jan immediately saw which books Marie had borrowed.'
b. Jan hoorde onmiddellijk [wie de kamer binnenkwam].
Jan heard immediately who the room entered
'Jan immediately heard who entered the room.'

A warning flag is needed here, however, given that interrogative argument clauses are generally possible with the verbs *zien* 'to see' and *horen* 'to hear' if we are dealing with *indirect* perception, as is illustrated in (44). This means that examples such as (43) can only be used for distinguishing verbs of voluntary and involuntary perception if we are dealing with direct perception and not with indirect perception (e.g., on the basis of empty spaces on the book shelves or the sound of foot steps).

(44) a. Jan ziet (aan haar gezicht) onmiddellijk [dat/of ze vrolijk is].
Jan saw from her face immediately that/whether she merry is
'Her face shows Jan immediately that/whether she's merry.'
b. Jan hoort (aan de misthoorns) [dat/of het mistig is].
Jan hears from the foghorns that/whether it misty is
'The blast of the foghorns tells Jan that/whether it is foggy.'

In addition, the examples in (45) show that *zien* 'to see' and *horen* 'to hear' are also fully compatible with an embedded *yes*/*no* questions if they head an interrogative or negative sentence; in this respect they behave just like non-factive verbs of communication like *zeggen* 'to say' discussed in Subsection I.

(45) a. Heb je gezien [dat/of de zon scheen]?
have you seen that/whether the sun shone
'Have you seen that/whether the sun was shining?'
a′. Ik heb niet gezien [dat/of de zon scheen].
I have not seen that/whether the sun shone
'I haven't seen that/whether the sun was shining.'

b. Heb je gehoord [dat/of de deur klapperde]?
have you heard that/whether the door rattled
‘Have you heard that/whether the door was rattling?’
b′. Ik heb niet gehoord [dat/of de deur klapperde].
I have not heard that/whether the door rattled
‘I haven’t heard that/whether the door was rattling.’

The examples in (46) show that the addition of a modal verb can have a similar effect on the selection restrictions.

(46) a. Jan kan zien [dat/of de zon schijnt].
Jan can see that/whether the sun shines
‘Jan can see that/whether the sun is shining.’
b. Jan kan horen [dat/of de deur klappert].
Jan can hear that/whether the door rattles
‘Jan can hear that/whether the door is rattling.’

We will return to verbs of involuntary and voluntary perception in Section 5.2.3.3 where we show that they differ in yet another way: the former but not the latter may occur in °AcI-constructions: *Jan zag/*keek de zon opkomen* ‘Jan saw the sun rise’.

III. Verbs of cognition

Verbs of cognition can be divided into the four groups in (47) on the basis of the question as to whether they select a declarative or an interrogative clause.

(47) a. *zich afvragen* ‘to wonder’
b. *geloven* ‘to believe’, *voorzien* ‘to anticipate’, *verwachten* ‘to expect’, *vinden* ‘to be of the opinion’, *zich inbeelden* ‘to imagine’
c. *begrijpen* ‘to understand’, *vermoeden* ‘to suspect’, *zich realiseren* ‘to realize’
d. *weten* ‘to know’, *overwegen* ‘to consider’ and *betwijfelen* ‘to doubt’

The verb *zich afvragen* ‘to wonder’ in (47a) cannot be combined with a declarative argument clause; it only occurs with interrogative clauses introduced by the complementizer *of* or some *wh*-phrase.

(48) a. Jan vraagt zich af [of/*dat Marie dat boek gelezen heeft].
Jan wonders REFL prt. whether/that Marie that book read has
‘Jan wonders whether Marie has read that book.’
b. Jan vraagt zich af [welk boek Marie gelezen heeft].
Jan wonders REFL prt. which book Marie read has
‘Jan wonders which book Marie has read.’

The verbs in (47b) take a declarative object clause introduced by the complementizer *dat* ‘that’: interrogative clauses give rise to degraded results. This is illustrated in (50) for the verb *geloven* ‘to believe’.

(49) a. Jan gelooft [dat/*of Marie morgen niet kan komen].
Jan believes that/whether Marie tomorrow not can come
‘Jan believes that/*whether Marie can’t come tomorrow.’
b. *Jan gelooft [wanneer Marie niet kan komen].
Jan believes when Marie not can come
c. *Jan gelooft [waarom Marie morgen niet kan komen].
Jan believes why Marie tomorrow not can come

The situation is less clear for the verbs in (47c). The examples in (50) show that the verb *begrijpen* ‘to understand’ cannot take an interrogative verb introduced by the complementizer *of* ‘whether’, but that interrogative clauses introduced by a *wh*-phrase yield a much better result—although example (50b) is definitely marked without the °anticipatory pronoun *het* ‘it’, example (50c) is fully acceptable. The verbs *vermoeden* ‘to suspect’ and *zich realiseren* ‘to realize’ show a similar behavior here.

(50) a. Jan begrijpt (het) [dat/*of Marie morgen niet kan komen].
Jan understands it that/whether Marie tomorrow not can come
‘Jan understands that/*whether Marie can’t come tomorrow.’
b. Jan begrijpt $^{??}$(het) [wanneer Marie niet kan komen].
Jan understands it when Marie not can come
‘Jan understands when Marie can’t come.’
c. Jan begrijpt (het) [waarom Marie morgen niet kan komen].
Jan understands it why Marie tomorrow not can come
‘Jan understands why Marie can’t come tomorrow.’

The examples in (51) show that verbs of the type *geloven* ‘to believe’ and the type *begrijpen* ‘to understand’ also behave differently if they function as the °head of an interrogative or negative sentence: whereas the former remain incompatible with interrogative argument clauses, the latter readily accept them.

(51) a. Heeft Jan geloofd [dat/*of/*wanneer Marie komt]?
has Jan believed that/whether/when Marie comes
‘Did Jan believe that Marie would come?’
a′. Jan gelooft niet [dat/*of/*wanneer Marie komt].
Jan believes not that/whether/when Marie comes
‘Jan doesn’t believe that Marie will come.’
b. Heeft Jan begrepen [dat/of/wanneer Marie komt]?
has Jan understood that/whether/when Marie comes
‘Did Jan understand that/whether/when Marie will come?’
b′. Jan begrijpt niet [dat/of/wanneer Marie komt].
Jan understands not that/whether/when Marie come
‘Jan doesn’t understand that/whether/when Marie will come.’

Observe that example (51b) with a declarative clause will normally be used when the speaker wants to check whether Jan did get the relevant information that Marie will come, whereas the use of an interrogative clause suggests that the speaker himself does not know whether/when Marie will come and would in fact like to have more information about it (which might be available to Jan). Similarly, example (51b′) with a declarative clause expresses that Jan does not grasp the established fact that Marie will come, whereas the (time of) Marie’s coming is left open when *begrijpen* takes an interrogative argument clause.

The verbs in group (47d) seem to be compatible both with declarative and interrogative argument clauses. We illustrate this in (52) for the verb *weten*. Example (52a) is used to express that Jan is cognizant of the fact that Marie is not able to come, and the examples in (52b&c) are used to express that Jan is able to provide further information about whether/when Marie will come.

(52) a. Jan weet [dat Marie niet kan komen].
Jan knows that Marie not can come
‘Jan knows that Marie isn’t able to come.’
b. Jan weet [of Marie kan komen].
Jan knows whether Marie can come
‘Jan knows whether Marie is able to come.’
c. Jan weet [wanneer Marie niet kan komen].
Jan knows when Marie not can come
‘Jan knows when Marie isn’t able to come.’

IV. Verbs of investigation and discovery

Verbs of investigation and discovery may differ with respect to whether they select a declarative or an interrogative clause. The former seems to be the case for, e.g., *aantonen* ‘to show’, *bewijzen* ‘to prove’, *suggereren* ‘to suggest’ and *ontdekken* ‘to discover’, and the latter for *nagaan* ‘to examine’ and *onderzoeken* ‘to investigate’. The former verbs are used especially if the proposition expressed by the argument clause refers to an established fact and the latter when the argument clause refers to some open question. The selection restrictions remain unchanged in interrogative and negative sentences.

(53) a. Jan heeft aangetoond [dat/*of vette vis gezond is].
Jan has prt.-shown that/whether oily fish healthy is
‘Jan has proved that oily fish is healthy.’
a′. Jan ontdekte [dat/*of zijn fiets kapot was].
Jan discovered that/whether his bike broken was
‘Jan found out that his bike was broken.’
b. Jan onderzocht [of/*dat vette vis gezond is].
Jan investigated whether/that oily fish healthy is
‘Jan investigated whether oily fish is healthy.’
b′. Jan ging na [of/*dat zijn fiets kapot was].
Jan checked prt. whether/that his bike broken was
‘Jan checked whether his bike was broken.’

Question formation, negation as well as the addition of a modal verb may change the selection restriction of verbs like *aantonen*/*bewijzen* ‘to prove’, as is clear from the fact that the examples in (54) seem acceptable with embedded *yes*/*no*-questions; in this respect such verbs behave just like the verbs of involuntary perception.

(54) a. Heeft Jan aangetoond [dat/$^{?}$of vette vis gezond is]?
has Jan prt.-shown that/whether oily fish healthy is
‘Has Jan proved that oily fish is healthy?’
b. Jan heeft niet aangetoond [dat/of vette vis gezond is].
Jan has not prt.-shown that/whether oily fish healthy is
‘Jan hasn’t proved oily fish is healthy.’
c. Jan kan aantonen [dat/of vette vis gezond is].
Jan can prt.-show that/whether oily fish healthy is
‘Jan can prove that/whether oily fish is healthy.’

V. Verbs of wishing

Verbs of wishing like *hopen* ‘to hope’, *wensen* ‘to wish’, and *willen* ‘to want’ are only compatible with declarative argument clauses, irrespective of whether the sentence they head is declarative, interrogative or negative. This is illustrated in (55) for the verb *hopen*.

(55) a. Jan hoopt [dat/*of Marie morgen komt]
Jan hopes that/whether Marie tomorrow comes
‘Jan hopes that Marie will come tomorrow.’
b. Hoopt Jan [dat/*of Marie morgen komt]?
hopes Jan that/whether Marie tomorrow comes
‘Does Jan hope that Marie will come tomorrow?’
c. Jan hoopt niet [dat/*of Marie morgen komt].
Jan hopes not that/whether Marie tomorrow comes
‘Jan doesn’t hope that Marie will come tomorrow.’

VI. Subject experiencer verbs

The primeless examples in (56) show that verbs like *betreuren* ‘to regret’ or *waarderen* ‘to appreciate’, which select an experiencer subject, take declarative object clauses; interrogative clauses are excluded. The primed examples show that interrogative object clauses are also excluded when the °matrix clause is interrogative or negative. For the benefit of the discussion that will follow in Section 5.1.2.3 it should be pointed out that the object clauses in the primeless examples are introduced by the anticipatory pronoun *het* ‘it’.

(56) a. Jan betreurde het [dat/*of hij niet kon komen].
Jan regretted it that/whether he not could come
‘Jan regretted it that he couldn’t come.’
a′. Heeft Jan het betreurd [dat/*of hij niet kon komen]?
has Jan it regretted that/whether he not could come
‘Did Jan regret it that he couldn’t come?’
a″. Jan betreurde het niet [dat/*of hij niet kon komen].
Jan regretted it not that/whether he not could come
‘Jan didn’t regret it that he couldn’t come.’

b. Peter waardeerde het [dat/*of Els hem wou helpen].
Peter appreciated it that/whether Els him wanted help
‘Peter appreciated it that Els was willing to help him.’
b′. Heeft Peter het gewaardeerd [dat/*of Els hem wou helpen]?
has Peter it appreciated that/whether Els him wanted help
‘Did Peter appreciate it that Els was willing to help him?’
b″. Peter waardeerde het niet [dat/*of Els hem wou helpen].
Peter appreciated it not that/whether Els him wanted help
‘Peter didn’t appreciate it that Els was willing to help him.’

Haeseryn et al. (1997:1155) have claimed that subject experiencer verbs like *betreuren* may also take an object clause introduced by the conditional complementizer *als* ‘if’; some potential cases are given in (57). Section 5.1.2.2 will show, however, that there are reasons to reject this claim.

(57) a. Jan zou het betreuren [als hij niet kan komen].
Jan would it regret if he not can come
‘Jan would regret it if he couldn’t come.’
b. Jan waardeert het zeer [als Els hem wil helpen].
Jan appreciates it a.lot if Els him want help
‘Jan really appreciates it if Els is willing to help him.’

VII. Finite object clauses that function as the SUBJECT *of a complementive*

Finite object clauses occur not only as internal arguments of verbs, but also as SUBJECTs of °complementives, that is, in *vinden*- and resultative constructions. The examples in (58) show that clause-final object clauses in *vinden*-constructions are normally introduced by the anticipatory pronoun *het*; omission of the pronoun results in a degraded result. It should be noted, however, that the pronoun is optional if the complementive is topicalized, and even excluded if the object clause is topicalized; see Section 5.1.2.2 for a discussion of topicalization of object clauses and Section 5.1.3 for a discussion of similar behavior of subject clauses.

(58) • *Vinden*-construction
a. Jan vindt *(het) leuk [dat Marie morgen komt].
Jan considers it nice that Marie tomorrow comes
‘Jan considers it nice that Marie will come tomorrow.’
a′. Leuk vindt Jan (het) [dat Marie morgen komt].
a″. [Dat Marie morgen komt] vindt Jan (*het) leuk].
b. Peter vond *(het) interessant [dat de bal zonk].
Peter considered it interesting that the ball sank
‘Peter considered it interesting that the ball sank.’
b′. Interessant vond Jan (het) [dat de bal zonk].
b″. [Dat de bal zonk] vond Jan (*het) interessant.

The primeless examples in (59) show that, in contrast to what we found in the *vinden*-construction, the anticipatory pronoun in resultative constructions can normally readily be omitted. The primed examples show that the *vinden*- and resultative construction behave in a similar fashion when the complementive or the object clause is topicalized.

(59) • Resultative construction
a. Marie maakte (het) bekend [dat er een reorganisatie komt].
Marie made it known that there a reorganization comes
'Marie made it known that there will be reorganization.'
a′. Bekend maakte Marie (het) [dat er een reorganisatie komt].
a″. [Dat er een reorganisatie komt] maakte Marie (*het) bekend.
b. Jan hield (het) verborgen [dat hij ontslagen zou worden].
Jan kept it hidden that he fired would become
'Jan kept it a secret that he would be fired.'
b′. Verborgen hield Jan (het) [dat hij ontslagen zou worden].
b″. [Dat hij ontslagen zou worden] hield Jan (*het) verborgen.

VIII. Conclusion

The previous subsections have shown that the choice between declarative and interrogative object clauses is not simply a matter of lexical selection by the matrix verb. Specifically, it has been shown that question formation and negation may license interrogative object clauses with a subset of the matrix verbs taking declarative object clauses in positive declarative clauses.

5.1.2.2. The placement of finite object clauses

This section discusses the placement of finite object clauses. The most common position for such clauses is after the clause-final verbs but they can also occur in sentence-initial position (observe that we do not use the notion *clause-initial* here for the simple reason that the initial position of embedded clauses cannot be occupied by non-*wh*-phrases). Normally, finite object clauses (with the possible exception of factive clauses discussed in Section 5.1.2.3) do not occur in the °middle field of the clause. Subsections I to III below discuss these three options in more detail.

(60) a. Jan heeft (het) gisteren gezegd [dat Marie ziek is]. [clause-final]
Jan has it yesterday said that Marie ill is
'Jan said yesterday that Marie is ill.'
b. *Jan heeft gisteren [dat Marie ziek is] gezegd. [clause-internal]
Jan has yesterday that Marie ill is said
c. [Dat Marie ziek is] (dat) heeft Jan gisteren gezegd. [sentence-initial]
that Marie ill is that has Jan yesterday said
'That Marie is ill Jan said yesterday.'

The examples in (60a&c) also show that object clauses in clause-final and sentence-initial position differ in that the former can be preceded by the anticipatory object pronoun *het*, whereas the latter can be followed by the resumptive demonstrative pronoun *dat* 'that'. We take this as a hallmark of argument clauses, and will use it as a test to determine whether or not we are dealing with object clauses. Subsection IV will show that according to this test conditional clauses introduced by *als*, which are analyzed as object clauses in Haeseryn et al. (1997:1155), are in fact adverbial °adjuncts.

I. Extraposed position

Finite direct object clauses differ from nominal direct objects in that they must follow the verbs in clause-final position in neutral contexts. This is illustrated in (61): whereas the primeless examples show that nominal direct objects must precede the main verb in clause-final position, the primed examples show that direct object clauses can follow it.

(61) a. Jan heeft Marie <zijn belevenissen> verteld <*zijn belevenissen>.
Jan has Marie his adventures told
‘Jan has told Marie his adventures.’
a′. Jan heeft Marie verteld [dat hij beroofd was].
Jan has Marie told that he robbed was
‘Jan has told Marie that he was robbed.’
b. Els zal <de gebeurtenis> onderzoeken <*de gebeurtenis>.
Els will the event investigate
‘Els will investigate the event.’
b′. Els zal onderzoeken [of Jan beroofd is].
Els will investigate whether Jan robbed is
‘Els will investigate whether Jan has been robbed.’

In fact, it seems that object clauses normally follow all non-clausal constituents of their clause including those placed after the verbs in clause-final position. This is illustrated in (62) for, respectively, a prepositional indirect object and a temporal adverbial phrase. The unacceptable orders improve when the object clause is followed by an intonation break, in which case the PP/adverbial phrase would express an afterthought.

(62) a. Jan heeft verteld <aan Marie> [dat hij beroofd was] <*aan Marie>.
Jan has told to Marie that he robbed was
‘Jan has told Marie that he was robbed.’
b. Els zal onderzoeken <morgen> [of Jan beroofd is] <*morgen>.
Els will investigate tomorrow whether Jan robbed is
‘Els will investigate tomorrow whether Jan has been robbed.’

Direct object clauses are, however, followed by extraposed adverbial clauses. This is illustrated in the primeless examples in (63) for adverbial clauses expressing time and reason, respectively; the number signs preceding the primed examples indicate that these examples are only acceptable if the adverbial clause is interpreted parenthetically, in which case it must be preceded and followed by an intonation break. Note in passing that example (63a) is actually ambiguous; the adverbial clauses may in principle also be construed as part of the object clause, in which case it does not refer to the time at which John told that he was robbed, but to the time at which the robbery took place.

(63) a. Jan heeft verteld [dat hij beroofd was] [direct nadat hij thuis kwam].
Jan has told that he robbed was] right after he home came
‘Jan has said that he was robbed immediately after he came home.’
a′. $^{\#}$Jan heeft verteld [direct nadat hij thuis kwam] [dat hij beroofd was].
b. Els zal onderzoeken [of Jan beroofd is] [omdat zij het niet gelooft].
Els will investigate whether Jan robbed is because she it not believes
‘Els will investigate whether Jan has been robbed since she doesn’t believe it.’
b′. $^{\#}$Els zal onderzoeken [omdat zij het niet gelooft] [of Jan beroofd is].

Direct object clauses can also be followed by elements that are not part of the sentence, like the epithet in (64a) or the afterthought in (64b). Such elements are normally preceded by an intonation break.

(64) a. Jan heeft Marie verteld [dat hij beroofd was], de leugenaar.
Jan has Marie told that he robbed was the liar
‘Jan has told Marie that he was robbed, the liar.’
b. Els zal onderzoeken [of Jan beroofd is], (en) terecht.
Els will investigate whether Jan robbed is and with.good.reason
‘Els will investigate whether Jan has been robbed, and rightly so.’

Finite object clauses in extraposed position can be introduced by the anticipatory pronoun *het* ‘it’, which we have indicated here by means of subscripts; see also 5.1.1, sub III.

(65) a. Jan zal het$_i$ Marie morgen vertellen [dat hij beroofd was]$_i$.
Jan will it Marie tomorrow tell that he robbed was
‘Jan will tell Marie tomorrow that he was robbed.’
b. Els zal het$_i$ morgen onderzoeken [of Jan beroofd is]$_i$.
Els will it tomorrow investigate whether Jan robbed is
‘Els will investigate tomorrow whether Jan has been robbed.’

II. Middle field

The examples in (66) show that as a general rule direct object clauses do not precede their matrix verb in clause-final position.

(66) a. Jan heeft gisteren beweerd [dat Els gaat emigreren].
Jan has yesterday claimed that Els goes emigrate
‘Jan claimed yesterday that Els is going to emigrate.’
a′. *Jan heeft [dat Els gaat emigreren] gisteren beweerd.
b. Marie zal grondig onderzoeken [of het waar is].
Marie will thoroughly investigate whether it true is
‘Marie will investigate thoroughly whether it is true.’
b′. *Marie zal [of het waar is] grondig onderzoeken.

There are, however, a number of potential counterexamples to this general rule. First, the examples in (67) show that free relative clauses can generally either precede of follow the verbs in clause-final position. We have seen in Section 5.1.1, sub IV, that this is one of a large number of reasons for assuming that free relatives should not be considered argument clauses but noun phrases. Thus, the surprising thing is that example (67a) is acceptable, but it can be accounted for by assuming that free relatives can be in extraposed position just like relative clauses with an overt antecedent: *dat Jan de man prijst [die hij bewondert]* 'that Jan praises the man who he admires'.

(67) a. dat Jan prijst [wie hij bewondert].
that Jan praises who he admires
'that Jan praises whoever he admires.'
b. dat Jan [wie hij bewondert] prijst.

Secondly, we find similar ordering alternations with so-called factive verbs like *onthullen* 'to reveal' and *betreuren* 'to regret'. Although some speakers may judge the primed examples as marked compared to the primeless examples, they seem well-formed and are certainly much better than the primed examples in (66). Barbiers (2000) suggests that the markedness of the primed examples is not related to grammaticality issues but due to the fact that center-embedding of longer constituents normally gives rise to processing difficulties.

(68) a. Jan heeft gisteren onthuld [dat Els gaat emigreren].
Jan has yesterday revealed that Els goes emigrate
'Jan revealed yesterday that Els is going to emigrate.'
a′. Jan heeft [dat Els gaat emigreren] gisteren onthuld.
b. Jan heeft nooit betreurd [dat hij taalkundige is geworden]
Jan has never regretted that he linguist has become
'Jan has never regretted that he has become a linguist.'
b′. Jan heeft [dat hij taalkundige is geworden] nooit betreurd.

The main difference between the (a)-examples in (66) and (68) is related to the truth of the proposition expressed by the embedded clause; cf. Kiparsky & Kiparsky (1970). Consider the examples in (69). Sentence (69a) shows that the proposition expressed by the clausal complement of *beweren* 'to claim' in (66a) can be denied by the speaker without any problem; the speaker does not commit himself to the truth of the proposition, but instead attributes the responsibility for its truth to Jan. Things are different when the speaker uses a factive verb like *onthullen* 'to reveal'; by using this verb the speaker presupposes that the proposition "Els is going to emigrate" is true. This is clear from the fact that the denial in the second conjunct in (69b) is surprising, to say the least.

(69) a. Jan heeft beweerd [dat Els gaat emigreren], maar dat is niet waar.
Jan has claimed that Els goes emigrate but that is not true
'Jan has said that Els is going to emigrate, but that isn't true.'
b. $Jan heeft onthuld [dat Els gaat emigreren], maar dat is niet waar.
Jan has revealed that Els goes emigrate but that is not true
'Jan has revealed that Els is going to emigrate, but that isn't true.'

The behavior of factive clauses deserves more attention, especially since it has been suggested that they do not function as argument clauses. However, since discussing this here would lead us to far afield and away from the present topic, we will return to this in Section 5.1.2.3.

III. Sentence-initial position

The examples in (70) show that object clauses can readily occur in sentence-initial position. In accordance with the general °verb-second requirement in Dutch, the preposed clause must be immediately followed by the finite verb. Placement of object clauses in sentence-initial position is impossible if the anticipatory pronoun *het* ‘it’ is present, as will become clear by comparing the examples in (70) to those in (65).

(70) a. [Dat hij beroofd was] zal Jan (*het) Marie morgen vertellen.
that he robbed was will Jan it Marie tomorrow tell
‘That he was robbed Jan will tell Marie tomorrow.’
b. [Of Jan beroofd is] zal Els (*het) morgen onderzoeken.
whether Jan robbed is will Els it tomorrow investigate
‘Whether Jan has been robbed Els will investigate tomorrow.’

The impossibility of *het* in (70) can be accounted for in at least two ways. One way is to assume that the examples in (70) are in fact not derived by regular topicalization, but in a similar way as the °left dislocation constructions in (71); cf. Koster (1978).

(71) a. [Dat hij beroofd was], dat zal Jan (*het) Marie morgen vertellen.
that he robbed was that will Jan it Marie tomorrow tell
b. [Of Jan beroofd is], dat zal Els (*het) morgen onderzoeken.
whether Jan robbed is that will Els it tomorrow investigate

If we follow this line of thinking, the examples in (70) may involve a phonetically empty pronoun *pro* with the same function and in the same position as the resumptive demonstrative pronoun *dat* ‘that’ in (71). On this analysis, the anticipatory pronoun cannot be realized since it is replaced by the pronoun *dat*/pro, which is moved into sentence-initial position; the structures in (72) show that the use of *het* is blocked because the clause-internal object position is occupied by the °trace of the moved pronoun.

(72) a. [dat hij beroofd was]$_i$ [$_{sentence}$ dat$_i$ zal Jan t_i Marie morgen vertellen].
b. [dat hij beroofd was]$_i$ [$_{sentence}$ pro$_i$ zal Jan t_i Marie morgen vertellen].

The analysis suggested above is contested in Klein (1979), who points out that the examples in (70) and (71) exhibit different intonation patterns: whereas the examples in (71) involve an intonation break between the clause and the pronoun *dat*, indicated here by means of a comma, the clauses in (70) are not likely to be followed by such an intonation break. If one wants to conclude from this that the examples in (70) must be derived by topicalization of the finite clause, we may account for the impossibility of the pronoun *het* by assuming that the clause must be moved via the regular object position in the middle field of the clause; under this proposal the pronoun *het* cannot be realized because the regular object position would be filled by a trace of the moved clause. An analysis like this raises the question as to why finite clauses cannot surface in the regular object position; see the discussion in Subsection II. One option would be to assume that there is a surface condition that prohibits that argument positions are filled by non-nominal categories; see Stowell (1983), Hoekstra (1984a), and Den Dikken and Næss (1993) for proposals to this effect. We will see in Section 5.1.3 that the same issue arises with finite subject clauses.

IV. Apparent object clauses

Haeseryn et al. (1997:1155) claim that subject experiencer verbs like *betreuren* ‘to regret’ and *waarderen* ‘to appreciate’ may take an object clause introduced by the conditional complementizer *als* ‘if’; cf. the primeless examples in (73). As the claim is simply postulated without any motivation, we can only guess why it is proposed; one obvious argument in favor of this claim is that we can replace the *als*-clauses by noun phrases that clearly function as direct objects; cf. the primed examples in (73).

(73) a. Jan zou het betreuren [als zij niet kan komen].
Jan would it regret if she not can come
‘Jan would regret it if she couldn’t come.’
a′. Jan zou haar afwezigheid betreuren.
Jan would her non-attendance regret
‘Jan would regret her absence.’
b. Jan waardeert het zeer [als zij hem wil helpen].
Jan appreciates it a.lot if she him want help
‘Jan really appreciates it if she’s willing to help him.’
b′. Jan zou haar hulp zeer waarderen.
Jan would her help a.lot appreciate
‘Jan would really appreciate her help a lot.’

There are, however, also arguments that militate against the claim that we are dealing with object clauses in (73a&b). These involve the distribution of the anticipatory pronoun *het* ‘it’ and the resumptive pronoun *dat* ‘that’, which are optionally used to refer to (logical) object clauses in, respectively, extraposed and sentence-initial position; see the discussion in Subsections I to III. The examples in this subsection reveal that the clauses in (73a&b) display a different behavior here. The examples in (74) indicate first of all that the anticipatory object pronoun *het* is obligatory, and not optional, if the verbs *betreuren* and *waarderen* are followed by an *als*-clause.

(74) a. Jan betreurde (het) [dat hij niet kon komen].
Jan regretted it that he not could come
‘Jan regretted it that he couldn’t come.’
a′. Jan zou *(het) betreuren [als hij niet kon komen].
Jan would it regret if he not could come
‘Jan would regret it if he couldn’t come.’
b. Jan waardeerde (het) [dat Els hem wou helpen].
Jan appreciated it that Els him wanted help
‘Jan appreciated it that Els was willing to help him.’
b′. Jan zou *(het) waarderen [als Els hem wil helpen].
Jan would it appreciate if Els him want help
‘Jan would appreciate it if Els is willing to help him.’

The examples in (75) provide further support: the anticipatory pronoun *het* can be replaced by the resumptive pronoun *dat* in sentence-initial position with °left-dislocated *dat*-clauses. The primed examples, on the other hand, show that resumptive *dat* is excluded with left-dislocated conditional *als*-clauses.

(75) a. [Dat hij niet kon komen], dat betreurde Jan zeer.
that he not could come that regretted Jan a.lot
‘That he couldn’t come, Jan regretted very much.’
a′. *[Als hij niet kan komen], dat zou Jan zeer betreuren.
if he not can come that would Jan a.lot regret
b. [Dat Els hem wou helpen], dat waardeerde Peter zeer.
that Els him wanted help that appreciated Peter a.lot
‘That Els was willing to help him, Peter appreciated very much.’
b′. *[Als Els hem wil helpen], dat zou Peter zeer waarderen.
if Els him want help that would Peter a.lot appreciate

The primeless examples in (76) further show that resumptive *dat* is normally not used when the *dat*-clause is not followed by an intonation break. The primed examples, on the other hand, show that such constructions without *dat* do not arise with *als*-clauses either.

(76) a. [Dat hij niet kon komen] betreurde Jan zeer.
that he not could come regretted Jan a.lot
‘That he couldn’t come, Jan regretted very much.’
a′. *[Als hij niet kan komen] zou Jan zeer betreuren.
if he not can come would Jan a.lot regret
b. [Dat Els hem wou helpen] waardeerde Peter zeer.
that Els him wanted help appreciated Peter a.lot
‘That Els was willing to help him, Peter greatly appreciated.’
b′. *[Als Els hem wil helpen] zou Peter zeer waarderen.
if Els him want help would Peter a.lot appreciate

Adding an object pronoun like *dat* or *het* to the primeless examples in (76) would make these examples ungrammatical, which may be due to the fact that the object position is already occupied by a °trace; cf. Subsection III. Adding an object pronoun to the primeless examples in (76), on the other hand, makes these examples fully acceptable.

(77) a. *[Dat hij niet kon komen] betreurde Jan het/dat zeer.
that he not could come regretted Jan it/that a.lot
a′. [Als hij niet kan komen] zou Jan het/dat zeer betreuren.
if he not can come would Jan it/that a.lot regret
‘If he couldn’t come, Jan would regret it/that very much.’
b. *[Dat Els hem wou helpen] waardeerde Peter het/dat zeer.
that Els him wanted help appreciated Peter it/that a.lot
b′. [Als Els hem wil helpen] zou Peter het/dat zeer waarderen.
if Els him want help would Peter it/that a.lot appreciate
‘If Els is willing to help him, Peter would greatly appreciate it/that.’

The primed examples in (77) strongly suggest that conditional *als*-clauses and object pronouns have different syntactic functions. This is also supported by the fact that *als*-clauses in °left-dislocation constructions can be associated with the resumptive adverbial element *dan* ‘then’, which also surfaces in regular conditional constructions: cf. *Als het regent, dan kom ik niet* ‘If it rains, (then) I won’t come’. Now note that the object pronoun *het*/*dat* must also be expressed when resumptive *dan* is present.

(78) a. [Als hij niet kan komen], dan zou Jan *(het/dat) zeer betreuren.
if he not can come then would Jan it/that a.lot regret
‘If he can’t come, then Jan would regret it/that very much.’
b. [Als Els hem wil helpen], dan zou Peter *(het/dat) zeer waarderen.
if Els him want help then would Peter it/that a.lot appreciate
‘If Els is willing to help him, then Peter would greatly appreciate it.’

The fact that an object pronoun must co-occur with resumptive *dan* conclusively shows that object pronouns and conditional *als*-clauses have different (logical) syntactic functions: object versus adverbial °adjunct. Consequently, object pronouns cannot function as anticipatory or resumptive pronouns associated with such *als*-clauses. It goes without saying that this also shows that the fact that the conditional *als*-clauses in the primeless examples in (73) can apparently be replaced by the nominal direct objects in the primed examples in (73) is not sufficient ground for concluding that conditional *als*-clauses are object clauses.

The conclusion that *dat*- and *als*-clauses have different syntactic functions can also be supported by means of the coordination facts in (79). While (79a&b) show that two *dat*- and two *als*-clauses can easily be coordinated, (79c) shows that this is impossible for a *dat*- and an *als*-clause. The claim that the two clause types have different syntactic functions straightforwardly derives this.

(79) a. Jan waardeert het [[dat Marie komt] en [dat Els opbelt]].
Jan appreciates it that Marie comes and that Els prt.-calls
‘Jan appreciates it that Marie will come and that Els will ring.’
b. Jan waardeert het [[als Marie komt] en [als Els opbelt]].
Jan appreciates it if Marie comes and if Els prt.-calls
‘Jan appreciates it if Marie will come and if Els will ring.’
c. *Jan waardeert het [[als Marie komt] en [dat Els opbelt]].
Jan appreciates it if Marie comes and that Els prt.-calls

For completeness’ sake, note that the left-dislocation test can also be applied to other cases in which one might be tempted to analyze a clause, or some other phrase, as a direct object. For example, the phrases introduced by *alsof*/*als* in the primeless examples in (80) resemble direct objects in that they cannot be omitted just like that, but the fact that the left-dislocation construction does not allow the resumptive *dat* but requires the manner adverb *zo* shows immediately that we are dealing with adverbial phrases.

(80) a. Jan gedraagt zich *(alsof hij gek is).
Jan behaves REFL as.if he crazy is
‘Jan behaves as if he’s crazy.’
a′. Alsof hij gek is, zo/*dat gedraagt Jan zich.
b. Jan gedraagt zich #(als een popster)
Jan behaves REFL as a pop.star
‘Jan behaves like a pop star.’
b′. Als een popster, zo/*dat gedraagt Jan zich.

5.1.2.3. Factive versus non-factive complement clause constructions

Section 5.1.2.2, sub II, has shown that finite object clauses normally do not appear in the °middle field of the °matrix clause. The relevant examples are repeated here as (81).

(81) a. Jan heeft gisteren beweerd [dat Els gaat emigreren].
Jan has yesterday claimed that Els goes emigrate
‘Jan said yesterday that Els is going to emigrate.’
a′. *Jan heeft [dat Els gaat emigreren] gisteren beweerd.
b. Peter zal grondig onderzoeken [of het waar is].
Peter will thoroughly investigate whether it true is
‘Peter will investigate thoroughly whether it is true.’
b′. *Peter zal [of het waar is] grondig onderzoeken.

There is, however, a systematic exception to this rule: the examples in (82) show that factive verbs like *onthullen* ‘to reveal’ and *betreuren* ‘to regret’ do allow the embedded clause to appear in the middle field. The acceptability of the primed examples decreases when they become longer and more complex, but this simply reflects the fact that, in general, longer constituents prefer to occur in extraposed position.

(82) a. Jan heeft gisteren onthuld [dat Els gaat emigreren].
Jan has yesterday revealed that Els goes emigrate
‘Jan revealed yesterday that Els is going to emigrate.’
a′. Jan heeft [dat Els gaat emigreren] gisteren onthuld.
b. Jan heeft nooit betreurd [dat hij taalkundige is geworden].
Jan has never regretted that he linguist has become
‘Jan has never regretted that he has become a linguist.’
b′. Jan heeft [dat hij taalkundige is geworden] nooit betreurd.

The fact that factive clauses can occur in nominal argument positions was first noticed by Kiparsky & Kiparsky (1970) and since then it has widely been assumed that factive clauses are nominal in nature. Additional support for claiming that factive clauses differ from argument clauses is that there are more systematic differences between the two. The subsections below discuss some of these differences as well as some other conspicuous properties of embedded factive clauses.

I. The truth of the embedded proposition is presupposed

The main difference between (81a) and the primeless examples in (82) is related to the truth of the proposition expressed by the embedded clause; cf. Kiparsky & Kiparsky (1970). Non-factive verbs are used to assert the truth of the argument clause with varying degrees of decisiveness: by using (83a), the speaker expresses that Jan can be held responsible for the truth of the proposition “Els is going to emigrate”, whereas this holds only to a lesser extent when he uses (83b).

(83) a. Jan heeft beweerd [dat Els gaat emigreren]. [non-factive]
Jan has claimed that Els goes emigrate
‘Jan has said that Els is going to emigrate.’
b. Jan vermoedt [dat Els gaat emigreren]. [non-factive]
Jan suspects that Els goes emigrate
‘Jan suspects that Els is going to emigrate.’

Factive verbs, on the other hand, are used if the speaker presupposes the truth of the proposition expressed by the embedded clause, and asserts something about it: by using (84a), the speaker asserts about the embedded proposition “Els is going to emigrate” that Jan revealed it and by using (84b) he asserts about the same proposition that Peter regrets it.

(84) a. Jan heeft onthuld [dat Els gaat emigreren]. [factive]
Jan has revealed that Els goes emigrate
‘Jan has revealed that Els is going to emigrate.’
b. Peter betreurt [dat Els gaat emigreren]. [factive]
Jan regrets that Els goes emigrate
‘Jan regrets that Els is going to emigrate.’

That the speaker does not commit himself to the truth of the proposition expressed by the argument clauses of the non-factive verbs *beweren* ‘to claim’ and *vermoeden* ‘to suspect’ in (83) is clear from the fact that he can without much ado deny that the proposition is true. The speaker may simply think or know that the information source is wrong, consequently, his denial of the proposition “Els is going to emigrate” in the examples in (85) leads to a semantically coherent result.

(85) a. Jan heeft beweerd [dat Els gaat emigreren], maar dat is niet waar.
Jan has claimed that Els goes emigrate but that is not true
‘Jan has claimed that Els is going to emigrate, but that isn’t true.’
b. Jan vermoedt [dat Els gaat emigreren], maar dat is niet waar.
Jan suspects that Els goes emigrate but that is not true
‘Jan suspects that Els is going to emigrate, but that isn’t true.’

Things are different in sentences such as (84) with the factive verbs *onthullen* ‘to reveal’ or *betreuren* ‘to regret’; by using these verbs the speaker expresses that he himself considers the proposition “Els is going to emigrate” to be true, and the denial of this proposition in the examples in (86) therefore leads to semantically incoherent or at least surprising results.

(86) a. $^{\$}$Jan heeft onthuld [dat Els gaat emigreren], maar dat is niet waar.
Jan has revealed that Els goes emigrate but that is not true
‘Jan has revealed that Els is going to emigrate, but that isn’t true.’
b. $^{\$}$Jan betreurt [dat Els gaat emigreren], maar dat is niet waar.
Jan regrets that Els goes emigrate but that is not true
‘Jan regrets that Els is going to emigrate, but that isn’t true.’

II. Properties of factive verbs

The question as to whether a complement clause does or does not allow a factive reading depends mainly on the meaning of the verb/predicate in the matrix clause. In (87) we provide some examples of predicates that are typically used in factive or non-factive contexts, as well as some predicates that can comfortably be used in either context; see Kiparsky & Kiparsky (1970) for a similar list for English.

(87) a. Non-factive verbs: *beweren* ‘to claim’, *concluderen* ‘to conclude’, *veronderstellen* ‘to suppose’, *denken* ‘to think’, *hopen* ‘to hope’, *vinden* ‘to consider’, *volhouden* ‘to maintain’, *zich verbeelden* ‘to imagine’
b. Factive verbs: *begrijpen* ‘to comprehend’, *betreuren* ‘to regret’, *duidelijk maken* ‘to make clear’, *negeren* ‘to ignore’, *onthullen* ‘to reveal’, *toegeven* ‘to admit’, *toejuichen* ‘to applaud’, *vergeten* ‘to forget’, *weten* ‘to know’
c. Verbs that can be factive or non-factive; *vertellen* ‘to tell’, *bekennen* ‘to admit/confess’, *erkennen* ‘to admit’, *geloven* ‘to believe’, *ontkennen* ‘to deny’, *vermoeden* ‘to suspect’, *verwachten* ‘to expect’, *voorspellen* ‘to predict’

Kiparsky & Kiparsky (1970) propose various tests that can be used to determine whether or not we are dealing with a factive verb/predicate. Some of these appeal to specific properties of English, so we will only discuss those tests that make the desired distinction for Dutch as well. We will also discuss a number of tests proposed in Barbiers (2000).

A. Paraphrase by het feit dat ... *‘the fact that ...’*

One way of making visible that the truth of the embedded proposition is presupposed is by making use of a paraphrase with the nominal object *het feit* ‘the fact’; the contrast in the examples in (88) shows that addition of the noun phrase is impossible if the embedded clause is non-factive, but normally acceptable (albeit sometimes clumsy) if it is factive.

(88) a. *Jan heeft het feit beweerd [dat Els gaat emigreren]. [non-factive]
Jan has the fact claimed that Els goes emigrate
Intended reading: ‘Jan has claimed that Els is going to emigrate.’
b. Jan heeft het feit onthuld [dat Els gaat emigreren]. [factive]
Jan has the fact revealed that Els goes emigrate
‘Jan has revealed the fact that Els is going to emigrate.’

Since the direct object in (88b) is the discontinuous phrase *het feit dat Els gaat emigreren*, it need not surprise us that Kiparsky & Kiparsky (1970) have proposed that underlyingly factive clauses are noun phrases. If true, it would immediately account for the fact that factive clauses can be placed in clause-internal position, given that the clausal complement of *feit* can also be placed immediately after the noun. Observe that the complex noun phrases may either follow or precede the adverb *waarschijnlijk* 'probably'; this will become relevant later in our discussion.

(89) a. Jan heeft waarschijnlijk [het feit [dat Els gaat emigreren]] onthuld.
Jan has probably the fact that Els goes emigrate revealed
'Jan has probably revealed (the fact) that Els is going to emigrate.'
b. Jan heeft [het feit [dat Els gaat emigreren]] waarschijnlijk onthuld.
Jan has the fact that Els goes emigrate probably revealed
'Jan has probably revealed (the fact) that Els is going to emigrate.'

B. Negation does not affect the presupposed truth of a factive clause

Negation of the examples in (83) and (84) has different consequences for the truth of the proposition expressed by the embedded clauses. Consider the negated counterparts of the (a)-examples, given in (90).

(90) a. Jan heeft niet beweerd [dat Els gaat emigreren]. [non-factive]
Jan has not claimed that Els goes emigrate
'Jan hasn't claimed that Els is going to emigrate.'
b. Jan heeft niet onthuld [dat Els gaat emigreren]. [factive]
Jan has not revealed that Els goes emigrate
'Jan hasn't revealed that Els is going to emigrate.'

The addition of negation to the non-factive construction in (90a) has the effect that the truth of the embedded proposition is no longer asserted. The presupposed truth of the embedded proposition in (90b), on the other hand, is not affected; the speaker still implies that the proposition "Els is going to emigrate" is true. Observe that the use of negation leads to an incoherent pragmatic result with the factive verb *weten* 'to know' in simple present constructions with a first person subject: by using example (91c) the speaker expresses that he has no knowledge of the truth of a proposition he presupposes to be true. This problem, of course, does not arise in (91a&b) given the speaker can readily assert that some other person/the speaker-in-the-past was not aware of the truth of this proposition.

(91) a. Jan weet niet [dat Els gaat emigreren].
Jan knows not that Els goes emigrate
'Jan doesn't know that Els is going to emigrate.'
b. Ik wist niet [dat Els gaat emigreren].
I knew not that Els goes emigrate
'I didn't know that Els is going to emigrate.'
c. $^{\$}$Ik weet niet [dat Els gaat emigreren].
I know not that Els goes emigrate
'I don't know that Els is going to emigrate.'

C. Questioning does not affect the presupposed truth of a factive clause

The formation of a *yes*/*no*-question, as in (92), reveals a similar contrast as the addition of negation: example (92a) no longer asserts the truth of the embedded proposition “Els is going to emigrate”, whereas the presupposed truth of this proposition is not affected by question formation in (92b).

(92) a. Heeft Jan beweerd [dat Els gaat emigreren]? [non-factive]
has Jan claimed that Els goes emigrate
‘Did Jan claim that Els is going to emigrate?’
b. Heeft Jan onthuld [dat Els gaat emigreren]? [factive]
has Jan revealed that Els goes emigrate
‘Did Jan reveal that Els is going to emigrate?’

Like negation, questioning leads to an incoherent pragmatic result with the factive verb *weten* ‘to know’ in simple present constructions with a first person subject: by using example (93c) the speaker is asking whether he himself has knowledge of the truth of a proposition he presupposes to be true. This problem, of course, does not arise in (93a&b) since the speaker can readily ask whether some other person is or whether the speaker-in-the-past was aware of the truth of this proposition.

(93) a. Weet Jan [dat Els gaat emigreren]?
knows Jan that Els goes emigrate
‘Does Jan know that Els is going to emigrate?’
b. Wist ik (toen) [dat Els gaat emigreren]?
knew I then that Els goes emigrate
‘Did I know then that Els is going to emigrate?’
c. $^{\$}$Weet ik [dat Els gaat emigreren]?
know I that Els goes emigrate
‘Do I know that Els is going to emigrate?’

D. Question-answer pairs

Consider the question-answer pairs in (94). The answers in the (a)-examples show that non-factive verbs can be used perfectly easily when the speaker wants to diminish his responsibility for the correctness of the answer or to attribute the responsibility for the correctness of the answer to some other person. The (b)-examples, on the other hand, show that factive verbs cannot be used in the syntactic frame “subject + V + answer” at all. See Section 5.1.5, sub II, for more discussion of question-answer pairs such as (94).

(94) Wie gaat er emigreren?
who goes there emigrate
‘Who is going to emigrate?’
a. Ik denk/vermoed Els. a′. Jan zei net Els. [non-factive]
I think/suspect Els Jan said just.now Els
‘Els, I think/suspect.’ ‘Els, Jan said just now.’
b. *Ik onthul Els. b′. *Jan onthulde net Els. [factive]
I reveal Els Jan revealed just.now Els

The question-answer pairs in (95) show that we find a similar contrast between non-factive and factive verbs in the answers to *yes/no*-questions: whereas the non-factive verbs in the (a)-answer can be combined with a polar phrase *van niet/wel* (literally: *of* + negative/affirmative marker”), the factive verbs in the (b)-answers cannot. For a more extensive discussion of such polar phrases we refer to Section 5.1.2.4, sub IIIB.

(95) Gaat Els binnenkort emigreren?
goes Els soon emigrate
'Will Els emigrate soon?'
a. Peter zegt van niet, maar ik denk van wel. [non-factive]
Peter says VAN not but I think VAN AFF
'Peter says she won't but I think she will'
b. *Jan heeft onthuld van niet/wel. [factive]
Jan has revealed VAN not/AFF
Intended reading: 'Jan has revealed that she will (not).'
b′. *Peter betreurt van niet/wel. [factive]
Peter regrets VAN not/AFF
Intended reading: 'Peter regrets that she will (not).'

E. Wh-*extraction*

Non-factive and factive clauses differ in that the latter are so-called weak °islands for *wh*-movement. While the primeless examples in (96) show that non-factive clauses allow extraction of both objects and adjuncts, the primed examples show that factive clauses allow the extraction of objects only; the °trace is used to indicate that the *wh*-phrase is interpreted as part of the embedded clause. The acceptability contrast between the two (b)-examples thus shows that factive clauses are less transparent than non-factive clauses.

(96) a. Wat$_i$ denk je [dat Peter t_i gekocht heeft]? [non-factive]
what think you that Peter bought has
'What do you think that Peter has bought?'
a′. Wat$_i$ betreur je [dat Peter t_i gekocht heeft]? [factive]
what regret you that Peter bought has
'What do you regret that Peter has bought?'
b. Wanneer$_i$ denk je [dat Peter t_i vertrokken is]? [non-factive]
when think you that Peter left has
'When do you think that Peter left?'
b′. *Wanneer$_i$ betreur je [dat Peter t_i vertrokken is]? [factive]
when regret you that Peter left has

F. Negative polarity items

That factive clauses are less transparent than non-factive clauses is also borne out by the examples in (97). The contrast between the primeless and primed examples shows that °negative polarity items like *ook maar iets* 'anything' or *een bal* (lit.: a testicle) can be licensed by negation in the matrix clause if they are part of a non-factive clause, but not if they are part of a factive clause. It should be noted, however, that the strength of the argument is somewhat weakened by the fact that this type of long-distance licensing of negative polarity items is only possible with a limited number of non-factive verbs; see Klooster (2001:316ff.).

(97) a. Ik denk niet [dat Jan ook maar iets gedaan heeft]. [non-factive]
I think not that Jan OOK MAAR anything done has
'I don't think that Jan has done anything.'
a′. *Ik onthul niet [dat Jan ook maar iets gedaan heeft]. [factive]
I reveal not that Jan OOK MAAR anything done has
b. Ik denk niet [dat Jan (ook maar) een bal gedaan heeft]. [non-factive]
I think not that Jan OOK MAAR a testicle done has
'I don't think that Jan has lifted so much as a finger.'
b′. *Ik onthul niet [dat Jan (ook maar) een bal gedaan heeft]. [factive]
I reveal not that Jan OOK MAAR a testicle done has

III. Factors affecting factivity

The discussion in Subsection II may have suggested that the verb/predicate of the matrix clause fully determines whether the embedded proposition can be construed as factive or not. However, it seems that there are a number of additional factors that may affect a verb's ability to take a factive complement; in fact, Barbiers (2000:193) claims that a factive reading can be forced upon the clausal complement of most verbs in (87a).

A. Adverbial phrases

It is frequently not immediately obvious whether we can classify a specific verb as factive or non-factive. For example, Kiparsky & Kiparsky (1970) take a verb such as *geloven* 'to believe' in (98) to be non-factive, which at first sight seems to be confirmed by the fact that placing the dependent clause in the middle field of the matrix clause gives rise to a degraded result.

(98) a. dat Marie gelooft [dat Els gaat emigreren].
that Marie believes that Els goes emigrate
'that Marie believes that Els is going to emigrate.'
b. *dat Marie [dat Els gaat emigreren] gelooft.

However, when we add an adverb like *eindelijk* 'finally' or *nooit* 'never', as in (99), placement of the dependent clause in the middle field of the matrix clause becomes much more acceptable. This indicates that it is not just the verb which determines whether the construction is factive or not, but that the wider syntactic context also plays a role.

(99) a. dat Marie eindelijk/nooit gelooft [dat Els gaat emigreren].
that Marie finally/never believes that Els goes emigrate
'that Marie finally/never believes that Els is going to emigrate.'
b. dat Marie [dat Els gaat emigreren] eindelijk/nooit gelooft.

B. The anticipatory pronoun het *'it'*

Addition of the °anticipatory pronoun *het* may also favor a factive reading of an embedded proposition; cf. Kiparsky & Kiparsky (1970: 165). This is very clear with a verb such as *verwachten* 'to expect': whereas examples such as (100a) without the anticipatory pronoun are normally used when the expectation is not borne out, examples such as (100b) with the anticipatory pronoun *het* are regularly used when the expectation is fulfilled.

(100) a. Ik had verwacht [dat Els zou emigreren].
I had expected that Els would emigrate
'I'd expected that Els would emigrate (but I was wrong).'
b. Ik had het verwacht [dat Els zou emigreren].
I had it expected that Els would emigrate
'I had expected it that Els would emigrate (and you can see that I was right).'

Application of this test is not always easy, however. For example, it is not true that factive clauses must be introduced by the anticipatory pronoun; many factive verbs can occur without it, as will be clear from inspecting the factive constructions discussed so far. It will also be clear from the fact that a factive reading of example (100a) is greatly favored when we add the adverb *al* 'already', as in (101a). For completeness' sake, (101b) shows that *al* can also be added to (100b).

(101) a. Ik had al verwacht [dat Els zou emigreren].
I had already expected that Els would emigrate
'I'd already expected that Els would emigrate.'
b. Ik had het al verwacht [dat Els zou emigreren].
I had it already expected that Els would emigrate
'I had already expected it that Els would emigrate.'

Complications also arise in examples containing the pronoun *het*. Consider the examples in (102) with the verb *vertellen* 'to tell', which can also be used either as a non-factive or as a factive verb. The former is clear from (102a), which shows that the speaker has no trouble in denying the truth of the proposition expressed by the complement clause in the first conjunct by means of the second conjunct. The continuation in (102b) is of course compatible with a factive interpretation.

(102) Jan heeft me verteld [dat hij decaan wordt] ...
Jan has me told that he dean becomes
'Jan has told me that he'll become dean of the faculty ... '
a. ... maar dat was maar een geintje. [non-factive]
but that was just a joke
'... but that was just a joke.'
b. ... maar dat wist ik al. [factive]
but that knew I already
'... but I knew that already.'

Example (103) seems to support the claim that adding the anticipatory pronoun *het* 'it' to the first conjunct in (102) favors a factive reading: the continuation in (103a) seems marked because it suggests that the speaker is contradicting himself by denying the presupposed truth of the complement clause in the first conjunct.

(103) Jan heeft het me verteld [dat hij decaan wordt] ...
Jan has it me told that he dean becomes
‘Jan has told me that he’ll become dean of the faculty ... ’
a. #... maar dat was maar een geintje. [non-factive]
but that was just a joke
‘... but that was just a joke.’
b. ... maar dat wist ik al. [factive]
but that knew I already
‘... but I knew that already.’

However, giving a reliable judgment on the acceptability of (103a) is hampered by the fact that *het* ‘it’ need not be interpreted as an anticipatory pronoun but can also be used as a regular pronoun referring to some previous proposition, in which case the postverbal clause simply repeats the contents of that proposition as some kind of afterthought. This interpretation is especially clear when the clause is preceded by an intonation break. The fact that this reading is possible is indicated by the number sign #.

C. Passivization

If the presence of the anticipatory pronoun *het* ‘it’ really does trigger a factive reading of the complement clause, this would be in line with the observation in Haeseryn et al. (1997:1138) that passive constructions with factive verbs normally take the anticipatory pronoun *het* ‘it’ as their subject, while passive constructions with non-factive verbs are normally impersonal, that is, involve the °expletive *er* ‘there’. As English has no impersonal passive, this effect cannot be replicated in the translations; English uses *it* throughout.

(104) a. Er/#Het wordt algemeen beweerd [dat Jan decaan wordt]. [non-factive]
there/it is generally claimed that Jan dean becomes
‘It is generally claimed that Jan will become dean.’
b. Het/??Er wordt algemeen toegejuicht [dat Jan decaan wordt]. [factive]
it/there is generally applauded that Jan dean becomes
‘It is generally applauded that Jan will become dean.’

Haeseryn et al. (1997) also note that the use of the pronoun *het* becomes fully acceptable in (104a) if the embedded clause is preceded by an intonation break: this triggers the regular pronominal interpretation already mentioned in connection with (103a) where the pronoun refers to some previously given proposition, repeated by the embedded clause as an afterthought. This is again indicated by the number sign.

Applying the passivization test to the examples in (102) and (103) and using the continuation ... *maar dat was een geintje* ‘... but that was a joke’, we get the results in the (a)-examples in (105). The use of the impersonal passive in the primeless example gives rise to a fully coherent result but the use of the personal passive in the primed example again has the feeling of a contradiction. But example (105a′) becomes acceptable again if the pronoun *het* is taken to refer to some previous proposition, in which case the clause is preferably preceded by an intonation break. For completeness’ sake, the (b)-examples show that the continuation with ... *maar dat wist ik al* '... but I knew that already' is compatible with both the impersonal and the personal passive.

(105) a. Er werd me verteld [dat hij decaan wordt], maar dat was een geintje.
there was me told that he dean becomes but that was a joke
'I was told that he'll become dean of the faculty but that was just a joke '
a′. #Het werd me verteld [dat hij decaan wordt], maar dat was een geintje.
it was me told that he dean becomes but that was a joke
b. Er werd me verteld [dat hij decaan wordt], maar dat wist ik al.
there was me told that he dean becomes but that knew I already
'I was told that he'll become dean of the faculty but I knew that already.'
b′. Het werd me verteld [dat hij decaan wordt], maar dat wist ik al.
it was me told that he dean becomes but that knew I already
'It was told to me that he'll become dean but I knew that already.'

D. Placement of the dependent clause in the middle field of the matrix clause

The examples in (106) show that placement of the object clause in the middle field blocks the non-factive reading; the continuation in (106a) give rise to an incoherent reading. This shows that word order may disambiguate examples such as (102).

(106) Jan heeft me [dat hij decaan wordt] gisteren verteld ...
Jan has me that he dean becomes yesterday told
'Jan told me yesterday that he'll become dean of the faculty ...'
a. $... maar hij maakte maar een geintje. [non-factive]
but he made just a joke
'... but he just made a joke.'
b. ... maar dat wist ik al. [factive]
but that knew I already
'... but I knew that already.'

IV. The position of the factive clause in the middle field

Factive clauses occupying a position in the middle field of the matrix clause may be separated from the verbs in clause-final position by one or more adverbs (if present). This is illustrated in (107) by means of the modal adverb *waarschijnlijk* 'probably'.

(107) a. dat Jan waarschijnlijk betreurt [dat hij taalkundige is geworden].
that Jan probably regrets that he linguist has become
'that Jan probably regrets that he has become a linguist.'
b. *dat Jan waarschijnlijk [dat hij taalkundige is geworden] betreurt.
c. dat Jan [dat hij taalkundige is geworden] waarschijnlijk betreurt.

It should be noted that the pattern in (107) differs from the pattern that we find with the noun phrase *het feit dat* ... 'the fact that ...' in (108). As (107b) and (108b) differ in acceptability, this can be taken as a potential problem for the hypothesis in Kiparsky & Kiparsky (1970) that factive clauses are reduced noun phrases.

(108) a. dat Jan waarschijnlijk het feit betreurt [dat hij taalkundige is geworden].
that Jan probably the fact regrets that he linguist has become
‘that Jan probably regrets the fact that he has become a linguist.’
b. dat Jan waarschijnlijk het feit [dat hij taalkundige is geworden] betreurt.
c. dat Jan het feit [dat hij taalkundige is geworden] waarschijnlijk betreurt.

One way to approach this problem for Kiparsky & Kiparsky’s hypothesis might be to claim that the word order difference between (107a) and (107c) suffices to make the information-structural distinction between °focus (“discourse-new information”) and presupposition (“discourse-old information”), whereas in (108) this distinction rather relies on the position on the nominal part *het feit*; see Section N8.1.3 for discussion. It remains to be seen, however, whether this line of thinking would lead to a fully satisfactory account of the contrast between (107) and (108).

V. Wh-extraction from factive clauses

If we accept the suggestion from Section N8.1.3 that the word order in (108c) is derived by leftward movement of the nominal object, it seems rather attractive to assume that the order in (107c) is derived by leftward movement of the factive clause. An empirical argument in favor is that we may now appeal to the °freezing effect: the factive clause is a strong °island for *wh*-extraction if part of the middle field of the matrix clause, but not if it follows the verbs in clause-final position.

(109) a. Welk$_i$ boek heeft Jan altijd betreurd [dat hij t_i niet gekocht heeft]?
which book has Jan always regretted that he not bought has
‘Which book has Jan always regretted that he hasn’t bought?’
b. *Welk$_i$ boek heeft Jan [dat hij t_i niet gekocht heeft] altijd betreurd?
which book has Jan that he not bought has always regretted

Recall from Subsection IIE, however, that factive clauses are weak islands in the sense that *wh*-extraction is restricted to nominal objects; *wh*-extraction of, e.g., adverbial phrases is excluded irrespective of the position of the factive clause; this is illustrated again in (110).

(110) a. *Waar$_i$ heeft Jan altijd betreurd [dat hij t_i zijn boek gepubliceerd heeft]?
where has Jan always regretted that he his book published has
b. *Waar$_i$ heeft Jan [dat hij t_i zijn boek gepubliceerd heeft] altijd betreurd?
where has Jan that he his book published has always regretted

The observation that factive clauses exhibit the behavior of weak islands is actually another problem for Kiparsky & Kiparsky’s hypothesis that factive clauses are reduced noun phrases; complex noun phrases are generally strong islands in the sense that they also block extraction of nominal objects from their clausal complement. The examples in (111) show that this holds irrespective of whether the clause precedes or follows the verbs in clause-final position.

(111) a. *Welk$_i$ boek heeft Jan altijd het feit betreurd [dat hij t_i niet gekocht heeft]?
which book has Jan always the fact regretted that he not bought has
b. *Welk$_i$ boek heeft Jan altijd het feit [dat hij t_i niet gekocht heeft] betreurd?
which book has Jan always the fact that he not bought has regretted

VI. The syntactic status of factive clauses

So far, we have more or less adopted Kiparsky & Kiparsky’s hypothesis that factive clauses are reduced noun phrases, but Subsections IV and V have discussed a number of potential problems for this hypothesis. So, it might be advisable to look for another analysis to account for the differences in behavior between non-factive and factive clauses. One such analysis is provided in Barbiers (2000), who argues that while non-factive clauses are complements of the verb, factive clauses are °adjuncts. This proposal is interesting because it would immediately account for the fact that factive clauses can occur in the middle field of the clause, given that this is generally possible with adjunct clauses, as is shown by the examples in (112).

(112) a. dat Peter [nadat hij afscheid genomen had] snel vertrok.
that Peter after he leave taken had quickly left
‘that Peter left quickly after he’d said good-bye.’
a′. dat Peter snel vertrok [nadat hij afscheid genomen had].
b. dat Jan [omdat hij ziek was] niet kon komen.
that Jan because he ill was not could come
‘that Jan couldn’t come because he was ill.’
b′. dat Jan niet kon komen [omdat hij ziek was].

If factive clauses are indeed adjuncts, we expect them to entertain a looser relation to the matrix verb than non-factive verbs. Barbiers claims that this expectation is indeed borne out and he demonstrates this by pointing to the fact that non-factive clauses must be pied-piped under °VP-topicalization, whereas factive clauses can be stranded.

(113) a. Jan zal niet vinden [dat het probleem nu opgelost is].
Jan will not find that the problem now solved is
‘Jan won’t think that the problem has been solved now.’
a′. *Vinden zal Jan niet [dat het probleem nu opgelost is].
b. Jan zal niet toegeven [dat het probleem nu opgelost is].
Jan will not admit that the problem now solved is
‘Jan won’t admit that the problem has been solved now.’
b′. Toegeven zal Jan niet [dat het probleem nu opgelost is].

Another observation provided by Barbiers that may point in the same direction is that °stranding of the clause may disambiguate examples such as (114a): whereas (114a) can be factive (the speaker knows that Jan has been ill) or non-factive (the speaker expects that Jan will tell a lie, e.g., to excuse his absence), example (114b) can only have the former reading.

(114) a. Jan zal wel vertellen [dat hij ziek was]. [non-factive or factive]
Jan will PRT tell that he ill was
‘Jan will probably say that he was ill.’
b. Vertellen zal Jan wel [dat hij ziek was]. [factive only]

However, there are at least three potential problems with Barbiers’ proposal. First, the judgments in (113) and (114) are somewhat delicate and not all speakers are able to produce the same results. Second, as was pointed out by Barbiers himself, the hypothesis does not account for the fact that factive clauses are weak (and not strong) islands, given that adjunct clauses normally block *wh*-extraction of nominal objects as well. Third, assigning adjunct status to factive clauses would lead to the expectation that factive clauses can be omitted (which adjunct clauses generally can), which is not borne out: **Jan betreurde*. We therefore leave the question as to whether Barbiers' hypothesis is tenable to future research.

VII. Factive interrogative clauses

The term factivity is mostly restricted to verbs selecting declarative clauses, due to the fact that it is defined in terms of the truth value of the proposition expressed by sentential complements. A typical example of such a definition is found in Crystal (1991): the term factivity is "used in the classification of verbs, referring to a verb which takes a complement clause, and where the speaker presupposes the truth of the proposition expressed in that clause". The application of this definition is illustrated again in the examples in (115), in which $S_1 \Rightarrow S_2$ stands for "by uttering sentence S_1 the speaker presupposes that the proposition P expressed by S_2 is true".

(115) a. Jan denkt dat Els morgen vertrekt. ⇏ Els vertrekt morgen. [non-factive]
Jan thinks that Els tomorrow leaves Els leaves tomorrow
'Jan thinks that Els is leaving tomorrow ⇏ Els is leaving tomorrow.'
b. Jan betreurt dat Els morgen vertrekt. ⇒ Els vertrekt morgen. [factive]
Jan regrets that Els tomorrow leaves Els leaves tomorrow
'Jan regrets that Els is leaving tomorrow. ⇒ Els is leaving tomorrow.'

Definitions of this sort exclude the existence of factive verbs selecting an interrogative complement clause: interrogative clauses differ from declaratives in that they do not express full propositions as they are characterized by indeterminacy in the value of some variable represented by the *yes/no*-operator or *wh*-phrase; cf. Grimshaw (1979). Whether or not this exclusion is justified can be tested by investigating factive verbs like *vergeten* 'to forget' and *weten* 'to know', both of which may also take an interrogative complement clause. First, consider the examples in (116).

(116) a. Jan weet dat Els morgen vertrekt. ⇒ Els vertrekt morgen.
Jan knows that Els tomorrow leaves Els leaves tomorrow
'Jan knows that Els is leaving tomorrow. ⇒ Els is leaving tomorrow.'
b. Jan weet of Els morgen vertrekt. ⇏ Els vertrekt morgen.
Jan knows whether Els tomorrow leaves Els leaves tomorrow
'Jan knows whether Els is leaving tomorrow. ⇏ Els is leaving tomorrow.'

This sentence pair indeed suggests that verbs taking an interrogative argument clause are non-factive: by uttering sentence (116b), the speaker does not commit himself to the truth of the proposition expressed by the sentence on the right-hand side of the arrow. This is not surprising, of course: the speaker's reference to Jan as a source of more information about the truth of the proposition only makes sense if the speaker does not know the answer to the embedded question himself.

Things seem to be different, however, with embedded *wh*-questions. Consider the contrast between the examples in (117). By uttering the sentence in (117a) the speaker does not entail that the proposition “Els is leaving” is true, whereas the speaker does entail this by uttering the sentence in (117b).

(117) a. Jan vroeg wanneer Els vertrekt. ⇏ Els vertrekt.
Jan asked when Els leaves Els leaves
‘Jan asked when Els is leaving. ⇏ Els is leaving.’
b. Jan weet wanneer Els vertrekt. ⇒ Els vertrekt.
Jan knows when Els leaves Els leaves
‘Jan knows when Els is leaving. ⇒ Els is leaving.’

The verbs *vragen* ‘to ask’ and *weten* ‘to know’ thus differ in that the first is clearly non-factive, but that the second is factive in the slightly more restricted sense that the truth of the proposition expressed by the *non-wh part* of the complement clause is presupposed by the speaker. The examples in (118) show that this difference between *vragen* and *weten* not only holds in cases in which the *wh*-phrase is an adjunct of the embedded clause, but also if it is an argument.

(118) a. Jan vroeg wie er vertrekt. ⇏ Er vertrekt iemand.
Jan asked who there leaves there leaves someone
‘Jan asked who is leaving. ⇏ someone is leaving.’
b. Jan weet wie er vertrekt. ⇒ Er vertrekt iemand.
Jan knows who there leaves there leaves someone
‘Jan knows who is leaving. ⇒ someone is leaving.’

As we have seen in Subsection II, factive verbs have the property that negating or questioning the clause they are heading does not affect the entailment, that is, the examples in (119) have the same entailment as example (116a).

(119) a. Jan weet niet dat Els morgen vertrekt. ⇒ Els vertrekt morgen.
Jan knows not that Els tomorrow leaves Els leaves tomorrow
‘Jan doesn’t know that Els is leaving tomorrow. ⇒ Els is leaving tomorrow.’
b. Weet Jan dat Els morgen vertrekt? ⇒ Els vertrekt morgen.
knows Jan that Els tomorrow leaves Els leaves tomorrow
‘Does Jan know that Els is leaving tomorrow? ⇒ Els is leaving tomorrow.’

The examples in (120) show that the (b)-examples in (117) and (118) likewise pass this litmus test for factivity; by uttering the sentences on the left-hand side of the arrow the speaker entails that the propositions expressed by the sentences on the right-hand side of the arrows are true.

(120) a. Jan weet niet wanneer Els vertrekt. ⇒ Els vertrekt.
Jan knows not when Els leaves Els leaves
‘Jan doesn’t know when Els is leaving. ⇒ Els is leaving.’
a′. Weet Jan wanneer Els vertrekt? ⇒ Els vertrekt.
knows Jan when Els leaves Els leaves
‘Does Jan know when Els is leaving? ⇒ Els is leaving.’

b. Jan weet niet wie er vertrekt. ⇒ Er vertrekt iemand.
Jan knows not who there leaves there leaves someone
‘Jan doesn’t know who is leaving. ⇒ Someone is leaving.’
b′. Weet Jan wie er vertrekt? ⇒ Er vertrekt iemand.
knows Jan who there leaves there leaves someone
‘Does Jan know who is leaving? ⇒ Someone is leaving.’

The syntactic tests for factivity yield slightly equivocal results. Like the factive declarative clause in (121a), the factive interrogative clauses in (121b&c) can be introduced by the anticipatory pronoun *het* ‘it’.

(121) a. Jan weet het dat Els morgen vertrekt.
Jan knows it that Els tomorrow leaves
‘Jan knows it that Els is leaving tomorrow.’
b. Jan weet het wanneer Els vertrekt.
Jan knows it when Els leaves
‘Jan knows it when Els is leaving.’
c. Jan weet het wie er vertrekt.
Jan knows it who there leaves
‘Jan knows it who is leaving.’

However, it seems that placement of a factive complement in the middle field of the matrix clause gives rise to a less felicitous result if the complement clause is interrogative than if it is declarative; whereas (122a) is merely stylistically marked, the examples in (122b&c) seem degraded (although they may improve a little with a contrastive focus accent on the *wh*-word).

(122) a. dat Jan [dat Els morgen vertrekt] nog niet weet.
that Jan that Els tomorrow leaves not yet knows
‘that Jan doesn’t yet know that Els is leaving tomorrow.’
b. $^{??}$dat Jan [wanneer Els vertrekt] nog niet weet.
that Jan when Els leaves not yet knows
‘that Jan doesn’t yet know when Els will be leaving.’
c. $^{??}$dat Jan [wie er vertrekt] nog niet weet.
that Jan who there leaves not yet knows
‘that Jan doesn’t yet know who is leaving.’

Note that the distinction between two types of *wh*-questions is not new and dates back at least to Groenendijk & Stokhof (1984:91ff.), who phrase the distinction in terms of pragmatic implicatures instead of factivity, that is, the speaker’s presupposition. Since a detailed study of the syntactic behavior of factive interrogative constructions is not yet available as far as we know, we will leave this to future research.

VIII. Conclusion

The previous subsections have shown that there are a large number of systematic differences between non-factive and factive clauses, which suggests that they must also receive a different syntactic analysis. Kiparsky & Kiparsky (1970) argued that the difference should be expressed by assuming a difference in categorial status: non-factive clauses are clausal complements and factive clauses are reduced nominal complements. Barbiers (2000) argued that the distinction is related to syntactic function: non-factive clauses are complements of the verb, whereas factive clauses are adjuncts. The two proposals are embedded in a larger set of theoretical assumptions and we have seen that they each have their own problems. The discussion has revealed at any rate that the fact that factive clauses can occur in the middle field of the matrix clause is not just some isolated fact but that it is part of a wider set of facts that still needs to receive an explanation.

5.1.2.4. Reported speech

The complement clauses discussed in the preceding sections all have the form of finite embedded clauses, that is, they are introduced by a complementizer (*dat* 'that' or *of* 'whether') or a *wh*-phrase, and have the finite verb in clause-final position. Complement clauses of this kind are also found in sentences such as (123a), in which the speaker reports what someone else has said, thought, etc. The sentences in (123b&c) show, however, that there are also alternative ways.

(123) a. Jan zei/dacht *dat hij ziek was*. [indirect reported speech/quote]
Jan said/thought that he ill was
'Jan said/thought that he was ill.'
b. Jan zei/dacht: "*Ik ben ziek*". [direct reported speech/quote]
Jan said/thought I am ill
'Jan said/thought: "Ik ben ziek".'
c. Jan zei/dacht *hij was ziek*. [semi-direct reported speech/quote]
Jan said/thought he was ill

Although the examples in (123) show that constructions like these are not strictly limited to speech proper but may also pertain to thoughts, they are normally said to involve REPORTED SPEECH. We will therefore refer to the whole set of constructions as reported speech constructions, and to the parts in italics, which express the reported parts, as QUOTES. Although quotes are often analyzed as direct object clauses (see, e.g., Haeseryn et al. 1997), we will see that this is not entirely correct for all cases: see also Corver (1994), Corver & Thiersch (2003), and De Vries (2006). For this reason we will refer to the clauses headed by the verb of saying/thinking not as °matrix clauses but, more neutrally, as *SAY*-CLAUSES.

The way of reporting speech in (123a) is normally referred to as INDIRECT REPORTED SPEECH. An important property of this construction is that the embedded clause(s) does/do not necessarily correspond in a one-to-one fashion to the actual utterance(s) of the source indicated: for example, if Jan is a very talkative person, the embedded clause may simply summarize a story that took 30 minutes to tell, that is, example (123a) does not imply that Jan literally said: "Ik ben ziek". This distinguishes indirect from DIRECT REPORTED SPEECH; example (123b) is only true if Jan pronounced the sentence *Ik ben ziek*, for which reason we repeated this sentence literally in the translation of (123b). Another difference, which is illustrated in (124), is that direct quotes can consist of a sequence of independent sentences, whereas in indirect reported speech constructions each assertion must be realized as a separate dependent clause.

(124) a. Jan zei/dacht [[dat hij ziek was] en [dat hij thuis bleef]]. [indirect]
Jan said/thought that he ill was and that he at.home stayed
'Jan said that he was ill and that he would stay at home.'
b. Jan zei/dacht: "Ik ben ziek. Ik blijf thuis". [direct]
Jan said/thought I am ill I stay at.home
'Jan said: "Ik ben ziek. Ik blijf thuis".'

In example (123c), we are dealing with SEMI-DIRECT REPORTED SPEECH (also known as ERLEBTE REDE), which constitutes a kind of in-between category. It differs from indirect reported speech in that the quote has the form of a main clause. This is clear from the position of the finite verb: if we are dealing with indirect reported speech, the finite verb should occupy the clause-final position, whereas it should be in second position in semi-direct reported speech. The placement of the finite verb is clearly related to the distribution of the complementizer: the examples in (125) show that the complementizer is obligatory in indirect reported speech constructions with declarative quotes, but that it cannot appear in semi-direct reported speech constructions. This also shows that semi-direct reported speech constructions such as (125b) cannot be derived from direct reported speech constructions such as (125a) by deletion of the complementizer *dat*, but that they constitute a construction type in their own right.

(125) a. Jan zei *(dat) hij ziek was. [indirect]
Jan said that he ill was
'Jan said that he was ill.'
b. Jan zei (*dat) hij was ziek. [semi-direct]
Jan said that he was ill

Although semi-direct reported speech does not involve a literal quote, it differs from indirect reported speech in that the relation with what was actually said is much tighter. Example (123c), for instance, suggests that Jan said something like *Ik ben ziek*. Semi-direct quotes differ from direct quotes mainly in that first and second person pronouns are replaced by third person pronouns and that the present tense of the reported sentence is adapted to conform to the past tense of the verb *zeggen* 'to say'; cf. Lodewick (1975:169-70). The semi-direct equivalent of the direct reported speech construction in (126a) would then be as in (126b).

(126) a. Jan dacht: "*Ik* **haat** *je* uit de grond van *mijn* hart". [direct]
Jan thought I hate you from the bottom of my heart
b. Jan dacht, *hij* **haatte** *hem* uit de grond van *zijn* hart. [semi-direct]
Jan said he hated him from the bottom of his heart

Semi-direct reported speech is not often used in colloquial speech but is regularly found as a stylistic device in modern literature, especially for expressing the internal thoughts of the protagonist(s) of a story (the so-called interior monologue); Lodewick in fact claims that it is a characteristic feature of impressionistic writings from around 1900. The use of semi-direct reported speech constructions implies that, like direct quotes, semi-direct quotes may involve sequences of sentences; this expectation is borne out, as is illustrated in (127b) by means of the semi-direct counterpart of the direct reported speech construction in (124b), repeated here as (127b).

(127) a. Jan zei/dacht: “Ik ben ziek. Ik blijf thuis”. [direct]
Jan said/thought I am ill I stay at.home
‘Jan said: “Ik ben ziek. Ik blijf thuis”.’
b. Jan zei/dacht, hij was ziek, hij bleef thuis. [semi-direct]
Jan said/thought he was ill he stayed at.home

Embedded clauses in indirect reported speech constructions such as (123a) can be pronominalized (*Jan zei het* ‘Jan said it’), which suggests that they function as direct object clauses. It is often assumed without much argumentation that direct and semi-direct reported speech constructions like (123b&c) also involve direct object clauses; see Haeseryn et al. (1997:1100). This is, however, far from obvious: the quotes in the two examples in (127) consist of series of sentences, and this makes it is very unlikely that quotes have the function of direct object. In fact, it may even be the case that we are dealing with a relation of an entirely different sort given that the part *Jan zei* need only be used in examples like (123b&c) when the context leaves open what the source of the quote is; if the source is known, it can readily be omitted. This is illustrated in the little scene in (128), which might be used as the start of a story. See also the discussion of what Huddleston and Pullum (2002: 1029) call free indirect/direct speech.

(128) Jan kwam in zijn pyjama de kamer binnen.
Jan came in his pajamas the room inside
‘Jan entered the room in his pajamas.’
a. (Hij dacht:) “Ik ben ziek. Ik blijf thuis”. [direct]
he thought I am ill I stay at.home
‘(He thought:) “Ik ben ziek. Ik blijf thuis”.’
b. (Hij dacht,) hij was ziek; hij bleef thuis. [semi-direct]
he thought he was ill he stayed at.home
‘(He thought,) he was ill. He would stay in.’

Matrix clauses in indirect reported speech constructions, on the other hand, can only be left unexpressed under very special circumstances. Sentence (129b), for example, cannot replace the continuations of the story in (128a&b), but is only acceptable as an answer to a question such as (129a)—we are dealing with some kind of ellipsis; the part of the answer that can be recovered from the original question (here: the matrix clause) is simply omitted.

(129) a. Wat zei Jan?
what said Jan
‘What did Jan say?’
b. Dat hij ziek was en dat hij thuis bleef. [indirect]
that he ill was and that he at.home stayed
‘That he was ill and that he would stay in.’

We will see in Subsection II that this difference is reflected in several other ways, and that there are reasons for assuming that in many cases direct and semi-direct reported speech constructions are not regular transitive constructions. Instead, the quotes function as full-fledged sentences with parenthetical *say*-clauses.

We already mentioned that semi-direct reported speech is normally used in written language and cannot be found in colloquial speech so frequently. Subsection III will show, however, that there is also a reported speech construction that is normally avoided in writing but which is highly frequent in speech; cf. Verkuyl (1977) and Romein (1999). This construction, which is illustrated in (130), involves the QUOTATIVE PREPOSITION *van* followed by an intonation break, which may optionally be preceded by a hesitation marker like *eh* 'er', and a quote. The quote can be either direct or, less frequently, indirect; cf. Verkuyl (1977).

(130) a. Marie dacht van (eh) ... Hij komt straks wel weer terug.
Marie thought VAN er he comes later PRT again back
'Marie thought something like: "He'll probably return later again".'
b. Marie dacht van (eh) ... dat hij straks wel weer terug komt.
Marie thought VAN er that he later PRT again back comes

The three types of reported speech constructions introduced above will be discussed in separate subsections. Subsection I discusses indirect reported speech and shows that the indirect quote functions as a regular argument clause. Subsection II continues with a discussion of (semi-)direct reported speech and argues that the *say*-clause in such constructions is often (but not always) parenthetical. Subsection III concludes with a discussion of the colloquial quotative *van*-construction in (130).

I. Indirect reported speech

Quotes in indirect reported speech constructions behave in many respects like other types of direct object clauses. The following subsections will show this for a number of properties of object clauses, which are discussed more extensively in Sections 5.1.2.1 to 5.1.2.3. We will also discuss some facts not mentioned there, which can be used to provide support for the claim that indirect quotes are regular object clauses.

A. Selection restrictions on the embedded clause

The form of indirect quotes is determined to a large extent by the main verb: verbs like *zeggen* 'to say' and *denken* 'to think' select declarative clauses, whereas verbs like *vragen* 'to ask' select interrogative clauses. See Section 5.1.2.1 for a more extensive discussion of the selection restrictions on declarative and interrogative object clauses.

(131) a. dat Peter zei/dacht [dat Jan ziek was].
that Peter said/thought that Jan ill was
'that Peter said/thought that Jan was ill.'
b. dat Marie vroeg [of Jan ziek was].
that Marie asked whether Jan ill was
'that Marie asked whether Jan was ill.'

B. Position of the embedded clause

The examples in (131) show that indirect quotes normally follow the verb(s) in clause-final position—placing such quotes in the °middle field is normally marked and triggers a factive reading; cf. Section 5.1.2.3. Topicalization of indirect quotes is possible, in which case they are optionally followed by the resumptive pronoun *dat* 'that'; see Section 5.1.2.2 for a more extensive discussion of the placement of direct object clauses.

(132) a. [Dat Peter ziek is] (dat) zei/dacht Jan.
that Peter ill is that said/thought Jan
b. [Of Jan ziek was] (dat) vroeg Marie.
whether Jan ill was that asked Marie

C. The use of an anticipatory pronoun

The use of an °anticipatory pronoun seems possible but marked; the examples in (133) are more likely to be construed with a regular, discourse-related interpretation of the pronoun, which again favors a factive reading of the embedded clause; see Section 5.1.2.3, sub IIIB.

(133) a. dat Peter het zei/dacht [dat Jan ziek was].
that Peter it said/thought that Jan ill was
'that Peter said/thought it that Jan was ill.'
b. dat Marie het vroeg [of Jan ziek was].
that Marie it asked whether Jan ill was
'that Marie asked it whether Jan was ill.'

D. Wh-extraction

Embedded declarative clauses are fully transparent for *wh*-extraction in the sense that both arguments and adjuncts can be extracted. See Section 5.1.1, sub III, for discussion of the fact that *wh*-extraction becomes unacceptable if an anticipatory or deictic pronoun is added.

(134) a. Wie$_i$ zei/dacht je [dat t_i dat boek gekocht had]? [subject]
who said/thought you that that book bought has
'Who did you say/think had bought that book.'
b. Wat$_i$ zei/dacht je [dat Peter t_i gekocht heeft]? [object]
what said/thought you that Peter bought has
'What did you say/think that Peter has bought?'
c. Wanneer$_i$ zei/dacht je [dat Peter t_i vertrokken was]? [adjunct]
when said/thought you that Peter left had
'When did you say/think that Peter had left?'

Wh-extraction is not possible from embedded interrogative clauses. The standard analysis in generative grammar is that this is due to the fact that *wh*-extraction cannot apply in one fell swoop but must proceed via the clause-initial position of the object clause; this position is available in declarative examples such as (134), but occupied by a *wh*-phrase in embedded *wh*-questions such as (135) or a phonetically empty question °operator in embedded *yes*/*no*-questions.

(135) a. *Wie$_i$ vroeg je [wat$_j$ t_i t_j gekocht heeft]? [subject]
who asked you what bought has
Compare: '*Who did you ask what has bought?'
b. *Wat$_j$ vroeg je [wie$_i$ t_i t_j gekocht heeft]? [object]
what asked you who bought has
Compare: '*What did you ask who has bought?'
c. *Wanneer$_j$ vroeg je [wie$_i$ t_i t_j vertrokken was]? [adjunct]
when asked you who left had
Compare: '*When did you ask who had left?'

Note in passing that, contrary to what has been reported for English, *wh*-extraction of the subject in (134a) is acceptable despite the presence of a complementizer and that most Dutch speakers find the three examples in (135) equally unacceptable. We will not digress on these issues here but refer the reader instead to Section 11.3.1 for an extensive discussion of the restrictions on *wh*-extraction. Note also that example (135c) is fully acceptable if *wanneer* 'when' is construed as a modifier of the matrix clause but this is, of course, not the reading intended here (as is indicated by the placement of the °trace t_j within the embedded clause).

E. Binding

Referential personal pronouns as part of an indirect quote can be bound by an antecedent in the *say*-clause; see Section N5.2.1.5, for an extensive discussion of °binding of such pronouns. Since such pronouns can also co-refer with some referential expression as a result of °accidental coreference, we have to appeal to examples in which the antecedent is a quantified expression like *iedereen* 'everyone' or *niemand* 'nobody' in order to show this. Example (136a) first shows that the pronoun *hij* cannot be used as referentially dependent on a universally/negatively quantified expression if the latter is part of some other sentence; in such cases, the pronoun must refer to some known entity in the domain of discourse. The fact that the pronoun can have a °bound variable reading, that is, can be interpreted as referentially dependent on the quantifiers in (136b) shows that we are not dealing with accidental coreferentiality but with binding. Italics indicate the intended binding relation.

(136) a. **Iedereen*/*Niemand* bleef thuis. *Hij* was ziek.
everybody/nobody stayed at.home he was ill
b. *Iedereen*/*Niemand* zei [dat *hij* ziek was].
everybody/nobody said that he ill was
'Everybody/Nobody said that he was ill.'

The acceptability of the bound variable reading in (136b) unambiguously shows that we are dealing with an object clause; if the indirect quote were not the object of the verb *zeggen* 'to say', there would be no °c-command relation between the subject of the *say*-clause and the pronoun and, consequently, binding would be wrongly predicted to be impossible, just as in (136a).

F. Licensing of negative polarity items

That indirect quotes are object clauses is also shown by the fact that °negative polarity items (NPIs) like *ook maar iets* ‘anything’ as part of an indirect quote can be licensed by some negative element in the *say*-clause. The reason is that, like binding, NPI licensing requires c-command between the NPI and its licenser. NPI-licensing is excluded in (137a) since the NPI and its potential licenser *niemand* ‘nobody’ are not in the same sentence and there is consequently no c-command relation between them; NPI-licensing is possible in (137b) since the subject of the matrix clause does c-command the NPI in the embedded object clause. Italics indicate the relation between the NPI and its intended licenser.

(137) a. *Niemand* bleef thuis. *Hij had daar *ook maar iets* te doen.
nobody stayed at.home he had there anything to do
b. *Niemand* dacht dat hij thuis *ook maar iets* te doen had.
nobody thought that he at.home anything to do had
‘Nobody thought that he had anything to do at home.’

G. Conclusion

The previous subsections have shown that quotes in indirect reported speech constructions are direct object clauses. They exhibit the behavior of regular object clauses, which was discussed more extensively in Sections 5.1.2.1 to 5.1.2.3. Additionally, the discussion of binding and NPI-licensing has established that subjects of *say*-clauses c-command the constituents in indirect quotes, which lends credence to the claim that such quotes are regular direct object clauses.

II. Direct and semi-direct reported speech

This subsection discusses the question as to whether (semi-)direct quotes should be considered direct object clauses. Subsections A and B show that the evidence is rather varied, from which we will conclude that (semi-)direct reported speech constructions are often structurally ambiguous. Subsection C provides some additional support for this conclusion, and Subsection D concludes with a brief note on the internal structure of the relevant constructions. Since (semi-)direct reported speech constructions have not yet been studied extensively from a syntactic point of view, much of what follows is tentative in nature and should therefore be taken with care.

A. Direct reported speech

Direct reported speech constructions are often ambiguous. We will argue that such constructions allow not only an analysis as regular transitive constructions in which the quote functions as a direct object, but also an analysis in which the quote can function as a main clause with an embedded parenthetical *say*-clause; cf. De Vries (2006).

1. Are direct quotes direct objects?

Example (138a) strongly suggests that the direct quote in (138b) functions as the direct object of the verb *zeggen* ‘to say’. The fact that the pronoun in (138a) cannot be omitted shows that *zeggen* is a transitive verb that cannot be used pseudo-intransitively. The fact that the direct quote is the only candidate that could function as direct object in (138b) therefore seems to leave us no other option than to conclude that it must have this syntactic function.

(138) a. Jan zei *(het).
Jan said it
b. Jan zei: “Ik ben ziek”.
Jan said I am ill

Although this line of argumentation seems quite convincing, there are various reasons to reject the conclusion that direct quotes always function as object clauses. First, it seems that introducing the direct quote with an anticipatory/deictic pronoun *het* ‘it’ is not normally possible. Although example (139a) is fully acceptable, the pronoun *het* does not seem to refer to the direct quote but to some other proposition. This is evident from the fact illustrated in (139b) that the pronoun can be replaced by an indirect quote such as the one in square brackets. Besides, example (139c) shows that we would rather use phrases like *als volgt* ‘as follows’ or the manner adverb *zo* ‘thus’ if we want to anticipate the direct quote.

(139) a. Jan vroeg het haar eindelijk: “Als ik je zie begint mijn hart te bonken: boem, boem, boem ... Ik kan niet langer zonder jou!”
‘Jan finally asked her it: “Whenever I see you my heart starts pounding boom, boom, boom ... I can no longer live without you!”’
b. Jan vroeg haar eindelijk [of ze met hem wilde trouwen]: “Als ik je zie begint mijn hart te bonken: boem, boem, boem ... Ik kan niet langer zonder jou!”
‘Jan finally asked her whether she would marry him: “Whenever I see you my heart start pounding boom, boom, boom ... I can no longer live without you!”’
c. Jan vroeg het haar *als volgt/zo*: “Als ik je zie begint mijn hart te bonken: boem, boem, boem .... Ik kan niet langer zonder jou!”
‘Jan finally asked her it as follows/thus: “Whenever I see you my heart starts pounding boom, boom, boom ... I can no longer live without you!”’

From the discussion of the examples in (139) we are forced to conclude that the direct quote does *not* function as a direct object in the examples in (139). Barbiers (2000:190) even suggests that postverbal direct quotes are not even part of the preceding *say*-clauses given that their intonational contour is entirely independent; they are always preceded by a distinct intonation break. He suggests that this makes it more likely that postverbal direct quotes function as some kind of afterthought since afterthoughts exhibit the same prosodic effect. Barbiers does not claim that direct quotes are never direct objects, but he asserts that they can only have this function if they occur in the middle field of the clause, as in (140), in which case they have the same distribution as nominal objects. Note in passing that examples such as (140) quickly degrade when the quote gets longer.

(140) a. Jan heeft “hallo” tegen de leraar gezegd.
Jan has hello to the teacher said
‘Jan has said “hallo” to the teacher.’
b. Jan heeft “ik ben ziek” tegen de leraar gezegd.
Jan has I am ill to the teacher said
‘Jan has said “Ik ben ziek” to the teacher.’

In (140) it is not entirely clear whether we are really dealing in (140) with reported speech in the sense intended here. It may also be the case that we simply have to do with an autonomous use of the word/phrase in question. That this may be the case is strongly suggested by the fact that an utterance such as (140a) can quite naturally be followed by something such as (141a). De Vries (2006) provides a similar example and adds that the quote can also be in a language other than Dutch. This again suggests that quotes may involve the autonomous use of the word/phrase in question, and that this is the reason why they behave syntactically as nominal arguments of the verb. In the discussion below we will ignore the autonomous use of quotes in the middle field of the clause.

(141) a. Dat is onbeleefd: hij had “goedemorgen” moeten zeggen.
that is rude he should good.morning have said
‘That is rude: he should have said “goedemorgen”.’
b. John heeft “I am ill” tegen de leraar gezegd.
John has I am ill to the teacher said
‘John has said “I’m ill” to the teacher.’

Barbiers does not discuss direct quotes in the left periphery of the utterance, as in (142), but it seems that such constructions show that direct quotes have an ambiguous syntactic status. Although the construction in (142a) is the one commonly used, the examples in (142b&c) show that it is also possible to add the demonstrative pronoun *dat* or the manner adverb *zo* as a resumptive element.

(142) a. “Ik ben ziek”, zei Jan.
I am ill said Jan
‘“Ik ben ziek”, Jan said.’
b. “Ik ben ziek”, *dat* zei Jan.
I am ill that said Jan
c. “Ik ben ziek”, *zo* zei Jan.
I am ill thus said Jan

Subsection B will show that example (142b) can be analyzed as a °left-dislocation construction. This example would then receive a similar analysis as example (143a) in which the resumptive pronoun *dat* has a neuter singular antecedent functioning as the logical direct object of the sentence. Example (143b) is added to show that other resumptive pro-forms are used when the left-dislocated element has some other logical function: the resumptive pro-form *dan*, for example, is used when the left-dislocated element is the temporal adverb *morgen* ‘tomorrow’.

(143) a. Dat boek, dat heb ik al gelezen.
that book that have I already read
‘That book, I’ve already read it.’
b. Morgen, *dan* ga ik naar Groningen.
tomorrow then go I to Groningen
‘Tomorrow, I’ll be going to Groningen then.’

Although Subsection B will argue that (142c) is not a left-dislocation construction, the fact that the manner adverb *zo* is used in a similar resumptive function immediately suggests that the direct quote does not function as the logical direct object of the *say*-clause. This conclusion receives further support from (144). Example (144a) shows that the left-dislocation construction with the resumptive pronoun *dat* does not allow the addition of the object pronoun *het*, which is to be expected given that the resumptive pronoun already performs this function. Example (144b), on the other hand, shows that, in the right context, the addition of the object pronoun *het* is admissible in the construction with *zo*, which proves that the direct quote does not function as the logical direct object of the *say*-clause in this case.

(144) a. “Ik ben ziek”, *dat* zei Jan *(het).
I am ill that said Jan it
b. “Ik ben ziek”, *zo* zei Jan (het).
I am ill thus said Jan it

The fact that direct quotes need not function as (logical) direct objects of the *say*-clause, established by the examples in (139) and (142) to (144), shows that our earlier conclusion on the basis of example (138a) that the verb *zeggen* ‘to say’ may not occur without a direct object is wrong; if a direct quote is present with some other function than (logical) direct object of the *say*-clause, the direct object of the verb *zeggen* can apparently remain unexpressed.

To sum up, this subsection has provided evidence that direct quotes preceded by a *say*-clause do not function as the (logical) direct object of this *say*-clause. The situation is different when the *say*-clause follows the quote; the quote may then have the function of (logical) direct object, in which case the resumptive pronoun *dat* can be inserted between the quote and the finite verb, or it may have an adverbial function, in which case the resumptive pro-form surfaces as the manner adverb *zo*. Observe that this conclusion raises the question as to how the selection restrictions imposed by the matrix verbs on the direct quote can be accounted for if the latter functions as an adjunct. Given that this cannot be accounted for by normally assumed syntactic means (that is, subcategorization), a pragmatic account seems to be called for. We leave this for future research.

(145) a. Jan zei/*vroeg: “Els wil vast wel een ijsje”.
Jan said/asked Els wants PRT PRT an ice.cream
‘Jan said: “I’m sure Els would like to have an ice cream”.’
b. Jan vroeg/*zei: “Wie wil er een ijsje?”.
Jan asked/said who wants there an ice.cream
‘Jan asked: “Who would like to have an ice cream?”.’

2. Direct quotes and parenthetical clauses

The previous subsection has shown that direct quotes can but need not function as direct object clauses of verbs of saying/thinking when they precede the *say*-clause. The following question now arises: what is the structure of those constructions in which the quote does not function as direct object? This subsection argues that direct quotes are regular main clauses in such cases, which contain a parenthetical *say*-clause. A first step in the argument involves the possible word orders in the three constructions in (146).

(146) a. “Peter zal het boek morgen brengen”, zei Marie.
Peter will the book tomorrow bring said Marie
‘“Peter zal het boek morgen brengen”, Marie said.’
b. “Peter zal het boek morgen brengen”, dat zei Marie.
Peter will the book tomorrow bring that said Marie
c. “Peter zal het boek morgen brengen”, zo zei Marie.
Peter will the book tomorrow bring thus said Marie

We begin our discussion with example (146b), which we analyze as a left-dislocation construction. Example (147a) shows that the direct quote need not precede the *say*-clause but can also be right-dislocated, in which case the resumptive pronoun *dat* will be replaced by the proximate demonstrative pronoun *dit* ‘this’. The example which is crucial for our discussion is (147b), which shows that the direct quote cannot be split by the *say*-clause.

(147) a. Marie zei dit: “Peter zal het boek morgen brengen”.
Marie said this: Peter will the book tomorrow bring
‘Marie said the following: “Peter zal het boek morgen brengen”’.
b. *“Peter”, dat/dit zei Marie, “zal het boek morgen brengen”.
Peter that/this said Marie will the book tomorrow bring

We should keep in mind, however, that reliable judgments on examples such as (147b) are sometimes hampered by the fact that the same string is acceptable with a non-quote interpretation: the speaker then simply provides a statement of his own and uses a parenthetical clause to point at Marie as his source of information. This is brought out in example (148a), in which the adverb *tenminste* ‘at least’ forces the intended non-quote reading. Example (148b) shows that the parenthetical clause cannot appear in a position preceding the constituent in sentence-initial position (here: *Peter*).

(148) a. “Peter”, dat zei Marie tenminste, “zal het boek morgen brengen”.
Peter that said Marie at.least will the book tomorrow bring
‘According to Marie at any rate, Peter will bring the book tomorrow.’
b. *Marie zei dat/dit tenminste, “Peter zal het boek morgen brengen”.
Marie said that/this at.least Peter will the book tomorrow bring

Putting aside the non-quote reading, we are forced to conclude that the construction in (146b) with resumptive *dat* differs sharply from the construction in (146a) without a resumptive pronoun. The examples in (149) bear out that in the latter case the direct quote can be split in various places by the *say*-clause. The examples in (150) show that the same thing holds for construction (146c) with *zo*.

(149) a. “Peter zal het boek morgen brengen”, zei Marie.
Peter will the book tomorrow bring said Marie
‘Peter will bring the book tomorrow, Marie said.’
b. “Peter”, zei Marie, “zal het boek morgen brengen”.
c. “Peter zal”, zei Marie, “het boek morgen brengen”.
d. “Peter zal het boek ”, zei Marie, “morgen brengen”.
e. $^{?}$“Peter zal het boek morgen”, zei Marie, “brengen”.

(150) a. “Peter zal het boek morgen brengen”, zo zei Marie.
Peter will the book tomorrow bring thus said Marie
b. “Peter”, zo zei Marie, “zal het boek morgen brengen”.
c. “Peter zal”, zo zei Marie, “het boek morgen brengen”.
d. “Peter zal het boek ”, zo zei Marie, “morgen brengen”.
e. $^{?}$“Peter zal het boek morgen”, zo zei Marie, “brengen”.

The fact that the direct quotes can be split in (149) and (150) suggests that we are dealing with parenthetical constructions. A potential problem is that example (151a) shows that the presumed parenthetical *say*-clause in (149) may also precede the quote; this is unexpected as example (148b) has shown that parenthetical clauses cannot do so. However, there seems to be more to this than meets the eye given that the *say*-clause in (150) behaves as expected and is indeed unable to precede the quote: example (151b) is only acceptable if the sentence contains an object pronoun like *het*.

(151) a. Marie zei: “Peter zal het boek morgen komen brengen”.
Marie said Peter will the book tomorrow come bring
b. Marie zei *(het) zo: “Peter zal het boek morgen komen brengen”.
Marie said it thus Peter will the book tomorrow come bring

The fact that the addition of *het* to the examples in (150) is unusual, to say the least, suggests that (149) and (150) involve constructions entirely different from (151); whereas the former involve parenthetical *say*-clauses, the *say*-clauses in the latter may be regular transitive main clauses.

If we are indeed concerned with parenthetical clauses in (149) and (150), we expect to find a wider range of examples that do not involve verbs of saying/thinking. This expectation is borne out; in fact, writers have created an infinite number of variations on this theme. A number of rather conventional examples are given in (152). Note that the quotes cannot be analyzed as arguments of the verbs *beginnen* ‘to start’, *vervolgen* ‘to continue’, and *besluiten* ‘to conclude’ in these examples: these verbs already have a direct object, *zijn verhaal* ‘his story’; see De Vries (2006) for a number of less conventional examples.

(152) a. “De wind”, (zo) begon hij zijn verhaal, “was stormachtig”.
the wind thus started he his story was tempestuous
‘”The wind”, (thus) he started his story, “was tempestuous”.’

b. “De boot” (zo) vervolgde hij zijn verhaal, “was in gevaar”.
the boat thus continued he his story was in danger
‘“The boat”, (thus) he continued his story, “was in danger”.’

c. “De schipper”, (zo) besloot hij zijn verhaal, “spoelde dood aan”.
the skipper thus concluded he his story washed dead ashore
‘“The skipper”, (thus) he concluded his story, “washed ashore dead”.’

In order to give an impression of the semantic verb types that can be used in parenthetical *say*-clauses, we provide a small sample in (153), adapted from De Vries (2006). Note that this list includes a number of intransitive verbs like *schreeuwen* ‘to shout’, which provides further support for the claim that a direct quote does not function as an argument of the main verb in parenthetical *say*-clauses.

(153) a. Saying, thinking and writing: *antwoorden* ‘to answer’, *denken* ‘to think’, *prediken* ‘to preach’, *schrijven* ‘to write’, *vertellen* ‘to tell’, *vragen* ‘to ask’, *zeggen* ‘to say’

b. Manner of speech and sound emission, *schreeuwen* ‘to shout’, *vloeken* ‘to curse’, *zuchten* ‘to sigh’, *giechelen* ‘to giggle’, *schateren* ‘to roar’, *trompetteren* ‘to trumpet’, *sissen* ‘to hiss’, *zingen* ‘to sing’

c. Thinking, observation and explanation: *concluderen* ‘to conclude’, *denken* ‘to think’, *fantaseren* ‘to fantasize’, *opmerken* ‘to observe’, *peinzen* ‘to contemplate’, *verduidelijken* ‘to clarify’

B. Semi-direct reported speech

Semi-direct reported speech constructions exhibit more or less the same syntactic behavior as their direct counterparts. The direct reported speech constructions in (139), for instance, can easily be transformed into the semi-direct reported speech constructions in (154). It shows that, like direct quotes, semi-direct quotes need not function as direct objects of the verb *zeggen* ‘to say’. It may therefore be the case that in examples such as (154) the direct quote is actually not part of the first sentence, but consists of a series of independent sentences.

(154) a. Jan vroeg het haar eindelijk. Als hij haar zag, begon zijn hart te bonken: boem, boem, boem ... Hij kon niet langer zonder haar!
‘Jan finally asked her it. Whenever he saw her his heart started pounding boom, boom, boom ... He could no longer live without her!’

b. Jan vroeg haar eindelijk of ze met hem wilde trouwen. Als hij haar zag, begon zijn hart te bonken: boem, boem, boem ... Hij kon niet langer zonder haar!
‘Jan finally asked her whether she would marry him. Whenever he saw her his heart started pounding boom, boom, boom ... He could no longer live without her!’

c. Jan vroeg het haar *als volgt/zo*. Als hij haar zag, begon zijn hart te bonken: boem, boem, boem ... Hij kon niet langer zonder haar!
‘Jan finally asked her it as follows/thus. Whenever he saw her his heart started pounding boom, boom, boom ... He could no longer live without her!’

The hypothesis that semi-direct quotes are independent sentences may also account for the fact that semi-direct quotes cannot be embedded whereas direct reported speech constructions can. The acceptability contrast between the two primed examples in (155) illustrates this. However, it may not be a syntactic issue after all: embedding semi-direct speech constructions may simply be inconsistent with the fact that a semi-direct quote is a stylistic means used for expressing the internal thoughts of the protagonist(s) of a story; see the discussion in the introduction to Section 5.1.2.4. We leave this issue for future research.

(155) a. Jan dacht: “Ik ben ziek”.
Jan thought I am ill
a′. Ik weet zeker dat Jan dacht: “Ik ben ziek”.
I know for.sure that Jan thought I am ill
b. Jan dacht: hij was ziek.
Jan thought he was ill
b′. $^{\$}$Ik weet zeker dat Jan dacht hij was ziek.
I know for.sure that Jan thought he was ill

Like direct quotes, semi-direct quotes seem to have an ambiguous syntactic status, as is clear from the fact that the direct quotes in (142) can be replaced by semi-direct quotes without any difficulty.

(156) a. Hij was ziek, zei Jan.
he was ill said Jan
‘He was ill, Jan said.’
b. Hij was ziek, *dat* zei Jan.
he was ill that said Jan
c. Hij was ziek, *zo* zei Jan.
he was ill thus said Jan

The acceptability of (156b&c) suggests that semi-direct quotes may function as independent sentences with parenthetical *say*-clauses. This is confirmed by the examples in (157), which show that the *say*-clauses may split the quotes.

(157) a. Hij, zei Jan, was ziek.
he said Jan was ill
b. Hij, zo zei Jan, was ziek.
he thus said Jan was ill

The acceptability of (156b) suggests that semi-direct quotes may also function as direct objects, which seems to be confirmed by the fact illustrated in (158a) that the *say*-clause with resumptive *dat* cannot split the quote. Note, however, that this sentence is fully acceptable if it is interpreted as an assertion made by the speaker himself, who simply points to Jan as his source of information by means of a parenthetical clause, as in (158b).

(158) a. *Hij, dat zei Jan, was ziek. [semi-direct quote]
he, that said Jan, was ill
b. Hij, dat zei Jan tenminste, was ziek. [non-quote]
he, that said Jan at least, was ill

The difference between the semi-direct reported speech constructions in (157) and the non-quote construction in (158b) can be brought out even more clearly by taking coreferentiality into account: whereas the pronouns in the quotes in (157) can be interpreted as coreferential with the subject *Jan* of the *say*-clauses, the pronoun in (158b) does not allow this so easily. We illustrate this in the primeless examples of (159) by means of slightly more elaborate examples. Example (159b′) shows that the proper name in (159b) must be replaced by a pronoun in order to allow the intended coreferentiality reading, and even then this reading is often emphasized in speech by addition of the emphatic marker *zelf* 'himself'. Note that some of our informants do allow the intended coreference relation indicated in (159b); this is indicated by the percentage sign.

(159) a. Morgen zou *hij*, (zo) zei *Jan*, vroeg vertrekken.
tomorrow would he, thus said Jan early leave
'He, said Jan, would leave early tomorrow.'
b. %Morgen zou *hij*, dat zei *Jan* tenminste, vroeg vertrekken.
tomorrow would he, thus said Jan at.least early leave
b′. Morgen zou *hij*, dat zei *hij* tenminste (zelf), vroeg vertrekken.
tomorrow would he, thus said he at.least himself early leave

Although the discussion above suggests that semi-direct quotes may function not only as independent sentences but also as direct objects of the verb of saying, it should be noted that they never occur in the middle field of the *say*-clause: the direct reported speech construction in (140b), repeated here as (160a), does not have a semi-direct counterpart: example (160b) is unacceptable under the intended reading and can at best be interpreted as a direct quote, that is, with the interpretation that Jan literally said "Hij was ziek".

(160) a. Jan heeft "ik ben ziek" tegen de leraar gezegd.
Jan has I am ill to the teacher said
'Jan has said "I'm ill" to the teacher.'
b. #Jan heeft hij was ziek tegen de leraar gezegd.
Jan has he was ill to the teacher said

In addition, the examples in (161) show that it is impossible to use semi-direct quotes as the complement of a noun.

(161) a. Jan beweerde: "ik ben ziek".
Jan claimed I am ill
a′. Jans bewering "Ik ben ziek" kwam als een nare verrassing.
Jan's assertion I am ill came as a nasty surprise
b. Jan beweerde hij was ziek.
Jan claimed he was ill
b′. *Jans bewering hij was ziek kwam als een vervelende verrassing.
Jan's assertion he was ill came as a nasty surprise

If *say*-clauses without resumptive *dat* are indeed parenthetical clauses, we expect that, just as in the case of direct quotes, we should find a wider range of examples that do not involve verbs of saying/thinking. This expectation is again borne out. A number of rather conventional examples are given in (162). As in (152), the quote cannot be analyzed as an argument of the verbs *beginnen* 'to start', *vervolgen* 'to continue', and *besluiten* 'to conclude' since these already have a direct object, *zijn verhaal* 'his story'. Analyzing the *say*-clauses as parentheticals seems the only option therefore.

(162) a. Hij moest, (zo) begon de schipper zijn verhaal, bij storm uitvaren.
he had.to thus started he skipper his story during storm out sail
'He had to set sail, (thus) the skipper started his story, during a gale.'
b. Zijn boot (zo) vervolgde de schipper zijn verhaal, was in gevaar.
his boat thus continued the skipper his story was in danger
'His boat, (thus) the skipper continued his story, was in danger.'
c. Dit, (zo) besloot de schipper zijn verhaal, redde hem van de dood.
this thus concluded the skipper his story saved him from the death
'This, thus the skipper concluded his story, saved him from death.'

C. Additional evidence for structural ambiguity

This subsection discusses a number of additional arguments, mainly taken from Corver (1994) and Corver & Thiersch (2003), in favor of the conclusion reached in the previous subsections that (semi-)direct reported speech constructions can be structurally ambiguous. Their point of departure is the observation in Reinhart (1983) that (semi-)direct reported speech constructions can also be semantically ambiguous; the *say*-clause may be either subject- or speaker-oriented. We will see that this semantic ambiguity correlates with the structural ambiguity discussed in the previous subsections.

1. Subject-oriented reading

The subject-oriented reading is triggered by questions such as (163a). The interrogative clause is transitive and directed towards the subject matter of the addressee's thoughts; the answer in (163b) therefore plausibly involves a transitive structure as well. The fact that the direct quote in (163b) may be replaced by the indirect quote in (163b′) provides additional support for this conclusion, given that Subsection I has established that an indirect quote also has the function of direct object.

(163) a. Wat denk je?
what think you
'What do you think?'
b. Ik vertrek om zeven uur, denk ik.
I leave at seven o'clock think I
b′. [Dat ik om zeven uur vertrek] denk ik.
that I at seven o'clock leave think I

2. Speaker-oriented reading

The speaker-oriented reading is triggered by questions such as (164a). The person asking the question is not interested in the addressee's thoughts but in information about a specific state of affairs. The person answering the question simply adds a parenthetical *say*-clause as a warning; he is not completely sure that his answer is/will come true. The suggestion that we are dealing with a parenthetical *say*-clause implies that the direct quote in (164b) is a main clause, and this correctly predicts that it cannot be replaced by an indirect quote, as the latter functions as an embedded clause; example (164b′) is not a felicitous answer to question (164a).

(164) a. Hoe laat vertrek je?
how late leave you
‘When will you leave?’
b. Ik vertrek om zeven uur, denk ik.
I leave at seven o′clock, think I
b′. #[dat ik om zeven uur vertrek], denk ik.
that I at seven o′clock leave think I

Note in passing, however, that the transitive construction *Ik denk dat ik om zeven uur vertrek* ‘I think that I will leave at seven o’clock’ would be a felicitous answer to (164). It is not entirely clear why this is possible and why a similar transitive reading of the *say*-clause is blocked for example (164b′).

3. Differences between the subject- and the speaker-oriented reading

Our suggestion that the subject- and speaker-oriented readings are associated with, respectively, transitive and parenthetical structures is supported by a number of additional facts, although it should be noted that judgments of the relevant examples are sometimes subtle. First, since we have seen that (semi-)direct quotes can only be split by parenthetical clauses, we predict that an example such as (165) cannot be used as an answer to the question *Wat denk je?* ‘What do you think?’ in (163a); it does seem that it can only be used as an answer to the question *Hoe laat vertrek je?* ‘At what time will you leave?’ in (164a).

(165) Ik vertrek, denk ik, om zeven uur.
I leave think I at seven o’clock

Secondly, we predict that the direct object clause will be semantically reconstructed in its original object position in the subject-oriented construction. This means that a referential expression like *Jan* that is embedded in the quote cannot be bound by, e.g., the subject of the *say*-clause because this would violate °binding condition C on referential expressions. This also seems to be the case: whereas the pronoun *hij* can readily be interpreted as coreferential with *Jan* in (166b), this seems excluded in example (166b′); see Reinhart (1983) for similar judgments on English. Of course, the intended interpretation is that *Jan* is the brother of the person answering the question.

(166) a. Wat zei je broer?
what said your brother
‘What did your brother say?’
b. *Hij* was ziek, zei *Jan*.
he was ill said Jan
b′. **Jan* was ziek, zei *hij*.
Jan was ill said he

Reconstruction is not relevant in the case of the speaker-oriented reading, and we therefore correctly predict that the question in (167a) can be answered by the primed (b)-example. Corver & Thiersch claim that the primeless (b)-example is marked as an answer to (167a). If so, this may follow from the fact that, apart from cases of reconstruction, referential expressions tend to precede pronouns that they are coreferential with.

(167) a. Waarom bibbert je broer zo?
why shivers your brother like.that
'Why is your brother shivering like that?'
b. $^{\%}$*Hij* was ziek, zei *Jan*.
he was ill said Jan
b′. *Jan* was ziek, zei *hij*.
Jan was ill said he

Corver & Thiersch provide similar evidence based on °bound variable readings of pronouns. Our prediction is that such readings are only possible if the *say*-clause is transitive, that is, if it has a subject-oriented reading. Corver & Thiersch claim that this is indeed borne out, but some speakers have difficulty with getting a bound variable reading in both cases. For this reason we have added a percentage sign to example (168a′).

(168) a. Wat zei iedereen?
what said everyone
'What did everyone say?'
a′. $^{\%}$*Hij* zou staken, zei *iedereen*.
he would go.on.strike said everyone
b. Waarom loopt iedereen weg?
why walks everyone away
'Why is everyone walking away?'
b′. **Hij* zou staken, zei *iedereen*.
he would go.on.strike said everyone

A final piece of evidence supporting the claim that subject- and speaker-oriented readings are associated with, respectively, the transitive and the parenthetical structure is provided in (169). The tag question ... *of toch niet?* is used as an afterthought expressing doubt on the part of the speaker about the preceding assertion: *De auto is kapot, ... of toch niet* 'The car is broken, ... or maybe not?' The (a)-examples in (169) show that the tag question can have scope over the entire preceding clause when we are dealing with the transitive, subject-oriented construction: the speaker expresses doubt about whether Jan did indeed say that the car was broken. In the (b)-examples, on the other hand, the tag question has scope over the quote only; the speaker expresses his doubt about whether the car was broken at all, not about whether Jan was his source of information. This contrast will follow from our proposal if parenthetical clauses are not part of the core information. The scope of the tag questions in (169) is indicated by italics.

(169) a. Wat zei Jan over die auto?
what said Jan about that car
‘What did Jan say about that car?’
a′. *Hij was kapot, zei Jan,* ... of toch niet?
he was broken said Jan, or PRT not
‘It was broken, said Jan, ... or did he not?’
b. Wat is er met die auto?
what is there with that car
‘What is the matter with that car?’
b′. *Hij was kapot,* zei Jan, ... of toch niet?
he was broken said Jan, or PRT not
‘It was broken, said Jan, ... or was it not?’

D. The structure of parenthetical (semi-)direct reported speech constructions

The discussion in the previous subsections has shown that analyzing the *say*-clauses such as (170) as parentheticals seems a feasible option. It is, however, far from clear what the internal structure of these parenthetical clauses is. Due to the fairly recent discovery that (semi-)direct reported speech constructions may involve parenthetical clauses, the issue has not received much attention in the literature so far.

(170) “Peter zal het boek morgen brengen”, (zo) zei Marie.
Peter will the book tomorrow bring thus said Marie
‘“Peter zal het boek morgen brengen”, Marie said.’

An analysis was proposed for English in Branigan & Collins (1993), Collins & Branigan (1997) and Collins (1997); it involves movement of a phonetically empty °operator that functions as the object of the verb of saying into the clause-initial position of the parenthetical *say*-clause. The desired interpretation is derived by assuming that the empty operator is coindexed with the quote. Applied to the Dutch cases, this would correctly account for the fact that the verb of saying is the first visible element in the parenthetical clause in (146a) as the first position of the clause is filled by a phonetically empty element.

(171) a. [Ik ben ziek]$_i$, [OP$_i$ zei Jan t_i].
b. [Hij was ziek]$_i$, [OP$_i$ zei Jan t_i].

However, the proposal in (171) does not account for the fact established in the previous subsections that the overt counterpart of the postulated empty operator is *zo* ‘so’, not *dat* ‘that’ (which in fact also holds for English). A proposal that would solve this problem can be found in Corver (1994) and Corver & Thiersch (2003), who assume that *zo* is phrasal and, in fact, contains a phonetically empty pronominal element *pro* functioning as a direct object; see De Vries (2006) for a similar intuition.

(172) a. [Ik ben ziek]$_i$, [[pro-zo]$_i$ zei Jan t_i].
b. [Hij was ziek]$_i$, [[pro-zo]$_i$ zei Jan t_i].

Although this proposal may raise all kinds of technical issues (like the fact that Dutch normally does not allow *pro* objects and that *pro* is not directly related by movement to the object position of the parenthetical clause), it would account for the fact that *het* cannot be present in parenthetical *say*-clauses. In structures such as (173) the direct object is expressed twice; once by *pro* and once by the pronoun *het*.

(173) a. *[Ik ben ziek]$_i$, [[pro-zo]$_i$ zei Jan het t_i].
b. *[Hij was ziek]$_i$, [[pro-zo]$_i$ zei Jan het t_i].

A potential problem for this proposal is that *zo* can sometimes be combined with a direct object; this was shown in (152) and (162) above where the (optional) noun phrase *zijn verhaal* 'his story' clearly functions as a direct object. In examples such as (151b), repeated below as (174b), a direct object is even obligatory: whereas the pronoun *het* can be left out in the (transitive) direct reported speech construction in (174a), it must be present in the construction with *zo* in (174b). If *zo* indeed contained an empty pronominal element, this would be surprising.

(174) a. Marie zei: "Peter zal het boek morgen komen brengen".
Marie said Peter will the book tomorrow come bring
b. Marie zei *(het) zo: "Peter zal het boek morgen komen brengen".
Marie said it thus Peter will the book tomorrow come bring

For completeness' sake, it should be noted that there are also (transitive) direct reported speech constructions with *zo* in which the pronoun can be left out. This is the case in constructions such as (175) containing discourse particles like *nog* and *maar*.

(175) a. Ik zei (het) nog zo; "je moet opletten voor die auto".
I said it PRT. so you must take.heed of that car
b. Ik zeg (het) maar zo: "morgen is er weer een dag".
I say it PRT. so tomorrow is there again a day

The discussion above seems to lead to the rather *ad hoc* assumption that in certain constructions *zo* obligatorily contains the empty pronoun *pro*, whereas in other constructions it cannot or only optionally do so. However, if we reject Corver & Thiersch' proposal for this reason, we have to conclude that we may leave the direct object of the verb *zeggen* unexpressed in examples like (149) and (150), despite the fact that example (138a) has shown that the verb *zeggen* normally cannot occur without a direct object. This position would be equally *ad hoc*. It shows that we do not yet have a fully satisfactory analysis for parenthetical *say*-clauses at our disposal. Since we have nothing more enlightening to say about this issue at the moment, we leave it for future research and simply conclude that direct and semi-direct reported speech constructions can be ambiguous.

III. Quotative and polar van-*constructions*

We conclude the discussion of reported speech with a look at quotative *van*-constructions such as (176), which are typically (but not exclusively) found in colloquial speech and informal writing; see Verkuyl (1977), Romein (1999), and, especially, Foolen et al. (2006). The literature often claims that the quotative preposition *van* is of a similar kind as the preposition *van* that we find in polar *van*-constructions such as (176b). For this reason, we will also discuss the latter construction in this subsection.

(176) a. Jan zei van ... kom morgen maar even langs.
Jan said VAN come tomorrow PRT along come
'Jan said something like: "Drop in tomorrow, if you like".'
b. Jan zei van niet/wel.
Jan said VAN not/AFF
'Jan denied/affirmed it.'

Observe that we do not use quotation marks in the quotative *van*-construction since we will see that it differs from the direct reported speech construction discussed in Subsection II in that it is not used to reproduce utterances literally.

A. Quotative van-*constructions*

This subsection investigates the quotative *van*-construction and is organized as follows. Subsection 1 discusses the internal make-up of the quotative *van*-phrase, Subsection 2 the meaning of the quotative *van*-construction as a whole, and Subsection 3 some of its syntactic properties. As we go along, we will point out a number of differences between quotative *van*-constructions and reported speech constructions without *van*.

1. The quotative van-*phrase*

Quotative *van*-constructions involve the QUOTATIVE PREPOSITION *van*, which is followed by an optional hesitation marker like *eh* 'er', an intonation break, and a quote. The examples in (177) show that the quote can be declarative or interrogative in nature; the reader can find many more interrogative examples on the internet by doing a Google search on, e.g., the strings [*vroeg van kan*] (... asked VAN be able ...) or [*vroeg van hoe*] (... asked VAN how ...).

(177) a. Marie dacht van (eh) ... hij komt straks wel weer terug.
Marie thought VAN er he comes later PRT again back
'Marie thought something like: "He'll probably come back later".'
b. Marie vroeg van (eh) ... kan je me even helpen?
Marie asked VAN er can you me for.a.moment help
'Marie asked something like: "Can you help me a moment?".'
b′. Marie vroeg van (eh) ... wie leest zo'n boek nou?
Marie asked VAN er who reads such.a book now
'Marie asked something like: "Who on earth reads a book like that?".'

The examples in (177) involve direct quotes but it is also possible to have indirect quotes. The examples in (178) show that the quotes can again be declarative or interrogative in nature; the reader can find many more interrogative examples on the internet by a Google search on, e.g., the strings [*vroeg van of*] (... asked VAN whether ...) or [*vroeg van hoe*] (... asked VAN how ...).

(178) a. Marie dacht van (eh) ... dat hij straks wel weer terug komt.
Marie thought VAN er that he later PRT again back comes
b. Marie vroeg van (eh) ... of ik eventjes kan helpen.
Marie asked VAN er whether I for.a.moment can help
b′. Marie vroeg van (eh) ... wie zo'n boek nou leest?
Marie asked VAN er who such.a book now reads

Quotative *van*-constructions frequently occur with verbs normally taking a direct quote in writing. Romein (1999) even suggests that the preposition *van* has a similar function as the colon in written language. It should be noted, however, that the quotative *van*-phrase may also be used as modifier/complement of non-verbal phrases that cannot be used in direct reported speech constructions without *van*; cf. Foolen et al. (2006). This will be clear from the difference in acceptability between the primeless and primed examples in (179).

(179) a. Hij zit daar met een gezicht van ... ik heb niets verkeerds gedaan.
he sits there with a face VAN I have nothing wrong done
'He sits there with a face expressing: "I haven't done anything wrong".'
a′. *Hij zit daar met een gezicht: "ik heb niets verkeerds gedaan".
he sits there with a face I have nothing wrong done
b. Hij had het idee van ... nu eventjes doorbijten!
he had the idea VAN now for.a.while keep.trying
'He had the idea: "Just grin and bear it for a while!".'
b′. *Hij had het idee: "Nu eventjes doorbijten!".
he had the idea now for.a.while keep.trying

2. *Meaning aspects of the quotative* van*-construction*

Direct reported speech constructions without *van* differ in another respect: the quote following quotative *van* need not be identical to the reported utterance or thought, but is presented as an approximation at best; cf. Van Craenenbroeck (2002) and Foolen et al. (2006: 142-3). This is clear from the fact illustrated in (180) that quotative *van*-phrases often co-occur with the indefinite pronoun *iets/zoiets* 'something'. Note that in (180a) the preposition *van* can be replaced by *als* 'like' if the construction contains a verb of speaking or thinking; this seems less felicitous in cases such as (180b), in which the quotative *van*-phrase functions as a modifier/complement of a nominal phrase.

(180) a. Hij dacht (zo)iets van/als ... dat vertik ik!
he thought something VAN/like that refuse.flatly I
'He thought something like "I'll be damn'd if I do that!".'
b. Hij had een houding van/$^{?}$als ... dat vertik ik!
he had an attitude VAN/like that refuse.flatly I
'His attitude was something like "I'll be damn'd if I do that!".'

That we are dealing with sloppy quotes may find additional support in the fact, illustrated in (181), that quotative *van* can easily be replaced by phrasal prepositions like *in de trant/geest van* and *op een manier van*, which are all semantically close to English *like*.

(181) a. Hij zei iets in de geest/trant van ... wat maakt het uit?
he said something in the spirit/manner of what makes it prt.
‘He said something like “What difference does it make?”.’
b. Hij keek op een manier van ... wat willen die mensen van me?
he looked in a manner of what want those people from me
‘He looked like he was thinking “What do these people want from me?”.’

In fact, the quote may even be invented by the speaker himself in order to give a subjective *typification* of some (aspect of) a person. This is what is the case in examples (179a) and (180b) above: the quote is used to provide a characterization of the presumed attitude of the person under discussion, and need not have anything to do with what that person actually said or thought. That we are nevertheless dealing with some sort of reported speech construction is clear from the fact that, just like in direct reported speech constructions without *van*, the part following *van* need not be well-formed Dutch, but can be virtually any sound; cf. Hoeksema (2006).

(182) a. De ober zei (iets) van ... Non monsieur! Pas possible!
the waiter said something VAN non monsieur pas possible
‘The waiter said something like “Non monsieur! Pas possible!”.’
b. De trein ging van ... tjoeke, tjoeke, tjoek.
the trein went VAN tjoeke, tjoeke, tjoek
‘The trein made a sound like “choo-choo-choo”.’

Note in passing that in Foolen et al. (2006) the approximate/typificational reading of the quotative *van*-construction is related to the fact that the preposition *van* may also have an approximate/typificational function in non-quotative constructions. This is illustrated in (183) by means of the phrasal predicate *iets (weg) hebben van* ‘to look like/resemble’.

(183) a. Hij heeft iets van Mick Jagger.
he has something VAN Mick Jagger
‘He reminds me of Mick Jagger in a way.’
b. Hij heeft iets weg van een filmster.
he has something away VAN a movie star
‘He looks a bit like a movie star.’

Related to the typificational reading of the quotative *van*-construction is that the quote is often some conventionalized expression providing a more or less generally recognizable characterization of some state of affairs. Some cases were provided earlier but in (184) we add two, slightly abbreviated, attested examples; the quote in (184b) is a fixed expression in Dutch. We refer to Foolen et al. (2006) for a more extensive discussion of the pragmatic and sociolinguistic aspects related to the actual use of the quotative *van*-construction.

(184) a. een wereldbeeld van je bent voor of tegen ons
a world.view VAN you are for or against us
‘a world view of the type: “You’re either for or against us”’
b. een sfeer van doe maar gewoon, dan doe je al gek genoeg
an atmosphere VAN do PRT. normally then do you already crazy enough
‘an atmosphere of the type: “be normal, then you’re being crazy enough as it is”’

That we are dealing with a *subjective* typification is clear from the fact that the quotative *van*-constructions are not compatible with factive predicates like *betreuren* in (185); cf. Van Craenenbroeck (2002). Since *betreuren* normally does not take a direct quote, we also give an example with an indirect quote.

(185) a. Jan zei/*betreurde (iets) van ... Ik ben ziek.
Jan said/regretted something VAN I am ill
b. Jan zei/*betreurde (iets) van ... dat hij ziek was.
Jan said/regretted something VAN that he ill was

3. Syntactic behavior of the quotative van-*phrase*

The quotative preposition *van* and the quote can be separated by an (optional) hesitation marker and an intonation break. Otherwise, however, they are always adjacent: it is not possible to place, e.g., adverbial material between the preposition and the quote or to separate them by movement. We illustrate the latter in (186) by means of topicalization; the trace t_i indicates the normal position of the quote.

(186) a. *[Ik ben ziek]$_i$ zei Jan (iets) van t_i.
I am ill said Jan something VAN
b. *[dat hij ziek was]$_i$ zei Jan (iets) van t_i.
that he ill was said Jan something VAN

Probably related to the adjacency requirement is that quotative *van*-constructions cannot be used as parenthetical clauses, as is shown by the contrast in (187); see also Van Craenenbroeck (2002).

(187) a. Jan is, zei Marie, al vanaf gisteren ziek.
Jan is, said Marie already since yesterday ill
'Jan has been ill since yesterday, said Marie.'
b. *Jan is, zei Marie iets van, al vanaf gisteren ziek.
Jan is, said Marie something VAN already since yesterday ill

Example (188a&b) show that quotative *van*-phrases are normally placed in the position following the verb in clause-final position; note that the indefinite pronoun *iets/zoiets* (if present) must precede the clause-final verb. The (c)-examples show that topicalization is normally not possible either, regardless of whether or not the preposition *van* is stranded.

(188) a. Hij zal wel (iets) denken van ... die is gek!
he will PRT something think VAN that.one is crazy
'He'll probably think something like: "That one is crazy!".'
b. $^{??}$Hij zal wel (iets) van ... die is gek! denken.
he will PRT something VAN that.one is crazy think
c. *Van ... die is gek! zal hij wel denken.
VAN that.one is crazy will he PRT think
c′. *Die is gek! zal hij wel (iets) denken van.
that.one is crazy will he PRT something think VAN

Another thing to note is that quotative *van*-constructions differ from (in)direct reported speech constructions in that they never contain an °anticipatory pronoun. This contrast is illustrated in (189).

(189) a. dat Jan het eindelijk vroeg: “Wil je met me trouwen!”
that Jan it finally asked want you with me marry
‘that Jan finally asked it: “Will you marry me!”.’
a′. dat Jan (*het) eindelijk vroeg van ... wil je met me trouwen.
that Jan it finally asked VAN want you with me marry
b. dat Jan het eindelijk vroeg of ze met hem wilde trouwen.
that Jan it finally asked whether she with him wanted.to marry
‘that Jan finally asked it if she would marry him.’
b′. dat Jan (*het) eindelijk vroeg van of ze met hem wilde trouwen.
that Jan it finally asked VAN whether she with him wanted.to marry

B. Polar van-*constructions*

This subsection discusses polar *van*-constructions such as (190a). The name of this construction derives from the fact that the complement of *van* is typically one of the polar adverbs *wel* and *niet*, which function, respectively, as affirmative marker and negation. We will compare a polar *van*-construction such as (190a) to a polar *van*-construction such as (190b) which involves the polar elements *ja* ‘yes’ and *nee* ‘no’; we will see that, although the two constructions look very similar at first sight, they exhibit a quite different behavior.

(190) a. Ik dacht van wel/niet. [polar *van wel/niet*-construction]
I thought VAN AFF/not
b. Ik dacht van ... ja/nee. [polar *van ja/nee*-construction]
I thought VAN yes/no

In order to make the comparison between the two polar *van*-constructions in (190) easier, Subsection 1 begins with a brief comparison of the syntactic behavior of polar *wel*/*niet* and polar *ja/nee* ‘yes/no’. This will show that the former normally functions as a constituent of a clause while the latter does not. Subsection 2 then continues with an investigation of a number of differences in use of the *van wel/niet*- and the *van ja/nee*-phrases. Subsection 3 goes on to discuss a number of syntactic properties of polar *van wel/niet*-phrases, and Subsection 4 concludes with a brief discussion of a suggestion in Hoeksema (2006) that the polar *van wel/niet*- and *van ja/nee*-constructions in (190) are special cases of, respectively, indirect and direct quotation.

1. The syntactic function of ja/nee *‘yes/no’ and* wel/niet

This subsection discusses several differences between *ja/nee* ‘yes/no’ and *wel*/*niet*. A first difference is that *ja* and *nee* are used in answering *yes*/*no*-questions, whereas *wel* and *niet* are adverbs used as an affirmation and a negation marker, respectively. The (b)-examples in (191) show that *ja*/*nee* and *wel*/*niet* crucially differ: the former can be used as independent utterances in response to a question whereas the latter cannot.

(191) a. Komt Jan morgen? [speaker A]
comes Jan tomorrow
'Will Jan come tomorrow?'
b. Ja/Nee.
yes/no
b′. *Wel/niet. [speaker B]
AFF/not

Another difference between *ja*/*nee* and *wel*/*niet* is that the former are never clausal constituents, whereas the latter must be. This is demonstrated by the (b)-and (c)-examples in (192) which show that *ja*/*nee* must precede the element in sentence-initial position, and must therefore be sentence-external. The polarity adverbs, on the other hand, always occupy a sentence-internal position, preferably in the middle field of some clause. The (b)- and (c)-examples in (192) are intended as answers to the question in (192a).

(192) a. Komt Jan morgen?
comes Jan tomorrow
b. Ja, ik denk dat hij komt.
yes, I think that he comes
'Yes, I think he will.
b′. Nee, ik denk dat hij niet komt.
No I think that he not comes
'No, I think he won't.'
c. Ik denk dat hij wel komt.
I think that he AFF comes
'I think he will.'
c′. Ik denk dat hij niet komt.
I think that he not comes
'I think he won't.'

Note in passing that the examples in (193) show that the elements *welles* and *nietes*, which are used to bring about a truth transition by contradicting some immediate preceding assertion in discourse, behave in this respect like *ja*/*nee* and not like *wel/niet*. Contrary to what is claimed by Hoeksema (2006:fn.2), the forms *welles* and *nietes* also occur in polar *van*-constructions, as is clear from, e.g., the following, completely natural example: *Jambers zegt van nietes, De Pauw zegt van welles waarop [...]* 'Jambers says it is the case, De Pauw says it is not, after which [...]' (Nieuwsblad.be, September 3, 2004). We will, however, not discuss *nietes* and *welles* here, but simply assume that at least for some speakers they behave like *ja* and *nee* in the relevant respects.

(193) a. Jan is niet hier.
Jan is not here
a′. Welles, ik zag hem net.
he.is I saw him just.now
'Jan isn't here. Yes, he is, I saw him just now.'
b. Jan is er al.
Jan is here already
b′. Nietes, hij belde net dat hij ziek is.
he.is.not he phoned just that he ill is
'Jan is already here. No, he isn't, he just phoned to tell that he's ill.'

The fact that the *ja*/*nee* cannot be used as clausal constituents leaves us with no other option than to analyze examples such as (190b) as quotative *van*-constructions with a direct quote. That the polar adverbs *wel*/*niet* do not occur as independent utterances (apart from cases of ellipsis) makes such an analysis unlikely for example (190a). This conclusion is supported by examples (194b&c); whereas *ja* and *nee* are quite normal as direct quotes in reported speech constructions without *van*, the polar adverbs *wel* and *niet* are not. We added the primed examples to show that *ja*/*nee* and *wel*/*niet* are possible in the corresponding *van*-constructions.

(194) a. Marie vroeg: “Komt Jan morgen?” [speaker A]
Marie asked comes Jan tomorrow
b. Ik antwoordde snel: “Ja/nee”. [speaker B]
I answered quickly yes/no
b′. Ik antwoordde snel van ja/nee.
c. *Ik antwoordde snel: “wel/niet”. [speaker B]
I answered quickly AFF/not
c′. Ik antwoordde snel van wel/niet.

The claim that the polar *van*-constructions with *ja*/*nee* are quotative *van*-constructions with a direct quote receives further support from example (195a), which shows that the complement of *van* can be supplemented with all kinds of other material. Example (195b), on the other hand, does not allow such supplements, which again suggests that *van*-constructions with *wel*/*niet* do not involve a direct quote.

(195) a. Ik dacht van ... ja/nee.
I thought VAN yes/no
a′. Ik dacht van ... ja/nee, (maar) dat wil ik ook!
I thought VAN yes/no but that want I also
b. Ik dacht van wel/niet.
I thought VAN AFF/not
b′. *Ik dacht van wel/niet, (maar) dat wil ik ook!
I thought VAN AFF/not that want I also

2. Differences in use between van ja/nee *and* van wel/niet *phrases*

The two polar *van*-constructions in (190), which are repeated below as (196), are subject to different conditions on their use as well. Whereas the *van*-construction with *ja*/*nee* in (196b) can be used in any situation in which it is relevant to report the speaker’s thoughts, the *van*-construction with *wel*/*niet* in (196a) is used in specific circumstances only.

(196) a. Ik dacht van wel/niet.
I thought VAN AFF/not
b. Ik dacht van ... ja/nee.
I thought VAN yes/no

In fact, the two constructions often seem to be in complementary distribution. A first illustration of this is provided by the question-answer pair in (197): example (197b) is infelicitous because it does not provide an answer to question (197a) but simply presents the speaker’s thoughts; example (197c), on the other hand, is completely natural as an answer to (197a).

(197) a. Komt Peter morgen? [question]
comes Peter tomorrow
‘Will Peter come tomorrow?’
b. $^{\$}$Ik denk van ja/nee. [answer]
c. Ik denk van wel/niet. [answer]

It is interesting to compare the question-answer pair in (197) to the one in (198) since this shows that we find a similar contrast between direct and indirect reported speech constructions. It seems to confirm that *van ja/nee* phrases function as direct quotes, and it might suggest that polar *van wel/niet* phrases have a status similar to that of an indirect quote.

(198) a. Komt Peter morgen? [question]
comes Peter tomorrow
'Will Peter come tomorrow?'
b. $^{\$}$Ik denk: "ja/nee". [answer]
I think yes/no
c. Ik denk dat hij wel/niet komt. [answer]
I think that he AFF/not comes
'I think that he will/won't.'

That the two polar *van*-constructions are in complementary distribution is also suggested by the discourse chunk in (199), which involves the denial of some presupposed truth. Again, the response in (199b) is not felicitous given that quotes are normally not the most suitable items to perform this function; the response in (199c), on the other hand, does have the intended effect of denying the presupposed truth of the proposition "Jan does not come tomorrow".

(199) a. Jan komt morgen niet. [speaker A]
Jan comes tomorrow not
'Jan won't come tomorrow.'
b. $^{\$}$Dat is niet waar. Hij zei daarnet nog van ja. [speaker B]
that is not true he said just/now still VAN yes
c. Dat is niet waar. Hij zei daarnet nog van wel. [speaker B]
that is not true he said just/now still VAN AFF
'That isn't true. He just told me that he would.'

The examples in (200) show again that direct quotes in direct reported speech constructions without *van* pattern with *van ja/nee*-phrases, whereas indirect quotes pattern with polar *van wel/niet*-phrases.

(200) a. Jan komt morgen niet. [speaker A]
Jan comes tomorrow not
'Jan won't come tomorrow.'
b. $^{\$}$Dat is niet waar. Hij zei daarnet nog: "Ja". [speaker B]
that is not true he said just/now still yes
c. Dat is niet waar. Hij zei daarnet nog dat hij wel komt. [speaker B]
that is not true he said just/now still that he AFF comes
'That isn't true. He just told me that he would.'

A final illustration of the complementary distribution of *van ja/nee*- and *van wel/niet*-phrases is given in (201), in which speaker B indicates that the information provided by speaker A clashes with the information available to him and, implicitly, that he will update his knowledge state.

(201) a. Jan komt morgen niet. [speaker A]
Jan comes tomorrow not
'Jan won't come tomorrow.'
b. $^{\$}$Bedankt, ik dacht van ja. [speaker B]
thank.you I thought VAN yes
c. Bedankt, ik dacht van wel. [speaker B]
thank.you I thought VAN AFF
'Thanks for telling me, because I thought he would.'

Again, the examples in (202) are again added to show that *van ja/nee*-phrases behave like direct quotes in reported speech constructions without *van*, whereas *van wel/niet*-phrases behave like indirect quotes.

(202) a. Jan komt morgen niet. [speaker A]
Jan comes tomorrow not
'Jan won't come tomorrow.'
b. $^{\$}$ Bedankt, ik dacht: "Ja". [speaker B]
thank.you I thought yes
c. Bedankt, ik dacht dat hij wel kwam. [speaker B]
thank.you I thought that he AFF came
'Thanks for telling me, because I thought he would.'

To summarize the findings above, we can say that the two *van*-constructions in (196) differ in that *van wel/niet*-phrases are normally used as a response to some question, as a denial of some presupposed truth, or to indicate a mismatch in information, whereas *van ja/nee*-phrases are simply used as direct quotes. A similar difference in use can be observed between indirect and direct reported speech without *van*, which may have led Hoeksema (2006) to the claim that, whereas *van*-constructions with *ja/nee* are instantiations of the direct quotative *van*-construction, polar *van*-constructions are instantiations of the indirect quotative *van*-construction. We return to this suggestion in Subsection 4 after having investigated some of the syntactic properties of *van wel/niet*-phrases.

3. Syntactic behavior of the van wel/niet-*phrases*

The previous subsection has established that direct quotes cannot be used to answer questions; see the discussion of (197) and (198). This means that we can use question-answer pairs to exclude unwanted intervention of direct quotative *van*-readings; this is what we will do in this subsection in order to investigate the syntactic behavior of polar *van wel/niet*-phrases in more detail. Paardekooper (1986: 149-50) has shown that the internal make-up of such phrases is quite rigid. First, the affirmative and negative adverbs *wel* and *niet* are part of a severely restricted paradigm. Although examples such as (203) with the epistemic modals *zeker* 'certainly' and *mogelijk* 'possibly' are sometimes taken to be acceptable, we were not able to find any clear cases on the internet; since we consider them degraded, we mark them with a number sign.

(203) a. Komt Jan straks? [*yes*/*no* question]
comes Jan later
b. #Ik denk van zeker/natuurlijk/misschien/mogelijk.
I think VAN certainly/naturally/maybe/possibly

The examples in (204) show that other adverbial phrases are also straightforwardly excluded, which implies that polar *van wel/niet*-constructions are not usable as answers to *wh*-questions, but always pertain to the truth or falsehood of some proposition.

(204) a. Wie komt er morgen? a′. *Ik denk van Jan. [*wh*-question]
who comes there tomorrow I think VAN Jan
‘Who is coming tomorrow?’
b. Wanneer komt Jan? b′. *Ik denk van straks. [*wh*-question]
when comes Jan I think VAN later
‘When will Jan come?’

The fact that polar *van wel/niet*-constructions must involve the truth or falsehood of some proposition immediately accounts for the fact, noticed both by Paardekooper (1986) and Hoeksema (2006), that polar *van wel/niet*-phrases require the verb to be non-factive; (205a) shows that polar *van wel/niet* with a factive verb like *betreuren* ‘to regret’ gives rise to a severely degraded result. A potential counterexample is *weten* ‘to know’ in (205b), which is normally factive but common in the *van wel/niet*-construction when combined with the adverb *zeker*; the reason for the contrast between the construction with and without *zeker* is that the collocation *zeker weten* can readily be interpreted non-factively as “to be convinced of”; see Hoeksema (2006: 142) for further discussion of more apparent exceptions.

(205) a. *Ik betreur van wel/niet.
I regret VAN AFF/not
b. Jan wist *(zeker) van wel/niet.
Jan knew for.sure VAN AFF/not

For completeness’ sake, the examples in (206) show that the factivity restriction also holds for non-verbal predicates. Non-factive *bang zijn* ‘to fear’ does allow a polar *van wel/niet*-phrase whereas factive *gek zijn* ‘to be strange’ does not.

(206) a. Ik ben bang dat ze Peter ontslaan. [non-factive]
I am afraid that they Peter fire
‘I’m afraid that they will fire Peter.’
a′. Ik ben bang van wel/niet.
I am afraid VAN AFF/not
b. Het is gek dat ze Peter ontslaan. [factive]
it is strange that they Peter fire
‘It is strange that they will fire Peter.’
b′. *Het is gek van wel/niet.
it is strange VAN AFF/not

Hoeksema (2006) collected a sample of verbs that may occur with a polar *van ja/nee*- or *van wel/niet*-phrase on the basis of 1.000 occurrences from written sources published after 1600. Most of these verbs occur infrequently in this construction; we have selected those verbs that occur at least five times in the corpus, resulting in Table (207) where the numerals indicate the number of instances found by Hoeksema. Unfortunately, Hoeksema does not distinguish the two constructions, and we have therefore added our own intuitions on whether the verb in question is more normal with a *van wel/niet* or a *van ja/nee* phrase: *w>j* indicates that *van wel/niet* is the preferred form, *j>w* indicates that *van ja/nee* is the preferred form, and *w* indicates that the use of a *van ja/nee*-phrase is infelicitous or even excluded. These judgments were confirmed by a more or less impressionistic investigation of the results of a Google search on the strings [*V van ja/nee*] and [*V van wel/niet*]. Table (207) supports Hoeksema's (2006:150ff.) conclusion from his diachronic investigation of polar *van*-constructions that the constructions with *van wel/niet*-phrases are much more common in present-day Dutch than constructions with *van ja/nee*-phrases (contrary to what was the case in earlier stages of the language).

(207) Frequently occurring verbs in *van ja/nee* and van *wel/niet* phrases

aannemen 'to assume'	16	w	*schijnen* 'to seem'	7	w
antwoorden 'to reply'	39	j>w	*schudden* 'to shake'	52	j>w
beweren 'to claim'	15	w	*vermoeden* 'to suspect'	16	w
denken 'to think'	208	w>j	*verzekeren* 'to assure'	5	w
dunken 'to think'	13	w>j	*volhouden* 'to maintain'	5	w
geloven 'to believe'	87	w>j	*vinden* 'to consider/think'	69	w
hopen 'to hope'	51	w	*vrezen* 'to fear'	35	w
knikken 'to nod'	34	j>w	*wedden* 'to bet'	6	w
menen 'to suppose'	57	w	*zeggen* 'to say'	104	w>j

Many of the verbs in Table (207) can also be used as °bridge verbs licensing extraction of a *wh*-phrase from their complement clause; see Table (331) in Section 5.1.5, sub I. Of course we expect this because such bridge verbs must also be non-factive, just like verbs taking a *van wel/niet*-phrase. It is interesting to note, though, that three out of the seven verbs that do not occur in the list of bridge verbs prefer a *van ja/nee*-phrase; we return to these verbs in Subsection 4.

Polar *van wel/niet*-phrases are also quite rigid when it comes to modification. Modal adverbs are occasionally judged as acceptable and also occur with a very low frequency on the internet, as was shown by a Google search (2/29/2012), on the string [*denk*$_{[\pm past]}$ *van* ADVERB *wel/niet*] for the adverbs *zeker* 'certainly', *misschien* 'maybe', *natuurlijk* 'naturally', *mogelijk* 'possibly' and *helaas* 'unfortunately'. We found that *zeker* is used to modify both *wel* and *niet*, *misschien* is used to modify *wel*, and *helaas* is used to modify *niet*. We did not find any cases in which the adverbs *natuurlijk* or *mogelijk* were used as modifiers. Other adverbs seem categorically excluded.

(208) a. Ik denk van zeker/natuurlijk wel. [attested cases]
I think VAN certainly/naturally AFF
b. Ik denk van zeker/helaas niet. [attested cases]
I think VAN certainly not
c. *Ik denk van morgen/hier wel/niet.
I think VAN tomorrow/here AFF/not

Paardekooper also observed that polar *van wel/niet*-phrases must follow the verbs in clause-final position. The contrast between the (b)-examples in (209) shows that they cannot occur in the middle field of the clause.

(209) a. Komt er een reorganisatie? [question]
comes there a reorganization
‘Will there be a reorganization?’
b. Jan liet duidelijk blijken dat hij dacht van wel. [answer]
Jan let clearly show that he thought VAN AFF
‘Jan made it perfectly clear that he though that there would be.’
b′. $^{??}$Jan liet duidelijk blijken dat hij van wel dacht.
Jan let clearly show that he VAN AFF thought

Moreover, the examples in (210) show that topicalization of polar *van wel/niet*-phrases also leads to a degraded result, regardless of whether the preposition *van* is stranded or not. See Hoeksema (2008) for the same observations.

(210) a. Ik denk van wel/niet.
I think VAN AFF/not
b. $^{*?}$Van wel/niet denk ik.
b′. *Wel/Niet denk ik van.

Paardekooper concluded from the immobility of polar *van wel/niet*-phrases that we are not dealing with regular quotes as these normally do allow topicalization. Subsection A has shown, however, that quotes from quotative *van*-constructions must also follow the verbs in clause-final position, and this still leaves open the possibility that polar *van*-constructions are indirect quotative *van*-constructions, as was indeed suggested in Hoeksema (2006).

4. Are polar van-*constructions quotative* van-*constructions?*

The previous subsections have shown that polar *van ja/nee*-constructions must be analyzed as direct quotative *van*-constructions constructions, leading to the prediction that this type of *van*-construction can only occur with verbs that may take direct quotes in reported speech without *van*. Hoeksema (2006) is probably correct in claiming that this expectation is borne out; the primed examples in (211) with *beweren* ‘to claim’ and *geloven* ‘to believe’ feel uncomfortable, and, although they do occur on the internet, they have a much lower frequency than the corresponding examples with *zeggen* ‘to say’ and *denken* ‘to think’. We indicate this by using the percentage mark.

(211) a. Jan zei/$^{??}$beweerde: “Peter is ziek”.
Jan said/claimed Peter is ill
a′. Jan zei/$^{\%}$beweerde van ja/nee.
Jan said/claimed VAN yes/no
b. Jan dacht/*geloofde: “Els is aardig”.
Jan thought/believed Els is nice
b′. Jan dacht/$^{\%}$geloofde van ja/nee.
Jan thought/ believed VAN yes/no

Hoeksema also suggests that polar *van wel/niet*-constructions are indirect quotative *van*-constructions, which is in keeping with the findings of Subsection 2 that indirect quotes behave like polar *van wel/niet* phrases in that they can be used as a response to some question, as a denial of some presupposed truth, or to indicate a mismatch in information. Furthermore, it correctly predicts that polar *van wel/niet* phrases can be used as the complement of verbs taking indirect quotes.

(212) a. Jan zei/beweerde dat Peter ziek was.
Jan said/claimed that Peter ill was
a′. Jan zei/beweerde van wel/niet.
Jan said/claimed VAN AFF/not
b. Jan dacht/geloofde dat Els aardig is.
Jan thought/believed that Els nice is
b′. Jan dacht/geloofde van wel/niet.
Jan thought/believed VAN AFF/not

The suggested analyses of the two polar *van*-constructions correctly account for the placement of the *van wel/niet*-phrases: examples (209)-(210) in Subsection 3 have shown that they behave like *van*-phrases in indirect quotative *van*-constructions since they obligatorily follow the verbs in clause-final position. A potential problem is that *van*-phrases in direct quotative *van*-constructions have the same property, and we would therefore predict that polar *van ja/nee*-phrases also need to follow the verbs in clause-final position. However, Hoeksema (2008:74ff.) found that this expectation is not borne out: in about 5% of the cases the *van ja/nee*-phrase may occur in the middle field of the clause. Hoeksema relates this to the fact that (short) direct quotes may occasionally also occur in the middle field of the clause; see Subsection IIA, for a discussion of such cases.

(213) a. dat Jan <van ja> zei <van ja>.
that Jan VAN yes said
b. dat Jan <“ja”> zei <”ja”>.
that Jan yes said

It seems that this suggestion can be supported by the examples in (214). The primeless examples show that the verbs *knikken* ‘to nod’ and *schudden* ‘to shake (one’s head)’ can only be combined with a direct quote if the latter precedes the verb in clause-final position, and our judgment of the primed examples show that the corresponding *van ja/nee*-phrase likewise prefers to precede the verbs in clause-final position. Our intuitions are confirmed by a Google search (3/2.2012) on the strings [<*van ja*> *geknikt* <*van ja*>] and [<*van nee*> *geschud* <*van nee*>], which showed that preverbal placement is more frequent than postverbal placement of the *van ja/nee*-phrase; the absolute numbers are given in square brackets.

(214) a. Jan heeft <“ja”> geknikt <*“ja”>.
Jan has yes nodded
a′. Jan heeft <van ja> geknikt <$^?$van ja>. [37/12]
Jan has VAN yes nodded
b. Jan heeft <”nee”> geschud <*“nee”>.
Jan has no shaken
b′. Jan heeft <van nee> geschud <$^?$van nee>. [24/4]
Jan has VAN no shaken

The discussion above has shown that there may indeed be reasons to think that the polar *van ja/nee*- and polar *van wel/niet*-constructions are special instantiations of, respectively, direct and indirect quotative *van*-constructions. However, the evidence so far is still a little scanty; a more detailed investigation may therefore be needed to provide a solid foundation for this idea.

5.1.3. Subject clauses

This section discusses subject clauses. That subject clauses are possible is strongly suggested by the fact that the primeless examples in (215), in which the verbs *zeggen* ‘to say’ and *vragen* ‘to ask’ take a direct object clause, can be passivized; the resulting primed examples are likely to have a subject clause.

(215) a. Jan zei [dat de bank beroofd was].
Jan said that the bank robbed was
‘Jan said that the bank had been robbed.’
a′. Er werd gezegd [dat de bank beroofd was].
there was said that the bank robbed was
‘It was said that the bank had been robbed.’
b. Marie vroeg [of de buit groot was].
Marie asked whether the catch big was
‘Marie asked whether the catch was big.’
b′. Er werd gevraagd [of de buit groot was].
there was asked whether the catch big was
‘It was asked whether the catch was big.’

The acceptability of the primed examples in (215) raises the question as to whether subject clauses can also be selected by active main verbs. Subsection I shows that although subject clauses do not occur with intransitive and transitive verbs, they do occur with unaccusative verbs, that is, verbs with a derived °DO-subject; from this we may safely conclude that subject clauses are always internal °arguments of the °matrix verb. Subsection II and III discuss, respectively, the position of subject clauses and the use of the anticipatory subject pronoun *het*.

I. Verb types

Generally speaking, subject clauses do not occur with intransitive and transitive verbs. The reason is that such verbs normally take an external argument with the function of agent. Given that clauses refer to propositions/questions/etc., and not to agentive entities, it is expected on semantic grounds that subject clauses cannot occur with such verbs. The examples in (216) show that using subject clauses with (in)transitive verbs indeed gives rise to complete gibberish.

(216) a. Jan lacht. a′. $^{\$}$Het lacht [dat Peter zingt].
Jan laughs it smiles that Peter sings
b. Jan eet spinazie. b′. $^{\$}$Het eet spinazie [dat Marie honger heeft].
Jan eats spinach it eats spinach that Marie hungry is

There are potential counterexamples to the claim that transitive verbs do not take subject clauses. Example (217a), for instance, shows that the transitive verb *bewijzen* 'to prove' can easily be combined with a clausal subject. Such cases are special, however, in that they involve factive clauses, that is, clauses the truth of which is presupposed by the speaker. Section 5.1.2.3 has shown that normally such clauses can be paraphrased by means of a noun phrase *het feit dat* ... 'the fact that ...', as in (217b), and that they exhibit a number of nominal properties.

(217) a. Het bewijst niets [dat Peter geen alibi heeft].
it proves nothing that Peter no alibi has
'It proves nothing that Peter has no alibi.'
b. Het feit [dat Peter geen alibi heeft] bewijst niets.
the fact that Peter no alibi has proves nothing
'The fact that Peter has no alibi proves nothing.'

Subject clauses are possible if they are internal arguments of the verb, as is clear from the fact that a transitive sentence such as (218a) is easy to passivize. The (b)-examples show that the passive counterpart of this sentence may either contain the °expletive *er* or the °anticipatory pronoun *het*: this is a reflex of the fact that the anticipatory pronoun is optional in (218a).

(218) a. dat Jan (het) zei [dat Peter een nieuwe auto gekocht had].
that Jan it said that Peter a new car bought had
'that Jan said (it) that Peter had bought a new car.'
b. Er werd (door Jan) gezegd [dat Peter een nieuwe auto gekocht had].
there was by Jan said that Peter a new car bought had
'It was said (by Jan) that Peter had bought a new car.'
b′. Het werd (door Jan) gezegd [dat Peter een nieuwe auto gekocht had].
it was by Jan said that Peter a new car bought had
'It was said by Jan that Peter had bought a new car.'

Since the examples in (218) show that °DO-subjects may be clausal, it should not come as a surprise that we also find subject clauses with unaccusative verbs. The examples in (219) show that this is quite common with NOM-DAT verbs; cf. Section 2.1.3. We illustrate this in the (a)-examples by means of a NOM-DAT verb that takes *zijn* in the perfect tense, and in the (b)-examples by means of a NOM-DAT verb that takes *hebben*.

(219) a. Het viel Marie erg tegen [dat Jan erover klaagde].
it disappointed Marie a.lot prt. that Jan about.it complained
‘It disappointed Marie terribly that Jan was complaining about it.’
a′. Het is Marie erg tegengevallen [dat Jan erover klaagde].
it is Marie a.lot prt.-disappointed that Jan about.it complained
b. Het bevreemde Marie zeer [dat Jan erover klaagde].
it surprised Marie much that Jan about.it complained
‘It surprised Marie greatly that Jan was complaining about it.’
b′. Het heeft Marie zeer bevreemd [dat Jan erover klaagde].
it has Marie much surprised that Jan about.it complained

Subject clauses are also common with psychological predicates that take an object experiencer; cf. Section 2.5.1.3. This holds both for (220a) with the psych-verb *ergeren* ‘to annoy’ and for (220b) with the periphrastic expression *kwaad maken* ‘to make angry’.

(220) a. Het ergerde Peter/hem [dat Els er niet was].
it annoyed Peter/him that Els there not was
‘It annoyed Peter/him that Els wasn’t present.’
b. Het maakte Peter/hem erg kwaad [dat Els er niet was].
it made Peter/him very angry that Els there not was
‘It made Peter very angry that Els wasn’t present.’

Note in passing that psych-verbs such as *ergeren* ‘to annoy’ and many NOM-DAT verbs are object experiencer verbs; consequently, they can be combined successfully with conditional *als*-clauses; see the examples in (221). Since Section 5.1.2.1, sub VI, has shown on the basis of similar examples with subject experiencer verbs that such *als*-clauses are not arguments of the verb, we need not elaborate on this here; as illustrated in the primed examples, the fact that preposed *als*-phrases can be followed by the resumptive element *dan* ‘then’ suggests that we are dealing with conditional adverbial clauses.

(221) a. Het valt me op als Jan erover klaagt. [NOM-DAT verb]
it is.conspicuous me prt. if Jan about.it complains
‘I notice it when Jan complains about it.’
a′. Als Jan erover klaagt (dan) valt me dat op.
if Jan about.it complains then is.conspicuous me that prt.
b. Het staat me erg tegen als Jan erover klaagt. [NOM-DAT verb]
it palls me much on if Jan about.it complains
‘It disgusts me if he complains about it.’
b′. Als Jan erover klaagt (dan) staat me dat erg tegen.
if Jan about.it complains then palls me that much on
c. Het ergert me als Els er niet is. [psych-verb]
it annoys me if Els there not is
‘It annoys me if Els isn’t present.’
c′. Als Els er niet is, (dan) ergert me dat.
if Els there not is then annoys me that

A conclusive argument for assuming that the *als*-phrases in (221) are not subject clauses is that the subject pronoun *dat* in the primed examples cannot be dropped when they occupy the sentence-initial position (that is, when *dan* ‘then’ is not present). The examples in (222) show that this is compulsory when run-of-the-mill subject clauses introduced by the complementizer *dat* ‘that’ occupy the initial position, for the simple reason that inclusion of the pronoun *dat* leads to a clause with two subjects.

(222) a. Dat Jan erover klaagt valt me (*dat) op.
that Jan about.it complains is.conspicuous me that prt.
b. Dat Jan erover klaagt staat me (*dat) erg tegen.
that Jan about.it complains stands me that much counter
c. Dat Els er niet is, ergert me (*dat).
that Els there not is annoys me that

Subject clauses are also very common if they function as the subject of copular constructions, as in (223a). This is expected because such subjects are not the external arguments of the copular, for the same reason that the direct object in the *vinden*-construction in (223b) is not an internal argument of *vinden*. In these two cases we are dealing with SUBJECTs of the °complementive; cf. Section 2.2.2.

(223) a. Het is vreemd [dat Els er niet is].
it is strange that Els there not is
‘It’s odd that Els isn’t present.’
b. Peter vindt het vreemd [dat Els er niet is].
Peter considers it strange that Els there not is

The copular constructions in (224) show that the adjective *bekend* may take either a declarative or an interrogative subject clause. The former is always possible, but the latter only occurs if the matrix clause is negative and/or interrogative. The complementizer *of* is used in the (b)-examples if the relevant decision has not been made public yet, the complementizer *dat* if the decision has been made public but has (not yet) reached the intended public.

(224) a. Het is al bekend [dat/*of Els de nieuwe voorzitter wordt].
it is already known that/whether Els the new chairman becomes
‘It is already known that Els will be the new Chair.’
b. Het is nog niet bekend [dat/of Els de nieuwe voorzitter wordt].
it is yet not known that/whether Els the new chairman becomes
‘It isn’t known yet that/whether Els will be the new Chair.’
b′. Is het al/nog niet bekend [dat/of Els de nieuwe voorzitter wordt]?
is it already/not yet known that/whether Els the new chairman becomes
‘Is it already/not yet known that/whether Els will be the new Chair?’

Again, it should be noted that we occasionally encounter *als*-clauses that can easily be misanalyzed as subject clauses. That we are not dealing with subject clauses here is clear from the fact, illustrated in (225), that such *als*-clauses differ from run-of-the-mill subject clauses introduced by the complementizer *dat* ‘that’ in that a subject pronoun must be present if the *als*-clause occupies the sentence-initial position; we must therefore be dealing with conditional clauses.

(225) a. Dat Els er niet is, is (*dat) vreemd.
that Els there not is is that strange
‘that Els isn’t present is strange.’
b. Als Els er niet is, is *(dat) vreemd.
if Els there not is is that strange
‘If Els isn’t present, that is strange.’

Finally, we want to point out subject clauses are possible with epistemic modal verbs; we will return to this in Section 5.2.2.2 and 5.2.3.2.

(226) a. Het kan [dat Peter morgen in Utrecht is].
it may.be.the.case that Peter tomorrow in Utrecht is
‘It may be the case that Peter will be in Utrecht tomorrow.’
b. Het schijnt [dat Peter morgen in Utrecht is].
it seems that Peter tomorrow in Utrecht is
‘It seems to be the case that Peter will be in Utrecht tomorrow.’

II. The placement of subject clauses

Subject clauses normally follow the verbs in clause-final position, as shown by the primed examples in (219), which are repeated here for convenience as (227).

(227) a. Het is Marie erg tegengevallen [dat Jan erover klaagde].
it is Marie a.lot prt.-disappointed that Jan about.it complained
‘It has disappointed Marie terribly that Jan complained about it.’
b. Het heeft Marie zeer bevreemd [dat Jan erover klaagde].
it has Marie much surprised that Jan about.it complained
‘It has surprised Marie greatly that Jan was complaining about it.’

Subject clauses may also occur in sentence-initial position, in which case they are optionally followed by the resumptive demonstrative pronoun *dat* ‘that’.

(228) a. [Dat Jan erover klaagde] (dat) is Marie erg tegengevallen.
that Jan about.it complained that is Marie a.lot prt.-disappointed
‘That Jan complained about it has disappointed Marie terribly.’
b. [Dat Jan erover klaagde] (dat) heeft Marie zeer bevreemd.
that Jan about.it complained that has Marie much surprised
‘That Jan complained about it has surprised Marie greatly.’

The examples in (229) show that it is not possible to have the subject clause in the °middle field of the clause; see De Haan (1974) and Koster (1978). The main clauses in the primeless examples have a non-subject in sentence-initial position and the subject clauses of (227) and (228) in the middle field; the primed examples provide the corresponding embedded clauses. Such examples are deemed ungrammatical.

(229) a. *Waarschijnlijk is [dat Jan erover klaagde] Marie erg tegengevallen.
probably is that Jan about.it complained Marie a.lot prt.-disappointed
a′. *dat [dat Jan erover klaagde] Marie erg tegengevallen is.
that that Jan about.it complained Marie a.lot prt.-disappointed is
b. *Waarschijnlijk heeft [dat Jan erover klaagde] Marie erg bevreemd.
probably has that Jan about.it complained Marie a.lot surprised
b′. *dat [dat Jan erover klaagde] Marie erg bevreemd heeft.
that that Jan about.it complained Marie a.lot surprised has

We should note, however, that the examples seem at least marginally acceptable if the clause is interpreted as factive: (*het feit) dat Jan erover klaagde*. If this is the case, it would not be surprising, considering that Section 5.1.2.3 has shown that factive clauses are more generally used in nominal argument positions. Example (230) provides instances in which the subject clause is more clearly factive, and we believe that these cases are indeed possible (provided that the clause does not become too lengthy).

(230) a. Natuurlijk bewijst [(het feit) [dat Peter geen alibi heeft]] absoluut niets.
of.course proves the fact that Peter no alibi has absolutely nothing
‘Of course, the fact that Peter has no alibi proves absolutely nothing.’
b. dat [(het feit) [dat Peter geen alibi heeft]] absoluut niets bewijst.
that the fact that Peter no alibi has absolutely nothing proves
‘that the fact that Peter has no alibi proves absolutely nothing.’

Koster (1978) concludes from the fact that subject clauses cannot occur in the regular subject position in the middle field of the clause that subject sentences do not exist. He also proposes that the clauses in (228) are not sentence-internal, but function as sentence-external satellites that bind a (possibly phonetically empty) subject pronoun; actually, according to Koster, we are dealing with a kind of °left-dislocation constructions. If we assume that pronouns are moved from the regular subject position into sentence-initial position, examples such as (228a) are analyzed as in (231a) if the demonstrative pronoun is present, and as in (231b) if it is not.

(231) a. [Dat Jan erover klaagde]$_i$ [$_{sentence}$ dat$_i$ is t_i Marie erg tegengevallen].
b. [Dat Jan erover klaagde]$_i$ [$_{sentence}$ pro$_i$ is t_i Marie erg tegengevallen].

Koster’s proposal was challenged in Klein (1979). An important reason is that the prosody of the examples with and without the resumptive pronoun *dat* differ markedly: while in the former case the clause is normally separated from the sentence by an intonation break, the clause can be prosodically integrated in the sentence in the latter case, as indicated in (232), in which the comma indicates the obligatory intonation break.

(232) a. [Dat Jan erover klaagde], dat is Marie erg tegengevallen.
b. [Dat Jan erover klaagde] is Marie erg tegengevallen.

If Klein’s conclusion that the clause in (232b) is sentence-internal is correct, we should account for the fact that the clause cannot occur in the regular subject position in the examples in (229) by claiming that clauses cannot surface in nominal argument positions. This is in fact the same conclusion drawn for object clauses in Section 5.1.2.2, sub III, to which we refer the reader for further discussion. We will investigate the pros and cons of Koster's proposal in our discussion of topicalization in Section 11.3.2.

III. The anticipatory pronoun het *and expletive* er

Like object clauses, subject clauses cannot be preposed in sentences that contain the °anticipatory pronoun *het*, as shown in (233b). This would follow immediately from Koster's left-dislocation analysis as the object pronoun must be replaced by the resumptive pronoun *dat* or its phonetically empty counterpart *pro*. The structures in (231) show that the position of *het* in (233b) is already occupied by a °trace.

(233) a. Het is Marie erg tegengevallen [dat Jan erover klaagde].
it is Marie a.lot prt.-disappointed that Jan about.it complained
'It has greatly disappointed Marie that Jan complained about it.'
b. [Dat Jan erover klaagde] is (*het) Marie erg tegengevallen.
that Jan about.it complained is it Marie a.lot prt.-disappointed

The analysis must be slightly different if we accept Klein's conclusion that the subject clause occupies the sentence-initial position if the demonstrative pronoun *dat* is not present. We then have to assume that the subject clause has not been moved into clause-initial position in one fell swoop but has moved via the regular subject position; the anticipatory pronoun is then blocked given that the subject position is occupied by a trace of the clause. See Section 5.1.2.2, sub III, for a more extensive discussion of this option.

The (b)-examples in (234) show that subject clauses cannot be preposed in clauses that contain expletive *er* either; *er* can only be interpreted as an adverbial phrase of place in these examples. The reason for this is different, however, than in the case of *het*; expletive *er* can only be used if the subject is part of the °focus (new information) of the clause, whereas preposed subject clauses are normally interpreted as being part of the presupposition of the clause.

(234) a. Er is gebleken [dat de software goed werkt].
there is turned.out that the software well works
'It has turned out that the software is working well.'
b. [dat de software goed werkt] dat is ($^{\#}$er) gebleken.
that the software well works that is there turned.out
b′. [dat de software goed werkt] is ($^{\#}$er) gebleken.
that the software well works is there turned.out

The option of having the anticipatory pronoun *het* or the expletive *er* is not only affected by the position of the subject clause. In examples with a °complementive, the position of the secondary predicate may also be relevant. With a sentence-initial predicate *het* is preferably dropped and *er* becomes completely impossible.

(235) a. Het/Er is duidelijk geworden [dat Jan de nieuwe voorzitter wordt].
it/there is clear become that Jan the new chairman becomes
‘It has become clear that Jan will become the new chairman].’
b. Duidelijk is ($^?$het) geworden [dat Jan de nieuwe voorzitter wordt].
clear is it become that Jan the new chairman becomes
b′. Duidelijk is (*er) geworden [dat Jan de nieuwe voorzitter wordt].
clear is there become that Jan the new chairman becomes

The examples in (236) show that we may find the same phenomenon in perfect-tense constructions with °monadic unaccusative verbs taking subject clauses like *blijken* ‘to turn out’: with topicalized participles, *het* and *er* cannot be properly realized. Examples with *het* and *er* do occur on the internet but are very rare.

(236) a. Het/Er is gebleken [dat vette vis gezond is].
it/there is turned.out that oily fish healthy is
‘It has turned out that oily fish is healthy.’
b. Gebleken is ($^?$het) [dat vette vis gezond is].
turned.out is it that oily fish healthy is
b′. Gebleken is ($^?$er) [dat vette vis gezond is].
turned.out is there that oily fish healthy is

Although we are not aware of any theoretical account for the markedness of the primeless (b)-examples in (235) and (236), we hypothesize that examples of this type involve some kind of locative inversion of the type we find in English. Den Dikken and Næss (1993) have argued that in examples like *Down the hill rolled a baby carriage* the predicative PP *down the hill* has been topicalized via the regular subject position, and that the subject occupies its base position in the °small clause headed by the moved predicate; [$_{CP}$ Down the hill$_i$ [$_{TP}$ t_i rolled [$_{SC}$ the baby carriage t_i]]]. If we assume something similar for examples such as (235b), insertion of the pronoun *het* may be blocked given that the regular subject position is occupied by a trace of the moved predicate. A potential problem for this analysis is that this leaves unexplained why insertion of *het* seems to be marginally possible. Furthermore, it remains to be seen whether an analysis of this sort can be extended to examples such as (236b). The the degraded status of the primed (b)-examples can again be related to the information structure of the clause if °left dislocation/topicalization of the predicate is only possible if it is part of the presupposition of the clause. We leave it to future research to investigate whether proposals along these lines are viable.

Example (218) in Subsection I has shown that in passive constructions the choice between *het* and *er* is related to the question as to whether the object clause in the corresponding passive construction can be combined with the anticipatory pronoun *het*. It seems that, as in English, clause-final subject clauses in active sentences can always be introduced by anticipatory *het* and that in many cases they can also be combined with expletive *er*. The semantic difference between the two options is not always clear, but we may suppose that the choice between the two options depends on whether the subject clause is presented as part of the presupposition or the focus of the sentence. A Google search (1/27/2012) shows that the frequencies of *het* and *er* in examples such as (237) are both high.

(237) a. Het is duidelijk geworden dat ... [presupposition]
it is clear become that
‘It has become clear that ...’
b. Er is duidelijk geworden dat ... [focus]
there is clear become that
‘It has become clear that ...’

An appeal to the information structure of the sentence seems supported by examples like those in (238). Given that interrogative clauses are less likely to be interpreted as presuppositional than declarative clauses, we expect examples such as (238a) to be extremely rare (despite being definitely grammatical). A Google search (3/22/2013) on this string shows that this expectation is indeed borne out: it resulted in no more than 4 hits. Strings such as (238b), on the other hand, are very frequent.

(238) a. Het werd gevraagd of ... [presupposition]
it was asked whether
‘It was asked whether ...’
b. Er werd gevraagd of ... [focus]
there was asked whether
‘It was asked whether ...’

Given the result of our Google searches mentioned above, one would also expect the frequency of examples such as (239a) to be much lower than examples such as (239b). This expectation is, however, not borne out: we found 225 cases of the two strings in (239a) and only 13 of the two strings in (239b).

(239) a. Het is niet/nooit duidelijk geworden of ...
it is not/never clear become whether
‘It has not/never become clear whether ...’
b. Er is niet/nooit duidelijk geworden of ...
there is not/never clear become whether
‘It has not/never become clear whether ...’

The results of our Google searches on the examples in (239) show that there must be other factors, yet to be identified, that must be involved in the choice between *het* and *er*. One factor that springs to mind is that the choice is related to the type of predicate, but we leave this for future research.

5.1.4. Prepositional object clauses?

This section on finite prepositional object (PO-)clauses is relatively short given that many of their properties and of the °anticipatory pronominal PPs introducing them have been discussed in Section 2.3. PO-clauses never have the form of main clauses and come in two types: declarative clauses introduced by the complementizer *dat* ‘that’ or interrogative clauses introduced by the complementizer *of* ‘whether’ or some *wh*-phrase. Some examples are given in (240). The question as to whether a declarative or an interrogative clause will be used depends on the verb: a verb like *klagen (over)* ‘to complain (about)’ in (240a) selects a declarative clause, whereas the verb *twijfelen (over)* in the (b)-examples selects an interrogative clause.

(240) a. dat Jan (erover) klaagde [dat Marie hem steeds plaagt]. [declarative]
that Jan about.it complained that Marie him always teases
‘that Jan complained about it that Marie teases him all the time.’
b. dat Jan (erover) twijfelt [of hij het boek zal lezen]. [interrogative]
that Jan about.it is.in.doubt whether he the book will read
‘that Jan is in doubt about whether he’ll read the book.’
b′. dat Jan (erover) twijfelt [welk boek hij zal lezen]. [interrogative]
that Jan about.it is.in.doubt which book he will read
‘that Jan is in doubt about which book he’ll read.’

The examples in (240) show that clause-final PO-clauses can be introduced by an anticipatory pronominal PP in the °middle field of the clause. Depending on the verb in question, this PP can be optional or obligatory. The former holds for the verbs in (240) and the latter for the verbs in (241). An extensive sample of PO-verbs that can or cannot drop the anticipatory pronominal PP can be found in Section 2.3.1, sub VI.

(241) a. dat Jan *(ervan) geniet [dat hij rijk is].
that Jan of.it enjoys that he rich is
‘that Jan enjoys it that he’s rich.’
b. dat Jan *(erop) rekent [dat Marie zal komen].
that Jan on.it counts that Marie will come
‘that Jan counts on it that Marie will come.’

PO-clauses can be left-dislocated, in which case the anticipatory pronoun is replaced by a resumptive pronominal PP in the form of *daar + P*. This is illustrated in (242) for the examples in (240); the (discontinuous) resumptive PP is given in italics.

(242) a. [Dat Marie hem steeds plaagt], *daar* klaagde Jan *over*.
that Marie him always teases there complained Jan about
b. [Of hij het boek zal lezen], *daar* twijfelt Jan *over*.
whether he the book will read there is.in.doubt Jan about
‘Whether he’ll read the book, that Jan is in doubt about.’
b′. [Welk boek hij zal lezen], *daar* twijfelt Jan *over*.
which book he will read there is.in.doubt Jan about

Although some speakers seem to allow omission of the pronominal part of the resumptive PP, most people reject this. This is indicated in (243), in which *pro* stands for the empty/deleted resumptive pronominal part, by means of a percentage sign.

(243) a. %[dat Marie hem steeds plaagt] *pro* klaagde Jan *over*.
that Marie him always teases complained Jan about
b. %[of hij het boek zal lezen] *pro* twijfelt Jan *over*.
whether he the book will read is.in.doubt Jan about
‘Whether he’ll read the book, Jan doubts.’
b′. %[Welk boek hij zal lezen] *pro* twijfelt Jan *over*.
which book he will read is.in.doubt Jan about

Note in passing that the fact that most speakers do not accept examples such as (243) may be a potential problem for Koster’s proposal discussed in Sections 5.1.2.2, sub III, and 5.1.3, sub II, the substance of which was that apparent sentence-initial object and subject clauses are actually left-dislocated and that the first position of the sentence is in fact filled by an empty pronominal element *pro*. If the resumptive pronoun can be phonetically empty in the case of subject and object clauses, why is this excluded for most speakers in the case of PO-clauses? Note also that the examples in (243) do not improve if the prepositional part of the resumptive pronominal PP is left out. Although some speakers may perhaps marginally accept examples such as (244), they contrast sharply with the examples without an anticipatory PP in (240), which are fully grammatical.

(244) a. $^{??}$[Dat Marie hem steeds plaagt] klaagde Jan.
that Marie him always teases complained Jan
b. $^{*?}$[Of hij het boek zal lezen] twijfelt Jan.
whether he the book will read is.in.doubt Jan
‘that Jan is in doubt whether he’ll read the book.’
b′. $^{*?}$[Welk boek hij zal lezen] twijfelt Jan.
which book he will read is.in.doubt Jan

PO-clauses cannot be placed in the middle field of the clause, irrespective of whether or not an anticipatory PP is present. PO-clauses normally do not occur as part of the PP-complement of the verb either; examples such as (245) are quite marked compared to examples such as (240), which is indicated here by means of a question mark (although Section P2.4.1.1, discusses a number of exceptional circumstances that do seem to license PPs of the sort in (245)).

(245) a. $^{?}$dat Jan klaagde [$_{PP}$ over [dat Marie hem steeds plaagt]].
that Jan complained about that Marie him always teases
b. $^{?}$dat Jan twijfelt [$_{PP}$ over [of hij het boek zal lezen]].
that Jan is.in.doubt about whether he the book will read
b′. $^{?}$dat Jan twijfelt [$_{PP}$ over [welk boek hij zal lezen]].
that Jan is.in.doubt about which book he will read

We want to conclude by noticing that there are *als*-clauses that can easily be erroneously analyzed as PO-clauses; We refer the reader to Paardekooper (1986:1.18.9, B2) for a concrete case of such a misanalysis, but we will use example (246a) for reasons of representation. The two examples in (246a) differ, however, in that the *als*-clause but not the *dat*-clause can be followed by *dan* ‘then’ if the *als-clause* occurs on the first position of the utterance, suggesting that we are dealing with a conditional adverbial clause. This suggestion is supported by the fact that there is a sharp difference between the two variants of example (246c), in which the clauses appear as part of the PP-complement: whereas the *dat*-clause gives rise to a marked but interpretable result, the *als*-clause gives rise to an unacceptable and uninterpretable result.

(246) a. Jan klaagt er altijd over [dat/als het regent].
Jan complains there always about that/if it rains
'Jan always complains about it that/if it rains.'
b. [Als/*dat het regent], dan klaagt Jan er altijd over.
if/that it rains then complains Jan there always about
'If it rains, Jan is always complaining about it.'
c. Jan klaagt altijd [$_{PP}$ over [$^{?}$dat/*als het regent]].
Jan complains always about that/if it rains
Literally: 'Jan always complains about that it rains.'

A final argument for assuming that the *als*-clause is a conditional adverbial clause is that it can occupy the sentence-initial position while the anticipatory pronominal PP *erover* is present; if the *als*-clause were a PO-clause, we would end up with two prepositional objects within a single clause. Analyzing the *als*-clause as a conditional adverbial phrase, on the other hand, is unproblematical given that we may then give (247a) a similar analysis as (247b).

(247) a. [Als het regent] klaagt Jan er altijd over.
if it rains complains Jan there always about
'If it rains, Jan is always complaining about it.'
b. [Als het regent] klaagt Jan altijd over reuma.
if it rains complains Jan always about rheumatism
'If it rains, Jan is always complaining about rheumatism.'

For more discussion of the incorrect analysis of conditional *als*-clauses as argument clauses we refer the reader to Sections 5.1.2.1, sub VI, to 5.1.3, sub I, for similar cases in the domain of object and subject clauses.

5.1.5. Fragment clauses

Fragment clauses cannot be immediately recognized as such because they do not contain an overt finite verb and, consequently, look like phrases of some non-verbal category. There are two types of fragment clauses: FRAGMENT *WH*-QUESTIONS and FRAGMENT ANSWERS. Examples of the former are given in the primed examples in (248), which show that fragment *wh*-questions can plausibly be analyzed as phonetically reduced finite interrogative clauses.

(248) a. Jan heeft gisteren iemand bezocht. [speaker A]
Jan has yesterday someone visited
'Jan visited someone yesterday.'
a′. Wie ~~heeft Jan gisteren bezocht~~? [speaker B]
who has Jan yesterday visited
'Who (did he visit yesterday)?'
b. Jan heeft Marie bezocht. [speaker A]
Jan has Marie visited
'Jan has visited Marie'
b′. Wanneer ~~heeft Jan Marie bezocht~~? [speaker B]
when has Jan Marie visited
'When (did Jan visit Marie)?'

Ross (1967) derived fragment *wh*-questions by means of a deletion operation that he referred to as SLUICING, and fragment *wh*-questions are therefore also known as sluicing constructions; the suppressed information is indicated here by means of strikethrough. At first sight, the deletion seems licensed simply by the presence of some antecedent clause in the preceding discourse, which contains some (implicit) correlate of the *wh*-phrase constituting the fragment *wh*-question, but our discussion below will bear out that on closer scrutiny the situation is more complex.

The examples in (249) show that fragment answers may arise in conversation as a response to *wh*-questions; the suppressed information is again indicated by strikethrough.

(249) a. Wat heeft Jan gisteren gekocht? [speaker A]
what has Jan yesterday bought
'What did Jan buy yesterday?'

a′. Een nieuwe computer ~~heeft Jan gisteren gekocht~~. [speaker B]
a new computer has Jan yesterday bought
'A new computer (Jan bought yesterday).'

b. Wanneer heeft Jan die nieuwe computer gekocht? [speaker A]
when has Jan that new computer bought
'When did Jan buy that new computer?'

b′. Gisteren ~~heeft Jan die nieuwe computer gekocht~~. [speaker B]
yesterday has Jan that new computer bought
'Yesterday (Jan bought that new computer).'

The non-reduced clauses corresponding to the fragment clauses in the examples above are grammatical but less felicitous, for reasons of economy, given that the suppressed information can easily be reconstructed from the context; usually the preceding discourse contains some antecedent clause which provides the information suppressed in the fragment clause. Nevertheless, we cannot *a priori* assume that the deletion analysis suggested above is correct, especially because it runs into several problems. Establishing that we are dealing with some kind of reduction will therefore be an essential part of our discussion of fragment clauses. After having established this, we will discuss the properties of fragment clauses in greater detail. Fragment *wh*-questions are discussed in Subsection I and fragment answers in Subsection II.

I. Fragment wh-*questions (sluicing)*

The examples in (250) show that fragment *wh*-questions do not only occur as independent utterances but also as subparts of clauses. If we are indeed dealing with reduced clauses, this would show that sluicing can apply to °matrix and embedded clauses alike.

(250) a. Jan heeft gisteren iemand bezocht. [speaker A]
Jan has yesterday someone visited
'Jan visited someone yesterday.'

a′. Kan je me ook zeggen wie ~~Jan gisteren bezocht heeft~~? [speaker B]
can you me also tell who Jan yesterday visited has
'Can you tell me who (Jan visited yesterday)?'

b. Jan heeft gisteren iemand bezocht, maar ...
Jan has yesterday someone visited but
... ik weet niet wie ~~Jan gisteren bezocht heeft~~?
I know not who Jan yesterday visited has
‘Jan visited someone yesterday, but I don’t know who.’

The following subsections discuss fragment *wh*-questions in more detail. Subsection A begins by showing that fragment *wh*-questions are indeed clauses, and that we must therefore assume that some sort of sluicing operation is at work here. This need not imply, however, that sluicing must be seen as a deletion operation. Subsection B shows that there are at least two ways of analyzing sluicing, which in fact both face a number of challenges. Subsection C continues by investigating to what extent the interpretatively present but phonetically non-expressed part of the fragment *wh*-question must be isomorphic to some antecedent clause. Subsection D investigates the correlate of the *wh*-phrase in the antecedent clause. Subsection E concludes with a number of specific examples that may involve sluicing.

A. Fragment wh-*questions are clauses*

This subsection reviews the evidence in favor of the claim that fragment *wh*-questions are really clauses. We will follow the literature in mainly discussing examples of the sort in (250b), but this is not a matter of principle; similar arguments can be given on the basis of examples such as (250a′).

1. Selection restrictions

A first argument for claiming that fragment *wh*-questions are clauses is based on the selection restrictions imposed by the verb on its complements; embedded fragment *wh*-questions can only occur with predicates that select interrogative clauses. The primeless examples in (251) illustrate that verbs like *weten* ‘to know’ and *zien* ‘to see’ may take an interrogative clause and the primed examples show that they may likewise take an embedded fragment *wh*-question. Examples such as (251a′) are especially telling given that the verb *weten* ‘to know’ can only be combined with a severely limited set of noun phrases, and noun phrases referring to objects are certainly not part of this set (contrary to what is the case with its English counterpart *to know*): cf. *Ik weet het antwoord/*dat boek* ‘I know the answer/that book’.

(251) a. Ik weet [wat Jan gekocht heeft].
I know what Jan bought has
‘I know what Jan has bought.’

a′. Jan heeft iets gekocht maar ik weet niet *wat*.
Jan has something bought but I know not what
‘Jan bought something but I don’t know what.’

b. Ik zag [wie er wegrende].
I saw who there away-ran
‘I saw who ran away.’

b′. Er rende iemand weg en ik zag ook *wie*.
there ran someone away and I saw also who
‘Someone ran away, and I also saw who.’

The examples in (252) show that verbs like *beweren* ‘to claim’, which do not select interrogative clauses, cannot be combined with fragment *wh*-questions either.

(252) a. *Marie beweert [wat Jan gekocht heeft].
Marie claims what Jan bought has
b. *Peter denkt dat Jan iets gekocht heeft *(en Marie beweert *wat*).
Peter thinks that Jan something bought has and Marie claims what

2. Coordination

A second argument for assuming that fragment *wh*-questions are clauses can be based on coordination: given that coordination is normally restricted to phrases of the same categorial type, the fact that full clauses fragment *wh*-questions can be coordinated with fragment *wh*-questions suggests that the first are also clauses.

(253) a. Jan vroeg me [[waar ik gewoond had] en [*hoe lang*]].
Jan asked me where I lived had and how long
‘Jan asked me where I had lived and for how long.’
b. Ik weet niet [[wat hij gedaan heeft] of [waarom]].
I know not what he done has or why
‘I don’t know what he has done or why.’

3. Case assignment

A third argument is based on case assignment: the *wh*-phrase constituting the overt part of the fragment *wh*-question in (254a) is assigned the same case as the corresponding phrase in the antecedent clause and not the case normally assigned by the embedding predicate. One must keep in mind, however, that cases like these may be misleading as they may involve N-ellipsis on top of sluicing. An argument in favor of such an analysis is that the possessive pronoun *wiens* in (254b) does not have a syntactic correlate in the antecedent clause, whereas the noun phrase *wiens auto* does.

(254) a. Jan heeft iemands boek gelezen, maar ik weet niet *wiens*.
Jan has someone’s book read but I know not whose
‘Jan has read someone’s book but I don’t know whose.’
b. Er staat een auto op de stoep, maar ik weet niet *wiens*.
there stands a car on the pavement but I know not whose
‘There is a car on the pavement but I don’t know whose.’

Since Dutch has overt case marking on pronominal possessives only, we cannot provide any better evidence than cases such as (254), but Merchant (2001/2006) provides a number of examples from German (and other languages) that involve nominal arguments. Although the verb *wissen* ‘to know’ governs °accusative case, the *wh*-phrase that constitutes the fragment *wh*-question in (255) has °dative case just like the complement of the verb *schmeicheln* ‘to flatter’ in the antecedent clause.

(255) Er will jemandem$_{dat}$ schmeicheln, aber sie wissen nicht *wem*$_{dat}$/**wen*$_{acc}$.
he wants someone flatter but they know not who/who
‘He wants to flatter someone, but they don’t know who.’

4. Syntactic distribution/placement of fragment wh-*questions*

The most important argument for claiming that fragment *wh*-questions are clauses involves the syntactic distribution of embedded fragment *wh*-questions like *Wie?* ‘Who?’ or *Wat?* ‘What?’. If such fragment *wh*-questions were noun phrases, we would expect them to have the distribution of nominal phrases and hence to appear before the clause-final verbs. If, on the other hand, such fragment *wh*-questions are clauses, we expect them to occur in the normal position of clauses, that is, after the clause-final verbs. The examples in (256) therefore unambiguously show that fragment *wh*-questions are clauses.

(256) a. Jan heeft iets gekocht en ik denk dat ik weet *wat*.
Jan has something bought and I think that I know what
‘Jan has bought something and I think that I know what.’
b. *Jan heeft iets gekocht en ik denk dat ik *wat* weet.
Jan has something bought and I think that I what know

The examples in (257) show that, like regular object clauses, fragment *wh*-questions functioning as direct object can only occur to the left of the clause-final verbs if they are topicalized or left-dislocated. The relevant sluicing construction is given in the second conjunct of (257b).

(257) a. [Wat hij gekocht heeft] (dat) weet ik niet.
what he bought has that know I not
‘What he bought, (that) I don’t know.’
b. Hij heeft iets gekocht, maar *wat* (dat) weet ik niet.
he has something bought but what that know I not
‘He bought something but what (that) I don’t know.’

5. The anticipatory pronoun het

Yet another argument involves the distribution of the anticipatory pronoun *het*. We would expect this pronoun to be possible if fragment *wh*-questions are clauses, but not if they are some non-verbal category. The examples in (258) show that the results are somewhat mixed: the (a)-examples show that fragment *wh*-questions functioning as objects cannot co-occur with the anticipatory pronoun *het*, whereas the (b)-examples show that fragment *wh*-questions functioning as subjects can.

(258) a. Ik weet (het) nog niet [wie er morgen komt].
I know it yet not who there tomorrow comes
‘I don’t know yet who is coming tomorrow.’
a′. Er komt morgen iemand, maar ik weet (*het) nog niet *wie*.
there comes tomorrow someone but I know it yet not who
‘Someone will be coming tomorrow, but I don’t know yet who.’
b. Het is nog niet duidelijk [wie er morgen komt].
it is yet not clear who there tomorrow comes
‘It isn’t clear yet who will come tomorrow.’
b′. Er komt morgen iemand, maar het is nog niet duidelijk *wie*.
there comes tomorrow someone but it is yet not clear who
‘Someone will be coming tomorrow, but it isn’t clear yet who.’

A possible account for the contrast between the two primed examples in (258) may be that fragment *wh*-questions are always part of the °focus (new information) of the clause, as is clear from the fact that they are always assigned focus accent. Section 5.1.1, sub III, has shown that the anticipatory object pronoun *het* tends to trigger a presuppositional reading of the object clause; so it may be that combining it with a fragment *wh*-question results in an incoherent information structure, which may account for the judgment given in (258a′). Although Section 5.1.3, sub III, has shown that the anticipatory subject pronoun *het* can sometimes likewise trigger a presuppositional reading of the subject clause, there are also many cases in which this effect does not arise; this means that the information structure of example (258b′) may be fully coherent, regardless of whether the anticipatory pronoun is present or not. We leave it to future research to establish whether this account of the contrast between the two primed examples in (258) is tenable, but conclude for the moment that the acceptability of the anticipatory pronoun *het* in examples such as (258b′) provides support for the claim that fragment *wh*-questions are clauses.

6. Left dislocation

The argument on the basis of the anticipatory pronoun can be replicated in a slightly more straightforward form on the basis of °left-dislocation constructions such as (259); the primed examples show that the resumptive pronoun *dat* 'that' is possible with fragment *wh*-questions, irrespective of the latter's function.

(259) a. [Wie er morgen komt] dat weet ik nog niet.
who there tomorrow comes that know I not yet
'Who is coming tomorrow, that I don't know yet.'
a′. Er komt morgen iemand, maar *wie* dat weet ik nog niet.
there comes tomorrow someone but who that know I yet not
'Someone will be coming tomorrow, but who, that I don't know yet.'
b. [Wie er morgen komt] dat is nog niet duidelijk.
who there tomorrow comes that is yet not clear
'Who is coming tomorrow, that isn't clear yet.'
b′. Er komt morgen iemand, maar *wie* dat is nog niet duidelijk.
there comes tomorrow someone but who that is yet not clear
'Someone will be coming tomorrow, but who, that isn't clear yet.'

It should be noted that the possibility of left dislocation strongly disfavors the nominal analysis of fragment *wh*-questions. First, example (260) shows that left dislocation is normally excluded with wh-phrases.

(260) a. Wat (*dat) wil je kopen?
what that want you buy
'What do you want to buy?'
b. Welke boeken (*die) wil je kopen?
which books these want you buy
'Which books do you want to buy?'

Second, the primeless examples in (261) show that resumptive pronouns normally exhibit number agreement with left-dislocated noun phrases, whereas the primed examples show that left dislocation of fragment *wh*-clauses involves the invariant form *dat* ‘that’, that is, the form normally found with left-dislocated clauses.

(261) a. Het boek, dat wil ik kopen.
the book that want I buy
a′. Jan wil een boek kopen, maar *welk*$_{sg}$ dat weet ik niet.
Jan wants a book buy but which that know I not
b. De boeken, die/*dat wil Jan kopen.
the books those/that want Jan buy
b′. Jan wil wat boeken kopen, maar *welke*$_{pl}$ dat/*die weet ik niet.
Jan wants some books buy, but which that/these know I not

7. Nominalization

Nominalization also provides evidence for the claim that fragment *wh*-questions are clauses. First, the (a)-examples in (262) show that nominal objects of verbs normally appear as *van*-PPs in the corresponding nominalizations; cf. N2.2.3.2. Second, the (b)-examples show that object clauses are never preceded by a preposition. The fact that the nominalization in (262b′) does not contain the preposition *van* thus shows that fragment clauses are not nominal, but clausal.

(262) a. Jan rookt sigaren.
Jan smokes cigars
a′. [Het roken *(van) sigaren] is ongezond.
the smoking of cigars is unhealthy
b. Marie vroeg [waarom Jan sigaren rookt].
Marie asked why Jan cigars smokes
‘Marie asked why Jan smokes cigars.’
b. Marie vroeg *waarom*.
Marie asked why
b′. de vraag [waarom Jan sigaren rookt]
the question why Jan cigars smokes
‘the question as to why Jan smokes cigars’
b′. de vraag *waarom*
the question why

8. Subject-verb agreement

The final argument again pertains to fragment *wh*-questions functioning as subjects. If fragment *wh*-questions are really clauses, we expect finite verbs to exhibit (default) singular agreement throughout, whereas we would expect finite verbs to agree in number with nominal fragment *wh*-questions if they are not. The examples in (263) show that the former prediction is the correct one; finite verbs are always singular even if the fragment *wh*-question has the form of a plural noun phrase.

(263) a. Het is niet duidelijk [welke boeken Jan wil hebben].
it is not clear which books Jan wants.to have
‘It isn’t clear which books Jan wants to have.’
a′. Jan wil wat boeken hebben, maar het is/*zijn niet duidelijk *welke*.
Jan wants.to some books have but it is/are not clear which
‘Jan wants to have some books, but it isn’t clear which.’

b. [Welke boeken Jan wil hebben] is niet duidelijk.
which books Jan wants.to have is not clear
'Which books Jan wants to have isn't clear.'

b′. Jan wil wat boeken hebben, maar *welke* is/*zijn niet duidelijk.
Jan wants some books have but which is/are not clear
'Jan wants to have some books, but which ones isn't clear.'

B. What is Sluicing?

The previous subsection has shown that there is overwhelming evidence in favor of the claim that fragment *wh*-questions are clausal in nature, and hence that something like sluicing must exist. Let us assume the standard generative claim discussed in Section 9.1 that embedded finite interrogative clauses have the CP/TP structure in (264a), and that the *wh*-element occupies the position preceding the (phonetically empty) complementizer indicated by C. Sluicing can then be derived in at least two ways: the phonetic content of TP might be deleted under identity with its antecedent clause in the preceding discourse, or the TP might be phonetically empty right from the start and function as a pro-form that can be assigned an interpretation on the basis of its antecedent clause. The two options have been indicated in the (b)-examples in (264), in which strikethrough stands for deletion of the phonetic content of the TP and *e* for an empty pro-form replacing TP.

(264) a. Ik weet niet [$_{CP}$ wat$_i$ C [$_{TP}$ Jan gekocht *t*$_i$ heeft]].
I know not what Jan bought has
'I don't know what Jan has bought.'

b. Ik weet niet [$_{CP}$ wat$_i$ C [$_{TP}$ ~~Jan gekocht t$_i$ heeft~~]].

b′. Ik weet niet [$_{CP}$ wat C [$_{TP}$ e]].

We will not attempt to compare the two analyses here, but confine ourselves to mentioning a series of problems that must be solved by any proposal that claims that fragment *wh*-questions are CPs with a phonetically empty TP; readers who are interested in a comparison of the two analyses are referred to Merchant (2001/2006), who also discusses a number of other proposals, such as the idea that fragment *wh*-questions are reduced *wh*-cleft-constructions: *Wat ~~is het dat Jan gekocht heeft~~* 'What is it that Jan has bought?'. Because it is easier for reasons of exposition, we will follow Merchant's (2001/2006) *wh*-movement + TP deletion approach in (264b) in our structural representations, without intending to imply, however, that we consider this approach superior or inferior to the TP pro-form approach.

1. Sluicing is possible in wh-questions only

A first problem that should be accounted for is that sluicing is generally impossible outside the domain of fragment *wh*-questions. This is illustrated in the (a)-examples in (265): the first conjunct *Jan is hier* may not give rise to sluicing in the declarative object clause in the second conjunct, although it can be pronominalized by means of the pronoun *het*/*dat*. The same thing is illustrated in the (b)-examples which involve an embedded *yes*/*no* question. The unacceptability of the primeless examples shows that we need to formulate certain non-trivial conditions on the application of sluicing to ensure that it gives rise to fragment *wh*-questions only.

(265) a. *Jan is hier maar Peter mag niet weten [dat ~~hij hier is~~]
Jan is here but Peter is.supposed.to not know that he here is
a′. Jan is hier maar Peter mag het/dat niet weten
Jan is here but Peter is.supposed.to it/that not know
‘Jan is here but Peter isn’t supposed to know it/that,’
b. *Jan komt misschien maar niemand weet zeker [of ~~hij komt~~].
Jan comes maybe but nobody knows for.sure whether he comes
b′. Jan komt misschien maar niemand weet het/dat zeker.
Jan comes maybe but nobody knows it/that for.sure
‘Jan may be coming but nobody knows it/that for certain.’

For completeness’ sake, example (266b) shows that sluicing is not possible in the domain of *wh*-exclamatives either.

(266) a. Het is ongelooflijk [wat een boeken Els geschreven heeft]!
it is incredible what a books Els written has
‘It is incredible how many books Els has written!’
b. *Els heeft veel geschreven; het is vooral ongelooflijk *wat een boeken*.
Els has a.lot written it is especially incredible what a books

2. The overt part does not include elements in the C-position

A second problem that should be solved is that fragment *wh*-questions normally cannot contain material that is not part of the *wh*-phrase. Some speakers of Dutch allow the overt realization of the complementizer *of* in embedded clauses, but, contrary to what is to be expected on the basis of the analyses in (264), example (267a′) shows that the complementizer does not surface in embedded fragment *wh*-questions. The (b)-examples further show that, under the standard analysis that finite verbs occupy the C-position in interrogative main clauses, it would predict wrongly that non-embedded fragment *wh*-questions like *Wat?* ‘What?’ should contain a finite verb.

(267) a. Ik weet niet [$_{CP}$ wat$_{i}$ of [$_{TP}$ hij t_i zei]].
I know not what COMP he said
‘I don’t know what he said.’
a′. *Hij zei iets maar ik weet niet [$_{CP}$ wat$_{i}$ of [$_{TP}$ ~~hij t_i zei~~]].
he said something but I know not what COMP he said
‘He said something but I don’t know what.’
b. Hij zei iets.
he said something
b′. *[$_{CP}$ Wat [$_{C}$ zei] [$_{TP}$ ~~hij t_i t_v~~]]?
what said he

Naturally, the ungrammaticality of the primed examples in (267) may be solved by assuming that sluicing affects the sequence C + TP, but this assumption is less desirable given that deletion and pronominalization normally involve maximal

°projections. If we want to stick to this standard assumption, the analyses in (264) require additional stipulations to be made; see cf. Merchant (2001:281ff.).

3. The overt part sometimes includes TP-internal material

The third problem is in a sense the reverse of the second one: if sluicing involves deletion or pronominalization of the TP projection, we wrongly predict that TP-internal material will never surface. A first case that proves that this is wrong has to do with multiple questions. Example (268a) shows that, like in English, Dutch multiple questions allow at most one *wh*-phrase in the CP projection, which predicts that fragment *wh*-questions also consist of at most one *wh*-phrase. The (b)-examples in (268) show, however, that the presumed TP-internal *wh*-phrase in multiple wh-questions must be overtly expressed in fragment questions: leaving it out leads to unacceptability; we refer the reader to Merchant (2001:285ff.) for a more detailed discussion of this issue.

(268) a. Ik weet $[_{CP}$ wie$_{i}$ C $[_{TP}$ t_i gisteren wat las]].
I know who yesterday what read
'I know who read what yesterday.'
b. Iedereen las gisteren iets maar ik weet niet *wie wat*.
everyone read yesterday something but I know not who what
b′. *Iedereen las gisteren iets maar ik weet niet *wie*.
everyone read yesterday something but I know not who

It may be relevant in this connection that although multiple questions can be straightforward main clauses, non-embedded multiple fragment *wh*-questions are very marked. This is illustrated in the examples in (269).

(269) a. Wie heeft wat gelezen?
who has what read
'Who read what?'
b. A: Iedereen heeft iets gelezen. B: $^{*?}$Wie wat?
A: everyone has something read B: who what
'Everyone has read something. Who what?'

A second case, not mentioned in Merchant (2001/2006), involves constructions with °floating quantifiers. The examples in (270) show that although the Dutch floating quantifiers *nog meer* 'else' and *allemaal* 'all' must appear TP-internally in embedded interrogative clauses, they nevertheless seem to survive sluicing. Note that the problem does not occur in English given that the quantifiers may be adjacent to the wh-phrase in regular *wh*-questions; cf. Merchant (2006:122).

(270) a. Ik ben vergeten $[_{CP}$ wie <*nog meer> C $[_{TP}$ er <nog meer> waren]].
I am forgotten who else there were
'I've forgotten who else were there.'
a′. Jan was er, maar ik ben vergeten *wie nog meer*.
Jan was there but I am forgotten who else
'Jan was there but I've forgotten who else.'

b. Ik ben vergeten [$_{\text{CP}}$ wie <*allemaal> C [$_{\text{TP}}$ er <allemaal> waren]].
I am forgotten who all there were
'I've forgotten who all were there.'
b′. Er waren veel mensen, maar ik ben vergeten *wie allemaal*.
there were many people but I am forgotten who all
'There were many people but I've forgotten who all.'

The primed (a)- and (b)-examples in (271) show that we find the same facts in main clauses. In fact, the primed (c)-examples seem to show that it is even possible in such cases to construct fragment *wh*-questions that contain adverbial-like material.

(271) a. Wie <*nog meer> waren er <nog meer>?
who else were there
a′. A: Jan was er. B: Leuk! Wie nog meer?
A: Jan was there B: nice who else
b. Wie <*allemaal> waren er <allemaal>?
who all were there
b′. A: Er waren veel mensen. B: Leuk! wie allemaal?
A: there were many people B: nice who all
c. Wie <*dan> heeft hij <dan> uitgenodigd?
who then has he prt.-invited
'Who did he invite then?'
c′. A: Jan heeft een speciale gast uitgenodigd. B: O, wie dan?
A. Jan has a special guest prt.-invited B: o who then
'Jan has invited a special guest. O, who then?'

4. Sluicing is not island-sensitive

We conclude our list of potential problems with the fact that has received most attention in the literature, namely, that sluicing is not °island-sensitive. In short, the problem is that there are fragment *wh*-questions for which it is not immediately clear that they can be derived by means of *wh*-movement followed by TP deletion, because *wh*-movement is blocked in the corresponding non-reduced *wh*-questions. First consider the examples in (272a&b), which show that relative clauses are °islands for *wh*-extraction. If non-embedded fragment *wh*-questions are derived by deletion of the TP of the matrix clause, we expect that (272c) could not be used to enquire more closely as to the nature of the thing stolen, but this is clearly wrong as this fragment *wh*-question would be an entirely natural response to the assertion in (272a).

(272) a. Jan ontmoette iemand [$_{\text{REL-CLAUSE}}$ die iets gestolen had].
Jan met somebody who something stolen had
'Jan met someone who had stolen something.'
b. *Wat$_i$ ontmoette Jan iemand [$_{\text{REL-CLAUSE}}$ die t_i gestolen had]?
what met Jan somebody who stolen had
c. Wat?
what

The examples in (273a&b) illustrate the so-called °coordinate structure constraint, according to which *wh*-extraction from a coordinate structure is impossible. If non-embedded fragment *wh*-questions were derived by deletion of the TP of the matrix clause, we would expect that (273c) could not be used to ask who the second person involved was, but again this is clearly wrong as this fragment *wh*-question would be a natural response to the statement in (273a).

(273) a. Zij heeft gisteren [[Peter] en [nog iemand anders]] ontmoet.
she has yesterday Peter and yet someone else met
‘She met Peter and one other person yesterday.’
b. *Wie$_i$ heeft zij gisteren [[Peter] and [t_i]] ontmoet?
who has she yesterday Peter and met
c. Wie?
who

The examples in (274) illustrate the so-called *wh*-island constraint, according to which *wh*-extraction from an embedded interrogative clause is impossible. We see again that fragment *wh*-questions are not sensitive to this type of island as the fragment *wh*-question in (274c) would again be an entirely natural response to the sentence in (274a).

(274) a. Marie weet [wie iets gestolen heeft].
Marie knows who something stolen has
‘Marie knows who has stolen something.’
b. *Wat$_i$ weet Marie [wie t_i gestolen heeft]?
what knows Marie who stolen has
‘Marie knows who has stolen what?’
c. Wat?
what

The examples in (275) show that while *wh*-movement from adverbial °adjunct clauses is prohibited, fragment *wh*-questions are not sensitive to it: the fragment *wh*-question (275c) is a completely natural response to what is asserted in (275a).

(275) a. Marie is boos op Jan [$_{\text{ADJUNCT}}$ omdat hij iets gestolen heeft].
Marie is angry at Jan because he something stolen has
‘Mary is angry at Jan because he has stolen something.’
b. *Wat$_i$ is Marie boos op Jan [$_{\text{ADJUNCT}}$ omdat hij t_i gestolen heeft].
what is Marie angry at Jan because he stolen has
c. Wat?
what

Examples (272) to (275) make it patently clear that fragment *wh*-questions are not sensitive to islands for *wh*-extraction. Although Merchant (2001/2006) mentions many more cases, we will add one slightly more problematic example of potential island-insensitivity, which involves extraction of attributive modifiers from noun phrases. Although such extractions are normally not possible in Dutch *wh*-questions, fragment *wh*-questions consisting of APs that correlate with an attributive modifiers in their antecedent clause are normally judged acceptable by

Dutch speakers; they generally prefer Merchant's example in (276b) to the one in (276b′), in which the full noun phrase is pied-piped (and the noun *man* may be omitted as the result of N-ellipsis).

(276) a. Zij hebben een lang-e man aangesteld, maar ik weet niet ...
they have a tall-AGR man hired but I know not
'They've hired a tall man, but I don't know ...'
b. ... hoe lang/*lang-e.
how tall/tall-AGR
b′. $^{??}$... een hoe lange (man).
a how long man

A potential problem for the *wh*-movement + TP deletion approach is, however, that the extracted adjective, which is supposed to have an attributive function, does not exhibit the expected attributive *-e* inflection. Moreover, some of our informants indicate that even the use of the non-inflected adjective in (276b) is marked (just like the German speakers consulted by Merchant). It is therefore not entirely clear whether it is fully justified to use examples such as (276b) as an illustration of the island-insensitivity of sluicing.

To conclude our discussion of the island-insensitivity of sluicing, we want to note that Merchant found one case in which Dutch fragment *wh*-questions seem to be island-sensitive: fragment *wh*-questions do obey the language-specific constraint on preposition stranding. First of all, the examples in (277b) show that *wh*-movement of *wh*-phrases from PPs is normally impossible in Dutch. Preposition stranding is only possible (and actually preferred) if we are dealing with a pronominal PP, that is, a PP consisting of an R-word and a preposition, like *waarnaar* 'to what' in (277c); we refer the reader to P5 for a detailed discussion of this.

(277) a. Jan luistert graag naar Peter/de radio.
Jan listens gladly to Peter/the radio
'Jan likes to listen to Peter/the radio.'
b. *Wie$_i$ luister Jan graag naar t_i? b′. [Naar wie]$_i$ luistert Jan graag t_i?
who listens Jan gladly to to whom listens Jan gladly
c. Waar luistert Jan graag naar t_i? c′. $^{(?)}$Waarnaar$_i$ luistert Jan graag t_i?
where listens Jan gladly to where-to listens Jan gladly
'What does Jan like to listen to?' 'What does Jan like to listen to?'

If fragment *wh*-questions are not island-sensitive, we would expect that none of the sluiced counterparts of the questions in (277) need to include the preposition. The examples in (278) show, however, that the preposition is preferably expressed if the question word is a pronoun, and (perhaps even more surprisingly) obligatory if the question word is an R-word. We refer the reader to Subsection E for the discussion of one notable exception to the generalization that the *wh*-remnant preferably includes the preposition.

(278) a. Jan luistert naar iemand, maar ik weet niet $^{?}$(*naar*) *wie*.
Jan listens to someone but I know not to whom
'Jan is listening to someone, but I don't know who.'
b. Jan luistert ergens naar, maar ik weet niet *waar**(*naar*).
Jan listens somewhere to but I know not where-to
'Jan is listening to something, but I don't know what.'

Other cases of apparent island-sensitivity are provided in (279) and involve adverbial degree modification. First, consider the (a)-examples, which show that degree modifiers like *hoe* 'how' must pied-pipe the adjective *kwaad* in regular *wh*-questions. The fact that the adjective *kwaad* cannot be omitted in the corresponding fragment question in the primed example is of course surprising if fragment *wh*-questions are not island-sensitive. The (b)-examples provide somewhat more complex cases in which the element *hoe* 'how' is part of the more elaborate degree modifier *hoe zwaar* 'how very', which can itself be extracted from the adjective *hoe zwaar behaard* "how very hairy'.

(279) a. Hoe <kwaad> is Jan <*kwaad>?
how angry is Jan
a′. Jan is kwaad, maar ik weet niet hoe *(kwaad).
Jan is angry but I know not how angry
b. Hoe <zwaar> is Jan <*zwaar> behaard?
how very is Jan hairy
'How hirsute is Jan?'
b′. Jan is zwaar behaard, maar ik weet niet hoe *(zwaar).
Jan is very hairy but I know not how severely

C. The antecedent clause need not be isomorphic to the phonetically empty TP

On the assumption that a fragment *wh*-question contains a phonetically empty TP, we may expect that the empty TP would be syntactically/semantically similar to the TP of the antecedent clause: deletion normally applies under syntactic identity, and pro-forms receive an interpretation on the basis of some phrase in the preceding discourse. This expectation is not borne out, however.

1. No syntactic isomorphism

Dutch is a very suitable language for illustrating that the phonetically empty TP is not syntactically isomorphic to the TP of its antecedent clause because of the °verb-second phenomenon found in main clauses: whereas finite verbs are clause-final (=TP-internal) in embedded clauses, they are in second position in interrogative main clauses (which is standardly assumed to be the C-position). Consequently, if the phonetically empty TP in a fragment *wh*-question must have the same syntactic structure as the TP of the antecedent clause, we expect that embedded fragment *wh*-questions can only take an embedded clause as their antecedent clause, whereas independent fragment *wh*-questions can only take a main clause as their antecedent clause. The examples in (280) show that this expectation does not come true: the main clause *Er is iemand in de kamer* 'there is someone in the room' in the (a)-examples can be the antecedent of both independent and embedded fragment *wh*-

questions, and the same thing holds for the embedded clause *dat er iemand in de kamer is* ‘that there is someone in the room’ in the (b)-examples.

(280) a. A. Er is iemand in de kamer. B. *Wie*?
A. there is someone in the room B. who
a′. A. Er is iemand in de kamer. B. Weet je ook *wie*?
A. there is someone in the room B. know you also who
‘There is someone in the room. Do you know who?’
b. A. Ik zie dat er iemand in de kamer is. B. *Wie*?
A. I see that there someone in the room is B. who
‘I see that there is someone in the room. Who?’
b′. A. Ik zie dat er iemand in de kamer is. B. Kan je ook zien *wie*?
A. I see that there someone in the room is B. can you also see who
‘I see that there is someone in the room. Can you see who?’

2. No semantic isomorphism

The previous subsection has shown that there is no syntactic isomorphism between the fragment *wh*-question and the antecedent clause. In fact, example (281a) reveals that is not even required that the two have an isomorphic semantic representation; the phonetically empty TP in the fragment *wh*-question is not interpreted in such a way that it contains the modal *willen* ‘to want’ that we find in the antecedent clause—the interpretation rather involves a modal meaning normally expressed by *kunnen* ‘can’ or *moeten* ‘must’. A similar example can be found in (282a).

(281) a. Ik wil de fiets wel repareren maar dan moet je me vertellen *hoe*.
I want the bike prt repair but then must you me tell how
‘I’m willing to repair the bike, but then you have to tell me how.’
b. hoe ≠ hoe ik de fiets wel wil repareren ‘how I am willing to repair the bike’
b′. hoe = hoe ik de fiets kan/moet repareren ‘how I can/should repair the bike’

(282) a. Ik zou je graag helpen, maar ik weet niet *hoe*.
I would you gladly help but I know not how
‘I’d like to help you, but I don’t know how.’
b. hoe ≠ hoe ik je graag zou helpen ‘how I would like to help you’
b′. hoe = hoe ik je kan helpen ‘how I can help you’

An example of a slightly more complex nature is (283). In reply to a pupil’s remark in (283a), a teacher may react by saying (283b), in which it is clear that the elided part cannot be isomorphous to what the pupil said given that the anaphor *mezelf* cannot be bound by the interrogative pronoun *wie*: cf. *Wie heeft zichzelf/*mezelf nog niet opgegeven* ‘who did not yet enroll?’.

(283) a. Mijnheer, ik heb mezelf nog niet opgegeven voor deze cursus.
master I have REFL yet not enrolled for this course
‘Master, I haven’t enrolled yet for this course.’
b. Zo, ik vraag me af *wie* nog meer niet.
well, I wonder REFL prt. who yet more not
‘Well, I wonder who else (did not yet enroll).’
b′. wie = wie *zich*zelf heeft opgegeven

The fact that semantic isomorphism need not hold in full does not mean that anything goes, because the propositional content of the fragment *wh*-question is still dependent on the propositional content that we find in the antecedent clause. This can be illustrated by means of example (284), which shows that minimally the proposition expressed by the main verb of the antecedent clause and its arguments must be preserved in the interpretation of the fragment *wh*-question. See Merchant (2006:ch.1) for an attempt to formally define this notion of “closeness in meaning”.

(284) a. Marie noemt veel mensen stom, maar ik weet niet precies *wie*.
Marie calls many people stupid but I know not precisely who
‘Marie calls many people dumb, but I don’t know precisely who.’
b. wie = wie ze stom noemt ‘who she calls dumb’
c. wie ≠ wie ze beledigt ‘who she is insulting’

D. The correlate of the wh*-phrase in the antecedent clause*

The fact established in the previous subsection that the phonetically empty TP need not be syntactically isomorphic to the TP of the antecedent clause could also have been demonstrated on the basis of the position of the *wh*-phrase of the fragment *wh*-question and its correlate in the antecedent clause. Again assume the *wh*-movement + TP deletion approach to fragment *wh*-questions. What examples such as (285) show then is that the antecedent clause differs from the phonetically empty in the fragment *wh*-question in that it has a noun phrase where the TP has a °trace.

(285) Ik geloof $[_{CP}$ dat $[_{TP}$ Jan iets leuks gelezen heeft]], maar ...
I believe that Jan something nice read has but ...
... ik weet niet $[_{CP}$ wat$_i$ C $[_{TP}$ ~~Jan t_i gelezen heeft~~]].
... I know not what Jan read has

Actually, example (286) shows that it is even possible to use the verb *lezen* ‘to read’ pseudo-intransitively, and nevertheless to have a fragment *wh*-question with a *wh*-phrase that functions as the object of *lezen*; the absence of a(n overt) direct object is indicated by the use of Ø.

(286) Ik geloof $[_{CP}$ dat $[_{TP}$ Jan Ø gelezen heeft]], maar ...
I believe that Jan read has but
... ik weet niet $[_{CP}$ wat$_i$ C $[_{TP}$ ~~Jan t_i gelezen heeft~~]].
... I know not what Jan read has

When one analyzes pseudo-intransitive constructions as constructions without a direct object (alternatively, one may argue in favor of some covert object), the trace of the *wh*-phrase in the fragment *wh*-question would not have a correlate at all in the antecedent clause. This may in fact be the normal situation in fragment *wh*-questions such as (287) which consist of a *wh*-phrase with an adverbial function, as it is not normally assumed that such adverbial phrases are covertly expressed in sentences in which they are not morphologically visible.

(287) a. Jan is vertrokken, maar ik weet niet *wanneer*.
Jan is left but I know not when
'Jan has left, but I don't know when.'
b. Ik ben mijn sleutels verloren, maar ik weet niet *waar*.
I am my keys lost but I know not where
'I've lost my keys, but I don't know where.'
c. Ik wil mijn fiets repareren maar ik weet niet *hoe*.
I want my bike repair but I know not how
'I want to repair my bike, but I don't know how.'

Example (288a) shows that if an argument *wh*-trace does have a correlate in the antecedent clause, the latter must be indefinite. This is probably a semantic restriction: the use of a definite noun phrase would make the fragment *wh*-question contradictory or superfluous as in, respectively, (288a) and (288b).

(288) a. Jan heeft *Max Havelaar* van Multatuli gelezen, ($^{\$}$maar ik weet niet *wat*).
Jan has *Max Havelaar* by Multatuli read but I know not what
'Jan has read *Max Havelaar* by Multatuli, but I don't know what.'
b. A. Jan heeft *Max Havelaar* van M. gelezen, B. $^{\$}$Weet je ook *wat*?
A. Jan has *Max Havelaar* by M. read B. know you also what
'Jan has read *Max Havelaar* by Multatuli. Do you also know what?'

The (a)-examples in (289) suggest that something similar applies to adverbial *wh*-phrases; these cases are only acceptable if the *wh*-phrase is used to indicate that the speaker cannot determine the time/location more precisely. Similarly, the independent question in the (b)-examples is used to solicit more precise information about the relevant time internal/location.

(289) a. Jan is onlangs vertrokken, maar ik weet niet $^{?}$(precies) *wanneer*.
Jan is recently left but I know not precisely when
'Jan left recently, but I don't know precisely when.'
a′. A. Jan is onlangs vertrokken. B. Wanneer (precies)?
A. Jan is recently left B. when precisely
'Jan left recently. When precisely?'
b. Ik ben mijn sleutels thuis verloren, maar ik weet niet precies *waar*.
I am my keys at.home lost but I know not precisely where
'I've lost my keys at home, but I don't know precisely where.'
b′. A. Ik ben mijn sleutels thuis verloren. B. Waar (precies)?
A. I am my keys at.home lost B. where precisely
'I've lost my keys at home. Where precisely?'

Universally quantified phrases are similarly excluded as correlates of *wh*-phrases in fragment *wh*-questions. This can again be seen as a semantic restriction: if all relevant entities in the given domain of discourse were to be included, the fragment *wh*-question would become contradictory or superfluous, as illustrated in, respectively, (290a) and (290b).

(290) a. Jan heeft alle romans van Boon gelezen, ($^{\$}$maar ik weet niet *wat*/*welke*).
Jan has all novels by Boon read but I know not what/which
'Jan has read all the novels by Boon, but I don't know what/which.'
b. A. Jan heeft alle romans van Boon gelezen. B. $^{\$}$Wat/Welke?
A. Jan has all novels by Boon read B. what/which
'Jan has read all the novels by Boon. Do you know what/which?'

There is, however, one exception: example (291a) shows that universally quantified phrases are possible as the correlate of the first *wh*-phrase in multiple fragment *wh*-questions. By means of examples like these the speaker expresses that he is not able to supply the reader with a paired list of persons and things <x,y> such that person *x* bought thing *y*. It is important to observe that the correlates of the *wh*-phrases in such multiple fragment *wh*-questions must be clause mates; this condition is satisfied in example (291a), but not in (291b), and as a result the multiple fragment *wh*-question is unacceptable in the latter case as a result.

(291) a. Iedereen had iets gekocht maar ik weet niet *wie wat*.
everyone has something bought but I know not who what
'Everyone had bought something, but I don't know who [bought] what.'
b. Iedereen zei dat Jan iets las, (*maar ik weet niet *wie wat*).
everyone said that Jan something read but I know not who what
'Everyone said that Jan was reading something (but ...).'

Example (292a) is an apparent counterexample to this clause-mate condition: the fragment *wh*-question can only be used if the subject pronoun in the object clause of the antecedent clause is interpreted as a °bound variable, that is, as referentially dependent on the quantified expression *iedereen*; the fact that the second correlate is a clause mate of the bound variable is apparently enough to satisfy the clause-mate condition. Example (292b) provides a comparable case in which the phonetically empty pronoun PRO of the infinitival clause functions as a variable bound by the universally quantified pronoun *iedereen* in the matrix clause.

(292) a. Iedereen$_i$ zei dat hij$_i$ iets las, maar ik weet niet *wie wat*.
everyone said that he something read but I know not who what
'Everyone said that he was reading something (but I don't know who what).'
b. Iedereen$_i$ beloofde [PRO$_i$ iets te lezen], maar ik weet niet *wie wat*.
everyone promised something to read but I know not who what
'Everyone promised to read something (but I don't know who what).'

E. Sluicing-like constituents

The sluicing constructions discussed in the previous subsections all occur as independent sentences mostly given in conjunction with a sentence containing the correlates of the *wh*-phrase. We want to conclude our discussion by noting that sluicing-like constructions can also be used as constituents of clauses and smaller word groups; cf. Lakoff (1974). The examples in (293), adapted from Van Riemsdijk (2000) and especially Kluck (2011), show that the sluicing-like phrase, given in square brackets, can be used as an argument (subject/object), a

°complementive, an adverbial phrase, and even as a part of a quantifier or an attributive modifier of a noun phrase.

(293) a. [Je weet wel wie] was hier. [subject]
you know AFF who was here
'You know who was here.'
b. Jan heeft [je raadt nooit wat] gelezen. [direct object]
Jan has you guess never what read
'Jan has read you'll never guess what.'
c. Jan stuurt Marie altijd [ik weet niet waar naartoe]. [complementive]
Jan sends Marie always I know not where to
'Jan always sends Marie I never know where.'
d. Marie heeft [je raadt wel waar] geklaagd. [adverbial phrase]
Marie has you guess AFF where complained
'Marie has complained you can guess where.'
e. Marie heeft [ik weet niet/God weet hoeveel] boeken. [quantifier]
Marie has I know not/God knows how.many books
'Marie has I don't know/God knows how many books.'
f. Jan heeft een [je wil niet weten hoe grote] televisie. [attributive mod.]
Jan has a you want not know how big television
'Jan has gotten an immensely big television.'

The matrix clauses of such sluicing-like phrases often consist of more or less fixed collocations; they are often headed by verbs like *weten* 'to know' or *raden* 'to guess' supplemented by the negative/affirmative markers *niet/wel* or a negative adverb like *nooit* 'never'. Example (293e-f) shows that the matrix clause can even be a completely idiomatic phrase like *God weet* 'God knows' + *wh*-phrase or *je wil niet weten* 'you don't wanna know' + *wh*-phrase; see Kluck (2010).

The bracketed phrases in (293) all have main clause word order, with the finite verb in second and the subject in first position. Although this suggests that we cannot be dealing with regular embedding, the phrases do not have the distribution of clauses either but occupy the same position as the non-clausal elements with the same syntactic function in (294).

(294) a. Peter was hier. [subject]
Peter was here
b. Jan heeft je dissertatie gelezen. [direct object]
Jan has your dissertation read
c. Jan stuurt Marie altijd naar Groningen. [complementive]
Jan sends Marie always to Groningen
d. Marie heeft bij de directie geklaagd. [adverbial phrase]
Marie has with the management complained
e. Marie heeft veel boeken. [quantifier]
Marie has many books
f. Jan heeft een grote televisie. [attributive modifier]
Jan has a big television

This paradox is solved in Kluck (2011) by assuming that the sluicing-like phrases are actually parenthetical clauses; Examples like (293a-b) have a similar structure as the examples in (295), the only difference is that the correlates of the *wh*-phrases in the parenthetical clauses, *iemand* ‘someone’ and *iets* ‘something’, are not overtly expressed in (293a&b). Her proposal implies that for some of the cases in (293), there are only phonetically empty correlates.

(295) a. Iemand — je weet wel wie — was hier. [subject]
someone you know AFF who was here
‘You know who was here.’
b. Jan heeft iets — je raadt nooit wat — gelezen. [direct object]
Jan has something you guess never what read
‘Jan has read you’ll never guess what.’

An argument in favor of analyzing the bracketed phrases as sluicing constructions can be built on cases in which the sluice is a prepositional object. Subsection B has shown that in such cases the *wh*-remnant preferably includes the preposition. The (b)-examples show that we seem to find the same preference in the case of the constituents under discussion (albeit that our informants seem more lenient towards (296b′)).

(296) a. Jan roddelt over iemand, maar ik weet niet $^{?}$(*over*) *wie*.
Jan gossips about someone but I know not to whom
‘Jan is gossiping about someone, but I don’t know who.’
b. Jan heeft [je weet wel over wie] geroddeld.
Jan has you know PRT about who gossiped
‘Jan has gossiped about you know who.’
b′. $^{(?)}$Jan heeft over [je weet wel wie] geroddeld.
Jan has about you know PRT who gossiped
‘Jan has gossiped about you know who.’

More evidence is provided in Kluck (2011:202), who observes that the *wh*-remnant preferably does not include the preposition in examples such as (297a), in which the form *(op) wat* is used instead of the more common pronominal PP form *waarop*. This exceptional behavior is also reflected in the (b)-examples: the bracketed phrase preferably does not include the preposition *op* but is itself the complement of *op*.

(297) a. Jan rekent ergens op, maar ik weet niet ($^{?}$op) WAT.
Jan counts something on but I know not on what
‘Jan is counting on something but I don’t know what.’
b. Jan heeft op [ik weet niet wat] gerekend.
Jan has on I know not what counted
‘Jan has counted on I not know what.’
b′. $^{??}$Jan heeft [ik weet niet op wat] gerekend.
Jan has I know not on what counted
‘Jan has counted on I don’t know what.’

For completeness’ sake, the examples in (298) show that sluicing also allows the more regular form *waarop*. Given that the preposition is obligatory in (298a), we correctly expect the bracketed phrase in the (b)-examples to obligatorily include the preposition.

(298) a. Jan rekent ergens op, maar ik weet niet waar *(op).
Jan counts something on but I know not where on
'Jan is counting on something but I don't know what.'
b. Jan heeft [ik weet niet waarop] gerekend.
Jan has I know not where-on counted
'Jan has been counting on I don't know what.'
b′. *Jan heeft op [ik weet niet waar] gerekend.
Jan has on I know not where counted

The fact that the bracketed phrases in the (b)-examples in (296) to (298) exhibit a similar behavior as the unequivocal sluicing constructions in the (a)-examples strongly supports a sluicing analysis of the former. For more evidence in favor of this conclusion, we refer the reader to Kluck (2011:ch.5).

A construction that seems to belong to the same domain is given in (299); the construction resembles the regular sluicing construction in that we may add °floating quantifiers like *allemaal* to the *wh*-phrase: compare examples like *Jan heeft weet ik wat allemaal gelezen* and *Jan stuurt Marie altijd weet ik waar allemaal naartoe* with the relevant examples in Subsection IB3. The examples in (299) seem to have a similar meaning as the corresponding examples in (293), but are structurally completely different: although the bracketed constituent does have the order of a main clause, the finite verb and the subject are inverted. The construction seems more restricted than the construction type in (293) in the sense that the verb is typically *weten* 'to know', and seems to express some form of high degree quantification. To our knowledge, this construction has not been discussed in the literature so far.

(299) a. Jan heeft [weet ik wat] gelezen.
Jan has know I what read
'Jan has read all kinds of stuff.'
b. Jan stuurt Marie altijd [weet ik waar naartoe].
Jan sends Marie always know I where to
'Jan is always sending Marie I never know where.'
c. Jan heeft [weet ik waar] gestudeerd.
Jan has know I where studied
'Jan has studied at all kinds of places.'
d. Jan heeft [weet ik hoeveel] boeken.
Jan has know I how.many books
'Jan owns a tremendous number of books.'

F. Conclusion

The previous subsections have looked in some detail at fragment *wh*-questions. Subsection A has shown that these fragment *wh*-questions exhibit the behavior of clauses and so cannot be seen as projections of a non-verbal nature. Subsection B investigated the internal structure of fragment *wh*-phrases in more detail: we have seen that fragment *wh*-questions do not overtly express the °head of the CP-projection (they never contain a complementizer or a finite verb), do not contain any TP-internal material (although there are some potential exceptions to this claim), and are not island-sensitive (with, again, a number of potential exceptions). Subsection C discussed the relation between the supposedly elided TP and its antecedent clause and showed that, although the two share the same core proposition, they need not be identical in syntactic structure. Subsection D discussed the relation between the *wh*-phrases in fragment *wh*-questions and their non-*wh*-correlates in the antecedent clause, and later showed that the latter cannot normally be definite or universally quantified (with the notable exception of the correlate of the first *wh*-phrase in multiple fragment *wh*-questions). We concluded in subsection E with a brief remark on sluicing-like constructions that are used as constituents with a non-clausal behavior. Much of what we presented here was based on Merchant (2001/2006), to which we refer the reader for a more detailed discussion as well as a critical review of a variety of theoretical approaches to sluicing.

II. Fragment answers

This subsection discusses the second type of fragment clauses, which we will refer to as fragment answers. The examples in (300) show that fragment answers are used in response to *wh*-questions and can occur either as independent utterances or as dependent CONSTITUENTS. The overt part of the fragment answer correlates with the *wh*-phrase in the antecedent clause (that is, the *wh*-question). Observe that fragment answers provide new information by definition and are therefore normally assigned sentence accent, which is indicated by a grave accent on the book title *De zondvloed* in the (b)-examples of (300).

(300) a. Wat is Jan momenteel aan het lezen?
what is Jan now AAN HET lezen
'What is Jan reading at the moment?'
b. *De zòndvloed* van Jeroen Brouwers. [independent]
De zondvloed by Jeroen Brouwers
b′. Ik vermoed *De zòndvloed* van Jeroen Brouwers. [dependent]
I suppose *De zondvloed* by Jeroen Brouwers

The list in (301) gives a small sample of verbs that may take such fragment answers as their complement; these are all verbs that may take a declarative clause as their complement.

(301) Verbs that may take a fragment answer: *denken* 'to think/believe', *hopen* 'to hope', *vermoeden* 'to suppose', *vertellen* 'to tell', *vrezen* 'to fear', *zeggen* 'to say'

Verbs taking a fragment answer as their complement are always non-factive; see Barbiers (2000:194). This is illustrated in example (302b): whereas the non-factive verb *vrezen* 'to fear' gives rise to a fully acceptable result, the factive verb *betreuren* does not.

(302) a. Wat koopt Marie voor Peter?
what buys Marie for Peter
'What will Marie buy for Peter?'
b. Ik vrees/*betreur een drumstel.
I fear/regret a drum.set

The (visible) constituent in the fragment answer can be a nominal argument, like in the two earlier examples, but it can also be of a different category and have a different function. In example (303b), for instance, we are dealing with a temporal adverbial phrase, which can appear in the form of an AP like *vroeg* 'early' or a PP like *in de ochtend* 'in the morning'

(303) a. Wanneer vertrek je morgen?
when leave you tomorrow
'When will you leave tomorrow?'
b. Ik geloof vroeg/in de ochtend.
I believe early/in the morning

The following two subsections will argue that fragment answers are clauses and suggest a potential analysis for them, which, like in the case of fragment *wh*-phrases, raises a number of non-trivial questions.

A. Fragment answers are clauses

That fragment answers are clausal in nature can be established on the basis of their syntactic distribution, even though we will see that the argument is not as straightforward as in the case of fragment *wh*-questions discussed in Subsection I. The basic insight is the following: if fragment answers are indeed clauses, we predict that they normally follow the verbs in clause-final position and that they are excluded in the °middle field of the clause; if fragment answers are not clauses but phrases of some other category, we would predict that they must occur in front of the verbs in clause-final position if the phrase constituting the fragment answer is nominal in nature. Testing these predictions is not easy given that dependent fragment answers do not readily occur in embedded clauses or clauses including a non-main verb. Nevertheless, most speakers feel the contrast between the two examples in (304b&c): whereas (304b) is generally judged as marked but acceptable, example (304c) is generally considered to be degraded.

(304) a. Wat geeft Marie Peter voor zijn verjaardag?
what gives Marie Peter for his birthday
'What will Marie give Peter for his birthday?'
b. $^{(?)}$Ik weet het niet zeker, maar ik heb steeds vermoed *een boek*.
I know it not for.sure but I have all.the.time supposed a book
'I'm not absolutely sure but my suspicion has been all along: a book.'
c. $^{*?}$Ik weet het niet zeker, maar ik heb steeds *een boek* vermoed.
I know it not for.sure but I have all.the.time a book supposed

The contrast between the (b)- and (c)-examples is perhaps clearer when we replace the verb *vermoeden* by a verb of saying/thinking, as in (305). Example (305b) is generally judged as acceptable, whereas judgments on (305c) vary from very marked to unacceptable.

(305) a. Wat geeft Marie Peter voor zijn verjaardag?
what gives Marie Peter for his birthday
‘What will Marie give Peter get for his birthday?’
b. Ik weet het niet zeker, maar Marie heeft steeds gezegd *een boek*.
I know it not for.sure but Marie has all.the.time said a book
‘I’m not absolutely sure but Marie has always said: a book.’
c. $^{*?}$Ik weet het niet zeker, maar Marie heeft steeds *een boek* gezegd.
I know it not for.sure but Marie has all.the.time a book said

Given the subtlety of the judgments, we have also asked our informants to evaluate examples involving manner adverbials, which like nominal arguments generally precede the verbs in clause-final position. The net result is the same: the contrast between the two (b)-examples in (306) shows again that fragment answers must follow the verbs in clause-final position.

(306) a. Hoe heeft Peter dat boek gelezen: globaal of nauwkeurig?
how has Peter that book read globally or meticulously
‘How did Peter read that book: cursorily or thoroughly?’
b. Ik weet het niet zeker, maar ik zou zeggen *globaal*.
I know it not for.sure but I would say globally
‘I’m not absolutely sure, but I’d say: cursorily.’
c. $^{*?}$Ik weet het niet zeker, maar ik zou *globaal* zeggen.
I know it not for.sure but I would cursorily say

The contrasts between the (b)- and (c)-examples strongly suggest that fragment answers are clausal in nature. Additional evidence is provided by examples such as (307), where the *wh*-phrase in (307a) pertains to a contextually determined set of options: a novel, a collection of stories, a volume of poems, etc. The fact that the neutral demonstrative pronoun *dat* is used in (307b) suggests that the fragment answer is not clausal: the neutral pronoun can refer to clauses but not to non-neuter noun phrases.

(307) a. Wat ga je morgen lezen?
what go you tomorrow read
‘What are you going to read tomorrow?’
b. Ik denk *de roman*, want dat is het gemakkelijkst.
I think the novel because that is the easiest

However, before we can confidently adopt the claim that fragments answers are clauses, we have to discuss two complications. The first is that verbs of saying/thinking may also be used in (semi-)direct reported speech constructions; see Section 5.1.2.4, sub II. Before we can draw any conclusion from the (b)-examples in (305) and (306), we have to establish that we are in fact dealing with fragment answers, and not with (semi-)direct quotes. A first argument in favor of the first option is provided by the meaning of example (305b): it does not express that Marie literally said “Een boek”, but that Marie has said various things from which the speaker has drawn the conclusion that she would give Peter a book. The same thing is even clearer for (306b), in which the speaker does not quote himself but provides an opinion. A second argument can be based on example (308b) below. The fact that the pronoun *zij* ‘she’ can be used to refer to *Marie* and the pronoun *ik* ‘I’ must refer to the speaker of this sentence shows that we cannot be dealing with a direct quote. The fact established in Section 5.1.2.4, sub II, that the choice between direct and semi-direct quotes is normally free (in narratives at least) therefore suggests that (308b) cannot be interpreted as a semi-direct reported speech construction either.

(308) a. Wie koopt er een boek voor Peter?
who buys there a book for Peter
‘Who will buy a book for Peter?’
b. Ik weet het niet zeker, maar Marie heeft steeds gezegd *zij*/*ik*.
I know it not for.sure but Marie has all.the.time said she/I
‘I’m not absolutely sure, but Marie has said all the time: she/I.’
c. *Ik weet het niet zeker, maar Marie heeft steeds *zij*/*ik* gezegd.
I know it not for.sure but Marie has all.the.time she/I said

A final argument for claiming that we are dealing with fragment answers, and not with (semi-)direct quotes, is provided by the examples in (309). If we were dealing with a reported speech construction, we would expect that we could use any quote as the fragment answer: this wrongly predicts that (309b) would be a felicitous answer to the question in (309a).

(309) a. Komt Marie morgen dat boek halen?
comes Marie tomorrow that book fetch
‘Will Marie come to fetch that book tomorrow?’
b. $^{\#}$Marie heeft gezegd *ja*.
Marie has said yes

The second complication that must be discussed before we adopt the claim that fragment answers are clausal is that Barbiers (2000:197-8) considers examples such as (310) fully acceptable, provided that the displaced constituent is marked with contrastive focus accent. Although these judgments are actually shared by many (but not all) Dutch speakers, it is not immediately clear whether examples of this type are relevant for our present discussion; Given the somewhat unclear status of these examples, we will not discuss them in detail here and refer the reader to Temmerman (2013) for an attempt to show that the primed examples are indeed fragment clauses, albeit of a somewhat different sort than fragment clauses that follow the verbs in clause-final position.

(310) a. $^{\%}$Ik had MORGEN$_i$ gedacht [$_{CP}$ dat Jan t_i zou komen].
I had tomorrow thought that Jan would come
‘I’d thought that Jan would come tomorrow.’
a′. $^{\%}$Ik had MORGEN$_i$ gedacht.
I had tomorrow thought

b. $^{\%}$Ik had in de TUIN$_i$ gehoopt [$_{CP}$ dat het feest *t*$_i$ zou zijn].
I had in the garden hoped that the party would be
'I'd hoped that the party would be in the garden.'
b′. $^{\%}$Ik had in de TUIN$_i$ gehoopt.
I had in the garden hoped

From the discussion above we can safely conclude that fragment answers are clausal in nature. More support for this position can be found in the fact that pronouns may appear in their subject form when they constitute (the visible part of) a fragment answer; the examples in (311) show that the form of the pronoun is not determined by the verb *denken*, but by the grammatical function of its *wh*-correlate in the antecedent clause; cf. Barbiers (2000).

(311) a. A. Wie komt er vandaag? B. Ik denk *Jan*/*hij*. [subject pronoun]
A. who comes there today B. I think Jan/he
'Who is coming today? I think Jan/he.'
b. A. Wie heeft hij bezocht? B. Ik denk *Marie*/*haar*. [object pronoun]
A. who has he visited B. I think Marie/her
'Who did he visit? I think Marie/her.'

B. The derivation of fragment clauses

Since fragment *wh*-questions and fragment answers are both clausal in nature, it seems natural to assume that the two have a more or less similar derivation. Subsection I has shown that fragment *wh*-questions are derived by postulating that the TP of the fragment clause is deleted or pronominalized; see the (b)-examples in (312), repeated from Subsection IB, in which strikethrough stands for deletion of the phonetic content of the TP and *e* for an empty pro-form replacing the TP.

(312) a. Ik weet niet [$_{CP}$ wat$_i$ C [$_{TP}$ Jan gekocht *t*$_i$ heeft]].
I know not what Jan bought has
'I don't know what Jan has bought.'
b. Ik weet niet [$_{CP}$ wat$_i$ C [$_{TP}$ ~~Jan gekocht t$_i$~~ ~~heeft~~]].
b′. Ik weet niet [$_{CP}$ wat C [$_{TP}$ e]].

It seems that in the case of fragment answers, there is good reason to prefer the deletion over the pronominalization approach; see also Temmerman (2013). First consider the examples in (313a&b), which show that reflexive pronouns like *zichzelf* 'himself' differ from referential pronouns like *hem* 'him': the former must but the latter cannot have a syntactically realized antecedent in its own clause; see Section N5.2.1.5 on °binding theory for more detailed discussion. The indices indicate (lack of) coreference.

(313) a. Ik denk dat Peter$_i$ zichzelf$_i$/*hem$_i$ het meest bewondert.
I think that Peter himself/him the most admires
'I think that Peter admires himself the most.'
b. Peter$_i$ denkt dat ik$_j$ hem$_i$/*zichzelf$_i$ het meest bewonder.
Peter thinks that I him/himself the most admire
'Peter thinks that I admire him the most.'

The distribution of the pronouns in the fragment answers in (314) show that these are dependent on the subject in the antecedent *wh*-clause. This would follow immediately under the TP ellipsis approach: although their phonetic content is erased under TP ellipsis, subjects of fragment answers are nevertheless syntactically present and can therefore function as antecedents of pronouns; the fact that the pronouns in (314) have a similar distribution as the pronouns in (313) is therefore expected. An account of this sort is not available if the TP is replaced by a pro-form, as this would entirely remove the subject from the fragment question.

(314) a. A. Wie bewondert Jan$_i$ het meest? B. Ik denk zichzelf$_i$/*hem$_i$.
A. who admires Jan the most B. I think himself/him
'Who does Jan admire the most? I think himself.'
b. A. Wie bewonder jij$_j$ het meest? B. Ik denk hem$_i$/*zichzelf$_i$.
A. who admire you the most B. I think him/himself
'Who do you admire the most? I think him.'

For completeness' sake, the examples in (315) provide similar instances with a °bound variable reading of the possessive pronoun *zijn* 'his'; given that the bound variable reading of pronouns only arises if the quantifier °c-commands the pronoun, the availability of this reading in the question-answer pair in (315) again supports the TP-ellipsis approach; cf. Temmerman (2013).

(315) a. Ik denk dat iedereen$_i$ zijn$_i$ moeder het meest bewondert.
I think that everyone his mother the most admires
'I think that everyone admires his mother the most.'
b. A. Wie bewondert iedereen$_i$ het meest? B. Ik denk zijn$_i$ moeder.
A. who admires everyone the most B. I think his mother
'Who does everyone admire the most? I think his mother.'

C. Two problems

Adopting a TP-deletion analysis for fragment answers is not wholly unproblematical: it raises the non-trivial question what structure serves as the input of the deletion operation. If we adopt a similar analysis as suggested in Subsection IC, for fragment *wh*-questions, we should assume that the non-*wh*-correlate of the *wh*-phrase in the antecedent (= *zichzelf* in (316)) is topicalized before deletion. An example such as (314a) with *zichzelf* would then have the syntactic representation in (316a). The problem of this analysis is, however, that the first position in embedded clauses is normally only accessible to *wh*-phrases and relative pronouns; topicalization of any other material is categorically excluded. This means that the unacceptable structure in (316b) would be the input for TP deletion in order to derive the acceptable fragment question in (316a).

(316) a. Ik denk [$_{CP}$ zichzelf$_i$ C [$_{TP}$ ~~Jan *t*$_i$ het meest bewondert~~]].
I think himself Jan the most admires
b. *Ik denk [$_{CP}$ zichzelf$_i$ dat/Ø [$_{TP}$ Jan *t*$_i$ het meest bewondert]].
I think himself Jan the most admires

For completeness' sake, the examples in (317) show that this problem does not occur in independent fragment answers, although these of course raise the question why the finite verb cannot be overtly expressed; see the discussion of the same problem for independent fragment questions in Subsection IB.

(317) a. [$_{CP}$ Zichzelf$_{i}$ C [$_{TP}$ ~~Jan t_{i} het meest bewondert~~]].
himself Jan the most admires
b. [$_{CP}$ Zichzelf$_{i}$ bewondert [$_{TP}$ Jan t_{i} het meest $t_{bewondert}$]].
himself admires Jan the most

Barbiers (2000) suggested that dependent fragment clauses can be derived from the structures in the primeless examples in (310), repeated here as (318), by deletion of the postverbal CPs. This proposal runs into two problems, however: it wrongly predicts that fragment clauses must precede the verbs in clause-final position, and it leaves unexplained that fragment answers can also occur as independent utterances.

(318) a. %Ik had MORGEN$_{i}$ gedacht [$_{CP}$ dat Jan t_{i} zou komen].
I had tomorrow thought that Jan would come
b. %Ik had in de TUIN$_{i}$ gehoopt [$_{CP}$ dat het feest t_{i} zou zijn].
I had in the garden hoped that the party would be

No further attempts will be made here to provide an answer to the question pertaining to the derivation of fragment answers, but we refer to Temmerman (2013) for a number of suggestions of a more theory-internal nature.

Merchant (2004) claims that fragment answers differ from fragment questions in that the presumed topicalization operation preceding TP-deletion is °island-insensitive. This is not so easy to demonstrate, however, because *wh*-movement in antecedent *wh*-questions is island-sensitive itself; consequently, fragment answers will obey the relevant island restrictions more or less by definition. Merchant therefore demonstrates his claim by means of *yes*/*no*-questions of the sort in (319a&b), which have a focus accent on an embedded constituent and can be seen as implicit *wh*-questions; if the answers in the primed examples in (319) can be analyzed in the same way as run-of-the-mill fragment answers, the unacceptability of the answers in the primed examples shows that topicalization in fragment answers is island-sensitive in its own right.

(319) a. Does Abby speak [$_{ISLAND}$ the same Balkan language that BEN speaks]?
a′. *No, CHARLIE.
b. Did Ben leave the party [$_{ISLAND}$ because ABBY wouldn't dance with him]?
b′. *No, BETH.

The status of the answers in the comparable Dutch question-answer pairs in (320) is somewhat unclear to us, which we have indicated by a percentage sign. Temmerman (2013) gives these pairs as fully acceptable, but our informants seem to be less positive about it.

(320) a. Zoeken ze $[_{\text{ISLAND}}$ iemand die GRIEKS spreekt]?
look.for they someone that Greek speaks
'Are they looking for someone who can speak Greek?'

a′. $^{\%}$Nee, (ik zou denken) ALBANEES.
no I would think Albanian

b. Vertrok Jan $[_{\text{ISLAND}}$ omdat MARIE niet met hem wou dansen]?
left Jan because Marie not with him wanted dance
'Did Jan leave because Marie didn't want to dance with him?'

b′. $^{\%}$Nee, (ik zou denken) ELS.
no I would think Els

If the answers in the primed examples in (320) are indeed felicitous and if these answers ought to be analyzed as fragment answers, it would show that Dutch fragment answers differ from their English counterparts in that they are island-insensitive (just like fragment questions). For completeness' sake, we want to point out that Temmerman claims that the (postverbal) fragment answers in (320) differ markedly from the (preverbal) fragment answers in (321), which are undisputedly infelicitous as responses to the questions in the primeless examples in (320).

(321) a. $^{\#}$Nee, ik zou ALBANEES denken.
no I would Albanian think

b. $^{\#}$Nee, ik zou ELS denken.
no I would Els think

D. Conclusion

The previous subsections have discussed two types of fragment clauses: fragment *wh*-questions and fragment answers. It has been shown that fragment clauses have the distribution of regular finite clauses, which suggests that these fragment clauses are CPs with a phonetically empty TP. For instance, the fact that the overt part of fragment answers may consist of a sole reflexive pronoun may favor a TP-deletion over a TP-pronominalization approach. However, the TP-deletion approach also raises a number of non-trivial questions concerning the lack of isomorphism between the presumed empty TP of fragment clauses and the TP of their antecedent clauses. These questions are discussed at length for fragment questions in Merchant (2001/2006) and much subsequent work, but they will no doubt remain part of the research agenda for some time to come.

5.1.6. Wh-*extraction from argument clauses*

This section discusses *wh*-extraction from argument clauses. The examples in (322) show that such extractions can be applied to at least three types of phrases: *wh*-phrases, relative pronouns, and contrastively stressed phrases. For convenience, we will focus on extraction of *wh*-phrases, and refer the reader to Chapter 11 for a more extensive discussion of the different kinds of *wh*-movement.

(322) a. Wat$_i$ denk je [dat Marie morgen t_i zal vertellen]?
what think you that Marie tomorrow will tell
'What do you think that Marie will tell tomorrow?'
b. Hij liep naar de plaats waar$_i$ hij wist [dat zijn accordeon t_i stond].
he walked to the place where he knew that his accordion stood
'He walked to the place where he knew his accordion was.'
c. Dit BOEK$_i$ denk ik [dat Marie t_i wel wil hebben].
this book think I that Marie PRT wants.to have
'This book, I think that Marie would like to have.'

I. Bridge verbs

Argument clauses are special in that they allow *wh*-extraction under specific conditions. The examples in (323) show that the extracted *wh*-phrase may be either an argument of the embedded verb or an °adjunct. The °traces t_i refer to the original position of the moved *wh*-phrases in the embedded clauses.

(323) a. Ik denk [$_{\text{CLAUSE}}$ dat Marie dit boek morgen zal kopen].
I think that Marie this book tomorrow will buy
'I think that Marie will buy this book tomorrow.'
b. Wie$_i$ denk je [$_{\text{CLAUSE}}$ dat t_i dit boek morgen zal kopen]? [subject]
who think you that this book tomorrow will buy
'Who do you think will buy this book tomorrow?'
c. Wat$_i$ denk je [$_{\text{CLAUSE}}$ dat Marie t_i morgen zal kopen]? [object]
what think you that Marie tomorrow will buy
'What do you think that Marie will buy tomorrow?'
d. Wanneer$_i$ denk je [$_{\text{CLAUSE}}$ dat Marie dit boek t_i zal kopen]? [adverbial]
when think you that Marie this book will buy
'When do you think that Marie will buy this book?'

The fact that *wh*-phrases can be extracted from argument clauses is rather special as this is categorically prohibited from adjunct clauses. The examples in (324), for example, show that conditional clauses are strong (absolute) °islands for *wh*-movement; they block *wh*-extraction of both arguments and adjuncts.

(324) a. Jan zal blij zijn [$_{\text{CLAUSE}}$ als Marie dit boek morgen zal kopen].
Jan will happy be if Marie this book tomorrow will buy
'Jan will be happy if Marie will buy this book tomorrow.'
b. *Wie$_i$ zal Jan blij zijn [$_{\text{CLAUSE}}$ als t_i dit boek morgen zal kopen]?
who will Jan happy be if this book tomorrow will buy
c. *Wat$_i$ zal Jan blij zijn [$_{\text{CLAUSE}}$ als Marie t_i morgen zal kopen]?
what will Jan happy be if Marie tomorrow will buy
d. *Wanneer$_i$ zal Jan blij zijn [$_{\text{CLAUSE}}$ als Marie dit boek t_i zal kopen]?
when will Jan happy be if Marie this book will buy

There are good reasons for assuming that the *wh*-phrases in (323) are not moved in one fell swoop into their target position but that this involves an additional movement step via the initial position of the embedded clause; cf. Section 11.3 and Chomsky (1973/1977). This is indicated in the structures in (325), in which the traces refer to the positions that the moved phrase has occupied during the derivation; the CP/TP structure of clauses assumed here is discussed in Section 9.1.

(325) a. Wie$_i$ denk je [$_{CP}$ t_i dat [$_{TP}$ t_i dit boek zal kopen]]?
who think you that this book will buy
b. Wat$_i$ denk je [$_{CP}$ t_i dat [$_{TP}$ Marie t_i zal kopen]]?
what think you that Marie will buy
c. Wanneer$_i$ denk je [$_{CP}$ t_i dat [$_{TP}$ Marie dit boek t_i zal kopen]]?
when think you that Marie this book will buy

The main reason for assuming that the *wh*-phrases are moved via the initial position of the embedded clause is that this immediately accounts for the unacceptability of examples like (326b&c); since the clause-initial position of the embedded clause is already occupied by the subject pronoun *wie* 'who', *wh*-extraction of the object/adjunct must apply in one fell swoop and this is not allowed. Note that (326c) is acceptable when the adverb *wanneer* 'when' is construed as a modifier of the °matrix predicate, but the reading intended here is the one in which it modifies the embedded predicate *dit boek kopen* 'buy this book', as is indicated by the traces.

(326) a. Jan vroeg [$_{CP}$ wie C [$_{TP}$ t_i dit boek morgen zal kopen]]?
Jan asked who this book tomorrow will buy
'Jan asked who will buy this book tomorrow.'
b. *Wat$_j$ vroeg Jan [$_{CP}$ wie$_i$ C [$_{TP}$ t_i t_j morgen zal kopen]]?
what asked Jan who tomorrow will buy
c. *Wanneer$_j$ vroeg Jan [$_{CP}$ wie$_i$ C [$_{TP}$ t_i dit boek t_j zal kopen]]?
when asked Jan who this book will buy

Although more can be said about the restrictions on *wh*-movement (see Section 11.3.1), the above suffices for the main topic in this subsection: which verbs may function as BRIDGE VERBS, that is, allow *wh*-extraction from their argument clauses? For example, whereas verbs of saying/thinking normally license *wh*-extraction from their complement clause, verbs of manner of speech such as *fluisteren* 'to whisper' normally do not; this observation is attributed by Erteschik-Shir (2006), to an unpublished paper by Janet Dean (Fodor) from 1967

(327) a. Wat$_i$ zei Jan [$_{CLAUSE}$ dat Marie t_i gelezen had]?
what said Jan that Marie read had
'What did Jan say that Marie had read?'
b. ??Wat$_i$ fluisterde Jan [$_{CLAUSE}$ dat Marie t_i gelezen had]?
what whispered Jan that Marie read had
'What did Jan whisper that Marie had read?'

The examples in (328) show that °irrealis verbs expressing a hope or a wish constitute another set of verbs that readily license *wh*-extraction in Dutch; cf. Haider (2010:108) for the same observation for those varieties of German that allow *wh*-extraction from embedded *dass*-clauses.

(328) a. Ik hoop [$_{\text{CLAUSE}}$ dat Marie dit boek morgen zal kopen].
I hope that Marie this book tomorrow will buy
'I hope that Marie will buy this book tomorrow.'
b. Wie$_i$ hoop je [$_{\text{CLAUSE}}$ dat t_i dit boek morgen zal kopen]? [subject]
who hope you that this book tomorrow will buy
'Who do you hope will buy this book tomorrow?'
c. Wat$_i$ hoop je [$_{\text{CLAUSE}}$ dat Marie t_i morgen zal kopen]? [object]
what hope you that Marie tomorrow will buy
'What do you hope that Marie will buy tomorrow?'
d. Wanneer$_i$ hoop je [$_{\text{CLAUSE}}$ dat Marie dit boek t_i zal kopen]? [adverbial]
when hope you that Marie this book will buy
'When do you hope that Marie will buy this book?'

Factive verbs like *betreuren* 'to regret', on the other hand, systematically seem to block *wh*-extraction from their complement clause given that examples like (329b-d) are generally judged to be unacceptable; see, e.g., Hoeksema (2006:147).

(329) a. Ik betreur [$_{\text{CLAUSE}}$ dat Marie dit boek morgen zal verkopen].
I regret that Marie this book tomorrow will sell
'I regret that Marie will sell this book tomorrow.'
b. $^{*?}$Wie$_i$ betreur je [$_{\text{CLAUSE}}$ dat t_i dit boek morgen zal verkopen]? [subject]
who regret you that this book tomorrow will sell
'Who do you regret will sell this book tomorrow?'
c. $^{*?}$Wat$_i$ betreur je [$_{\text{CLAUSE}}$ dat Marie t_i morgen zal verkopen]? [object]
what regret you that Marie tomorrow will sell
'What do you regret that Marie will sell tomorrow?'
d. *Wanneer$_i$ betreur je [$_{\text{CLAUSE}}$ dat Marie dit boek t_i zal verkopen]? [adverbial]
when regret you that Marie this book will sell
'When do you regret that Marie will sell this book?'

Examples like (329b&c), in which an argument is extracted seem degraded but are often considered to be better than examples such as (329d), in which an adjunct is extracted. This so-called argument-adjunct asymmetry is often attributed to the referential status of arguments; see Rizzi (1990). That referential status is relevant is clear from the fact that argument extraction becomes even better when the argument is °discourse-linked, that is, when the hearer is asked to pick some entity or set of entities from some presupposed list. Although there is considerable variation in acceptability judgments on examples of this type, some speakers even seem to consider them fully acceptable; see, e.g., Zwart (2011:209) for cases of object extraction. If acceptable, the examples in (330) show that factive clauses are not strong, but weak (selective) islands for *wh*-extraction.

(330) a. $^{\%}$Welke student$_i$ betreur je [$_{\text{CLAUSE}}$ dat t_i dit boek zal verkopen]?
which student regret you that this book will sell
'Which student do you regret will sell this book?'
b. $^{\%}$Welk boek$_i$ betreur je [$_{\text{CLAUSE}}$ dat Marie t_i zal verkopen]?
which book regret you that Marie will sell
'Which book do you regret that Marie will sell?'

All in all, the list of bridge verbs seems to be relatively small. Hoeksema (2006) collected a sample of such verbs selected from written sources published after 1780. The complete collection consists of 963 tokens and 110 types. Most types have a very low frequency: nearly fifty types occur only once. Restricting ourselves to types occurring minimally six times, we get the result in Table (331). Bridge verbs are not only relevant for *wh*-questions but also for relative clause and topicalization constructions.

(331) Frequently occurring bridge verbs

begrijpen 'to understand'	18	#	*verzekeren* 'to assure'	8	
beweren 'to claim'	9		*vinden* 'to consider/think'	34	
denken 'to think'	318		*voelen* 'to feel/think'	9	
geloven 'to believe'	29		*vrezen* 'to fear'	10	
hopen 'to hope'	37		*wensen* 'to wish'	17	
horen 'to hear'	7		*weten* 'to know'	73	#
menen 'to suppose'	62		*willen* 'to want'	119	
oordelen 'to judge'	7		*willen hebben* 'would like'	6	
rekenen (meaning unclear)	6	#	*zeggen* '*to* say'	59	
vermoeden 'to suspect'	15		*zich voorstellen* 'to imagine'	8	
vertrouwen 'to trust'	6		*zien* 'to see'	18	
verwachten 'to expect'	13				

Since Hoeksema does not give his list of attested examples, we searched the internet with the string [*Wat* $V_{[\pm past]}$ *je dat*] 'what do/did you V that ...?' in order to check whether the verbs in Table (331) occur in the relevant type of *wh*-question. The three cases for which we could not find such examples are marked by a number sign; their use may be restricted to relative clause or topicalization constructions; see example (322b), for instance, which was taken from Hoeksema (2006). This leaves us with no more then twenty verbs that are regularly used as bridge verbs in *wh*-questions, and there is in fact only one verb, *denken* 'to think', that is really frequent (>300 tokens). Another relatively frequent bridge verb is the irrealis verb *willen* 'to want' (>100), but all other verbs are relatively infrequent (<100). Other corpus-based research has revealed a similar preference for the verb *denken* and, to a lesser extent, *willen*; cf. Verhagen (2005:119ff.) and Schippers (2012:105).

II. Two approaches to wh-*extraction*

Wh-extraction has given rise to two main lines of research, which Erteschik-Shir (2006) refers to as, respectively, the structural and the semantic approach. We will start with arguments in favor of the structural approach, according to which bridge verbs have some special syntactic property that makes their complement clauses transparent for *wh*-movement. For example, Erteschik-Shir mentions that verbs of manner of speech such as *fluisteren* 'to whisper' differ from verbs of speaking and thinking in that they can occur without a propositional clause, and she suggests on the basis of this that embedded clauses co-occurring with verbs of manner of speech may have a syntactic status different from embedded clauses that co-occur with verbs of speaking and thinking.

(332) a. Jan fluisterde/schreeuwde.
Jan whispered/yelled
b. Jan *zei/$^{??}$dacht.
Jan said/thought

More support for the structural approach comes from languages like English and German. In English, the set of bridge verbs seems to coincide more or less with the set of verbs allowing *that*-deletion in embedded declarative clauses, an observation again attributed by Erteschik-Shir (2006) to Janet Dean (Fodor). Verbs of speaking/thinking, for example, allow *that*-deletion while factive verbs like *to regret* do not (although it is not too hard to find cases on the internet). Since Dutch does not allow *dat*-deletion in embedded declarative clauses, we cannot provide similar evidence on the basis of this language.

(333) a. John thinks Marie will be elected Chair.
b. *John regrets Marie will be elected Chair.

As for German, Haider (1985:55) claims that most bridge verbs trigger embedded °verb-second in the German varieties that have it (the Northern varieties as well as standard German), although irrealis verbs like *mögen* ‘to like’ are an exception to this general rule; cf. Haider (2010:124, fn. 25). The examples in (334) show that *wh*-extraction even requires the embedded finite verb to be in second position in those varieties that do not allow *wh*-extraction from embedded declarative *dass*-clauses; *wh*-extraction in dialects not allowing a set-up such as in (334a) obligatorily triggers verb-second, as in (334b). Since Dutch does not have this form of embedded verb-second, we cannot provide similar evidence on the basis of this language.

(334) a. Auf wen$_i$ glaubte man [$_{CP}$ t_i dass [$_{TP}$ sie t_i gewartet habe]]? [Southern G.]
for whom believed one that she waited has
‘For whom did people think that she has waited?’
b. Auf wen$_i$ glaubte man [$_{CP}$ t_i [$_{TP}$ habe sie t_i gewartet t_{habe}]]? [Northern G.]
for whom believed one has she waited
‘For whom did people think that she has waited?’

In short, arguments in favor of the structural approach to *wh*-extraction emphasize that bridge verbs obligatorily take a complement clause and that, in some languages at least, such verbs may affect the form of these clauses by licensing complementizer deletion or embedded verb-second. The semantic approach, which originates in Erteschik-Shir’s (1973) seminal work, emphasizes the effect of information structure on *wh*-extraction. The generalization is that *wh*-extraction is possible only from clauses which are focused, that is, which express the new information of the clause. This immediately accounts for the fact that *wh*-movement is normally not possible from factive clauses given that these present propositions the truth of which is presupposed by the speaker; see the discussion in Section 5.1.2.3. It may, however, also account for the contrast between the primeless and primed examples in (335b&c). That we are dealing with a so-called weak °island is clear from the fact that the two primed examples exhibit the argument-adjunct asymmetry discussed in Subsection I. For completeness’ sake, it should be noted that the intended reading of the two (c)-examples is the one in which the adverbial *wanneer* ‘when’ modifies the embedded clause; matrix scope is not intended here.

(335) a. Jan zei (niet) [dat Marie dat boek gisteren gekocht had].
Jan said not that Marie that book yesterday bought had
‘Jan said/didn’t say that Marie had bought that book yesterday.’
b. Wat$_i$ zei Jan [dat Marie t_i gisteren gekocht had]? [argument]
what said Jan that Marie yesterday bought had
‘What did Jan say that Marie had bought yesterday?’
b′. $^{??}$Wat$_i$ zei Jan niet [dat Marie t_i gekocht had]?
what said Jan not that Marie bought had
‘What didn’t Jan say that Marie had bought?’
c. Wanneer$_i$ zei Jan [dat Marie dat boek t_i gekocht had]? [adjunct]
when said Jan that Marie that book bought had
‘When did Jan say that Mary had bought the book?’
c′. *Wanneer$_i$ zei Jan niet [dat Marie dat boek t_i gekocht had]?
when said Jan not that Marie that book bought had
‘*When didn’t Jan say that Marie had bought the book?’

Erteschik-Shir (1973:95ff.) shows that adding negation to the matrix clause has the effect of defocusing the embedded clause; whereas example (335a) without negation can readily be used to introduce the proposition expressed by the embedded clause in the domain of discourse, example (335b) with negation is most naturally interpreted as the denial of the presupposed truth of the embedded proposition. This means that (335b), but not (335b′), is in accordance with the generalization that *wh*-extraction requires the embedded clause to be part of the °focus of the clause.

Since in general the addition of information to the matrix clause makes it more likely that the embedded clause is defocused, the generalization predicts that this may also have a degrading effect on *wh*-extraction. This may account for the contrast between the examples in (327), repeated here as (336). The verb *fluisteren* ‘to whisper’ is more informative than the verb *zeggen* ‘to say’ since it includes a manner component: Jan expressed his assertion *in a low voice*. In fact, adding a manner adverb like *zachtjes* ‘softly’ in (336c) seems to have a similar degrading effect on *wh*-extraction, a fact that seems to have escaped attention in the literature so far.

(336) a. Wat$_i$ zei Jan [$_{\text{CLAUSE}}$ dat Marie t_i gelezen had]?
what said Jan that Marie read had
‘What did Jan say that Marie had read?’
b. $^{??}$Wat$_i$ fluisterde Jan [$_{\text{CLAUSE}}$ dat Marie t_i gelezen had]?
what whispered Jan that Marie read had
‘What did Jan whisper that Marie had read?’
c. $^{??}$Wat zei Jan zachtjes [$_{\text{CLAUSE}}$ dat Marie t_i gelezen had]?
what said Jan softly that Marie read had
‘What did Jan say softly that Marie had read?’

Erteschik-Shir’s generalization is completely in line with the findings in Verhagen (2005:124ff.): on the basis of his corpus research mentioned at the end of Subsection I, he claims that attested cases of *wh*-extraction differ only minimally from what he assumes to be the basic template, which he takes to be the one given in (337). He further claims that “invented examples of *wh*-extractions are judged worse to the degree that they deviate more from the [..] pattern [in (337)]”.

(337) XP_{wh} - denk(en) - $pronoun_{2p}$ $[_{CP}$ dat ...]
think you that

The nature of the evidence reviewed above suggests to us that each of the two approaches has something different to contribute to the description of *wh*-extraction. The structural approaches may be correct in claiming that *wh*-extraction is subject to certain structural conditions, for example, that the embedded clause is a complement of the verb in the matrix clause. The semantic approaches, on the other hand, may be correct in postulating additional conditions on the use of *wh*-extraction constructions, for example, that the embedded clause is the focus of attention and therefore constitutes the new information of the clause, and that as a consequence the semantic contribution of the matrix clause must be limited.

5.1.7. Independently used argument clauses

Argument clauses are selected by some higher predicate by definition and we therefore expect them to occur as dependent clauses only. Nevertheless, it seems that they sometimes can occur independently. The discourse chunks in (338) show that this use is discourse-related in the sense that argument clauses can easily occur independently as an answer to a *wh*-question.

(338) a. [A] Peter is hier. [B] Wat zei je? [A] Dat Peter hier is.
Peter is here What said you that Peter here is
‘Peter is here. What did you say? That Peter is here.’
b. [A] Kom je nog? [B] Wat vroeg je? [A] Of je nog komt.
come you still what asked you whether you still come
‘Are you coming or not? What did you ask? Whether you’re coming or not.’
c. [A] Wat doe je? [B] Wat vroeg je? [A] Wat of je doet.
what do you what asked you what whether you do
‘What are you doing? What did you ask? What you’re doing.’

Such examples can of course be analyzed as cases in which the context allows omission of the underlined parts of the strings in *Ik zei dat Peter hier is* ‘I said that Peter is here’, *Ik vroeg of je nog komt* ‘I asked whether you are coming or not’, and *Ik vroeg wat of je doet* ‘I asked what you are doing ..’. A similar analysis seems possible for echo-questions of the type in (339), where we may assume that the underlined parts in *Je vraagt me of ik nog kom?* ‘Are you asking me whether I am coming or not?’ and *Je vraagt me wat ik doe?* ‘Are you asking me what I am doing?’ are omitted. We refer to De Vries (2001:514) and Den Dikken (2003:7) for more examples.

(339) a. [A] Kom je nog? [B] Of ik nog komt? I denk van niet.
come you still whether I still come I think of not
‘Are you coming or not? Whether I’m coming? I don’t think so.’
b. [A] Wat doe je? [B] Wat of ik doe? Niets.
what do you what whether I do noting
‘What are you doing? What I’m doing? Nothing.’

Independently used interrogative non-main clauses are also very common to express that the speaker is wondering about something. The main and non-main *wh*-clauses in (340) seem more or less interchangeable, although the latter has a stronger emotional load. This emotional load is also reflected by the fact that such independently used interrogative clauses typically contain some modal element like *nu weer*: example (340a′) is completely acceptable as a neutral *wh*-question; example (340), on the other hand, feels somewhat incomplete and is certainly not construed as a neutral *wh*-question, as is marked by means of the “$” diacritic.

(340) a. Wie heeft dat nu weer gedaan?
who has that PRT PRT done
‘Who has done that?’
a′. Wie heeft dat gedaan?
who has that done
‘Who has done that?’
b. Wie dat nu weer gedaan heeft!?
who that PRT PRT done has
‘Who (for heaven’s sake) has done that?’
b′. $^{\$}$Wie dat gedaan heeft!?
who that done has

A similar emotional load can be detected in the independently used declarative non-main clauses in the primed examples in (341); the speaker’s involvement is again clear from the fact that while the primeless examples can be used as more or less neutral assertions, the primed examples emphasize that the speaker makes a certain wish, is uncertain, feels a certain indignation, etc. De Vries (2001:518) argues that this may be a good reason for considering independently used non-main clauses as constructions in their own right. Another reason he gives is that such examples have intonational patterns that differ markedly from those of their embedded counterparts: for instance, (341a′) has a typical exclamation contour, (341b′) a question contour, and (341c′) allows various marked intonation patterns.

(341) a. Ik hoop [dat je er lang van genieten mag].
I hope that you there long of have.pleasure may
‘I hope you may enjoy it for a long time.’
a′. Dat je er lang van genieten mag! [wish]
b. Ik vraag me af [of dat nou een goed idee is].
I wonder REFL prt. whether that PRT a good idea is
‘I wonder whether that is such a good idea.’
b′. of dat nou een goed idee is? [uncertainty]
c. Ik begrijp niet [waar dat nou weer goed voor is].
I understand not where that prt again good for is
‘I don’t understand what’s the use of that.’
c′. Waar dat nou goed voor is … [indignation]

Independently used non-main clauses may also have highly specialized meanings or functions that their embedded counterparts lack. For example, when used as an answer to the question in (342), the independently used *of*-clause in (342b) expresses emphatic affirmation: the speaker is replying that he is eager to have the book in question. This use is so common that it would in fact suffice to answer (342) with *en* OF*!* ‘I sure do!’. Embedded *of*-clauses cannot perform this function, but simply express dependent questions.

(342) a. Wil je dit boek hebben?
want you this book have
‘Do you want to have this book?’
b. En OF ik dit boek wil hebben!
and whether I this book want have
‘I sure do want to have that book!’

Because discussing the interpretational implications of the independent uses of argument clauses would lead us into the domain of the conditions on actual language use (performance), we will not digress on this. This topic has received some attention in Cognitive Linguistics since Evans (2007): we refer the reader to Verstraete et al. (2012), Tejedor (2013), Van Linden & Van de Velde (2014), and the references cited therein.

5.1.8. Bibliographical notes

Although sentential complementation has been a central concern in syntactic research over the last fifty years, it is often difficult to pinpoint specific studies; often the data is already found in traditional grammars and discussed by many authors. Of course, it is possible to identify several (especially early) seminal studies like Kiparsky & Kiparsky (1970), Bresnan (1972), and Grimshaw (1979), but much of what is found in this (and the following) chapter has been developed over the years by various authors, and it is therefore easier to refer to specific studies during our discussions. Nevertheless, we want to highlight a number of studies we used in our discussion of a number of more special issues. The discussion of factivity in Section 5.1.2 is based on Kiparsky & Kiparsky (1970), supplemented by insights from Barbiers (2000) and Nye (2013). The discussion of reported speech/parenthetical clauses was heavily influenced by Corver (1994), Corver & Thiersch (2003), and De Vries (2006). The discussion of quotative and polar *van*-constructions has profited a great deal from Van Craenenbroeck (2002), Foolen et al. (2006), and Hoeksema (2006). The discussion of fragment clauses is heavily indebted to the seminal work of Merchant (2001/2006). For a discussion of the independent uses of argument clauses, we refer the reader to De Vries (2001), Verstraete et al. (2012), Tejedor (2013), and Van Linden & Van de Velde (2014).

5.2. Infinitival argument clauses

This section discusses infinitival complementation of main verbs. As to their form, infinitival °argument clauses can be divided into three main types: *om* + *te*-, *te*- and bare infinitivals. The first type, which will be discussed in Section 5.2.1, is formally characterized by the fact that the infinitive is preceded by the element *te* and that the full infinitival clause is (optionally) introduced by the element *om*, which is generally considered a complementizer. Some typical examples are given in (343), in which the infinitival clauses are in italics.

(343) a. Marie weigerde (*om*) *haar fiets te verwijderen*.
Marie refused COMP her bike to remove
'Marie refused to remove her bike.'
b. Jan beloofde (*om*) *dat boek te lezen*.
Jan promised COMP that book to read
'Jan promised to read that book.'

The second type, which will be discussed in Section 5.2.2 and is illustrated in (344), formally differs from the first one in that the infinitival complementizer *om* cannot be used; the infinitive, on the other hand, is preceded by the element *te*.

(344) a. Jan beweert (**om*) *dat boek gelezen te hebben*.
Jan claims COMP that book read to have
'Jan claims to have read that book.'
b. Jan verzekerde ons (**om*) *te mogen komen*.
Jan assured us COMP to be.allowed come
'Jan assured us that we were allowed to come.'

Given the optionality of the complementizer *om* in examples such as (343), it is sometimes not *a priori* clear whether we are dealing with an *om* + *te*- or a *te*-infinitival and Section 5.2.2.3 will therefore attempt to develop a number of diagnostics that may help us to make the desired distinction. This section will further show that there are a number of subtypes of *te*-infinitivals, which can be distinguished on the basis of a set of conspicuously distinctive formal properties.

The third type of infinitival clause, the bare infinitivals, is discussed in Section 5.2.3 and can readily be recognized by the fact that elements *om* and *te* are both obligatorily absent; we will see that, again, we can distinguish various subtypes.

(345) a. Jan moet *dat boek lezen*.
Jan must that book read
'Jan must read that book.'
b. Ik zag *Jan dat boek lezen*.
I saw Jan that book read
'I saw Jan read that book.'

The following sections will extensively discuss these three main types of infinitival clauses and show that they can be further divided into smaller subcategories on the basis of their semantic and syntactic properties.

5.2.1. Om + te-*infinitivals*

This section discusses the use of *om* + *te*-infinitivals as arguments of main verbs. Such clauses are formally characterized by the fact that they are headed by a *te*-infinitive and can be preceded by the "linker" element *om*. Furthermore, they always contain an implied subject, °PRO, which is normally coreferential with (°controlled by) the subject or the object of the °matrix clause, although it is sometimes also possible for it to receive a generic interpretation; examples are given in (346), in which coreference is indicated by means of coindexation and the index *arb*(*itrary*) is used to indicate that the generic reading is intended.

(346) a. Jan$_i$ beloofde Marie$_j$ [(om) PRO$_{i/*j}$ dat boek te lezen]. [subject control]
Jan promised Marie COMP that book to read
'Jan promised Marie to read that book.'
b. Jan$_i$ verzocht Marie$_j$ [(om) PRO$_{j/*i}$ dat boek te lezen]. [object control]
Jan requested Marie COMP that book to read
'Jan requested Marie to read that book.'
c. Jan keurt het af [(om) PRO$_{arb}$ te vloeken]. [generic interpretation]
Jan disapproves it prt. COMP to curse
'Jan disapproves of cursing.'

The discussion is organized as follows. Section 5.2.1.1 starts by showing that argument clauses in the form of an *om* + *te* infinitival have more or less the same distribution as finite argument clauses: they may have the same syntactic functions and normally follow the verb(s) in clause-final position. Section 5.2.1.2 continues with a discussion of the categorial status of the linker *om*, which has been analyzed as a regular preposition but also as a complementizer-like element; although this issue is still not settled, we will for convenience gloss *om* by means of COMP(LEMENTIZER) in the examples. Section 5.2.1.3 will conclude the discussion of *om* + *te* infinitivals by investigating the implied subject PRO and the restrictions on its interpretation in more detail.

5.2.1.1. The distribution of om + te-*infinitivals*

Infinitival argument clauses preceded by *om* have more or less the same distribution as finite argument clauses (cf. Sections 5.1); they can occur as direct objects, subjects and prepositional objects, but indirect object clauses are rare given that these usually refer to animate objects and/or institutions. Furthermore, *om* + *te*-infinitivals normally follow the verb(s) in clause-final position, although there are limited possibilities for them to be topicalized or left-dislocated.

I. Direct object clauses

Object clauses normally follow the verb(s) in clause-final position and can be optionally preceded by the anticipatory object pronoun *het* 'it'; placing the object clause in the °middle field of the clause generally leads to a highly degraded result. This is illustrated in the (a)-examples in (347) for finite and by the (b)-examples for infinitival clauses.

(347) a. dat Jan (het) besloot [dat hij het boek zou kopen].
that Jan it decided that he the book would buy
'that Jan decided (it) that he would buy the book.'
a′. $^{*?}$dat Jan [dat hij het boek zou kopen] besloot.
b. dat Jan (het) besloot [(om) PRO het boek te kopen].
that Jan it decided COMP the book to buy
'that Jan decided to buy the book.'
b′. *dat Jan [(om) PRO het boek te kopen] besloot.

For completeness' sake, the examples in (348) show that the object clauses of the verb *besluiten* 'to decide' can also appear as the complement of the corresponding nominalization *besluit* 'decision'.

(348) a. het besluit [dat hij het boek zou kopen]
the decision that he the book would buy
'the decision that he would buy the book'
b. het besluit [(om) PRO het boek te kopen]
the decision COMP the book to buy
'the decision to buy the book'

In (347), the object clause is an internal °argument of the verb *besluiten* 'to decide'. Direct object clauses can, however, also function as °logical SUBJECTs (external arguments) of adjectival °complementives. This is illustrated by means of the *vinden*-construction in (349); in these examples the °anticipatory pronoun *het* is obligatory and the object clause normally follows the verb(s) in clause-final position—placement of the object clause in the middle field leads to a severely degraded result.

(349) a. dat Jan *(het) vervelend vindt [dat hij niet kan komen].
that Jan it annoying considers that he not is.able come
'that Jan considers it annoying that he isn't able to come.'
a′. $^{*?}$dat Jan [dat hij niet kan to komen] vervelend vindt.
b. dat Jan *(het) vervelend vindt [(om) PRO niet te kunnen komen].
that Jan it annoying considers COMP not to be.able come
'that Jan considers it annoying not to be able to come.'
b′. *dat Jan [(om) PRO niet te kunnen komen] vervelend vindt.

II. Subject clauses

Subject clauses are possible if they originate as internal °arguments of the °matrix verb, as is clear from the fact illustrated in (350) that the primeless examples of the transitive constructions in (347) can be passivized. The passive construction can be impersonal, that is, introduced by the °expletive *er* 'there', or personal, that is, contain the anticipatory subject pronoun *het* 'it'. The primed examples in (350) show that subject clauses must follow the verb(s) in clause-final position; they cannot be placed in the regular subject position right-adjacent to the complementizer.

(350) a. dat er/het besloten werd [dat hij het boek zou kopen].
that there/it decided was that he the book would buy
'that it was decided that he would buy the book.'
a′. $^{*?}$dat [dat hij het boek zou kopen] besloten werd.
b. dat er/het besloten werd [(om) PRO het boek te kopen].
that there/it decided was COMP the book to buy
'that it was decided to buy the book.'
b′. *dat [(om) PRO het boek te kopen] besloten werd.

Subject clauses also occur in °dyadic °unaccusative constructions, in which they likewise originate as internal arguments of the verb. This is illustrated by means of the NOM-DAT object experiencer psych-verb *bevallen* ‘to please’ in (351); the primed examples show again that subject clauses cannot occur in the regular subject position. In these examples the anticipatory pronoun is obligatory and the expletive *er* cannot be used.

(351) a. dat het me niet bevalt [dat hij steeds dezelfde vraag stelt].
that it me not pleases that he constantly the.same question poses
‘that it displeases me that he’s asking the same question all the time.’
a′. $^{*?}$dat [dat hij steeds dezelfde vraag stelt] me niet bevalt.
b. dat het me niet bevalt [(om) PRO steeds dezelfde vraag te stellen].
that it me not pleases COMP constantly the.same question to pose
‘that it displeases me to ask the same question all the time.’
b′. $^{*?}$dat [om PRO steeds dezelfde vraag te stellen] me niet bevalt.

The examples in (352) show that the same thing holds for the NOM-ACC object experiencer psych-verb *vervelen* ‘to annoy’, provided that the subject functions as a cause (and not as a causer) argument; see Section 2.5.1.3 for an extensive discussion of these psych-verbs.

(352) a. dat het me verveelt [dat hij steeds dezelfde vraag stelt]$_{\text{cause}}$.
that it me annoys that he constantly the.same question poses
‘that it annoys me that he’s asking the same question all the time.’
a′. $^{*?}$dat [dat hij steeds dezelfde vraag stelt] me verveelt.
b. dat het me verveelt [(om) PRO steeds dezelfde vraag te stellen].
that it me annoys COMP constantly the.same question to pose
‘that it annoys me to ask the same question all the time.’
b′. *dat [om PRO steeds dezelfde vraag te stellen] me verveelt.

In the examples above, the subject clause is an argument of the matrix verb. Subject clauses can, however, also function as logical SUBJECTs (external arguments) of adjectival complementives, which is clear from the fact illustrated in (353) that the *vinden*-constructions in (349) can be passivized. The anticipatory pronoun *het* is normally obligatory and surfaces as the subject of the construction; placement of the subject clause in the regular subject position is impossible. Again, the expletive *er* cannot be used.

(353) a. dat het vervelend gevonden wordt [dat hij niet kan komen].
that it annoying considered is that he not is.able.to come
‘that it is considered annoying that he isn’t able to come.’
a′. $^{*?}$dat [dat hij niet kan komen] vervelend gevonden wordt.
b. dat het vervelend gevonden wordt [(om) PRO niet te kunnen komen].
that it annoying considered is COMP not to be.able.to come
‘that it is considered annoying not to be able to come.’
b′. *dat [(om) PRO niet te kunnen komen] vervelend gevonden wordt.

The same thing is illustrated by the copular constructions in (349); again, the anticipatory pronoun *het* is normally obligatory and it is impossible to place the subject clause in the regular subject position.

(354) a. dat het vervelend is [dat hij niet kan komen].
that it annoying is that he not is.able.to come
'that it is annoying that he isn't able to come.'
a′. *?dat [dat hij niet kan komen] vervelend is.
b. dat het vervelend is [(om) PRO niet te kunnen komen].
that it annoying is COMP not to be.able.to come
'that it is annoying not to be able to come.'
b′. *dat [(om) PRO niet te kunnen komen] vervelend is.

III. Prepositional object clauses

The examples in (355) show that finite and infinitival clauses can also be used as PO-clauses, in which case they can be introduced by an °anticipatory pronominal PP *er* + P. This pronominal PP can be omitted with certain verbs but not with all; see Section 2.3.1, sub VI, for detailed discussion. The primed examples show that complement clauses cannot appear in the middle field of the clause, regardless of whether or not *ernaar* is present.

(355) a. dat Jan (ernaar) verlangt [dat hij weer thuis is].
that Jan for.it craves that he again home is
'that Jan wishes that he's home again.'
a′. *?dat Jan (naar) [dat hij weer thuis is] verlangt.
b. dat Jan (ernaar) verlangt [(om) PRO weer thuis te zijn].
that Jan for.it craves COMP again home to be
'that Jan longs to be home again.'
b′. *dat Jan (naar) [om PRO weer thuis te zijn] verlangt.

For completeness' sake, the examples in (356) show that finite and infinitival clauses can also be used as prepositional complements of adjectives. The pronominal PP can be omitted with certain adjectives but not with all, and the complement clause cannot appear in the middle field of the clause.

(356) a. dat Jan (er) bang (voor) is [dat hij te laat komt].
that Jan there afraid of is that he too late comes
'that Jan is afraid (of it) that he'll be late.'
a′. *dat Jan bang (voor) [dat hij te laat komt] is.
b. Jan is (er) bang (voor) [(om) PRO te laat te komen].
Jan is there afraid of COMP too late to come
'Jan is afraid (of it) to be late.'
b′. *dat Jan bang (voor) [(om) PRO te laat te komen] is.

Interestingly, anticipatory pronominal PPs do not occur in noun phrases. The nominalizations of the primeless examples in (357) can only be combined with the pronominal PP *ernaar* if the clause is not realized. For completeness' sake, note that for some reason, nominalization gives rise to a somewhat marked result when the complement is a finite clause.

(357) a. het verlangen $^{?}$(*ernaar) [dat hij weer thuis is]
the craving for.it that he again at.home is
b. het verlangen (*ernaar) [(om) PRO weer thuis te zijn]
the craving for.it COMP again at.home to be
c. het verlangen (ernaar)
the craving for.it

IV. Topicalization and left dislocation

The previous subsections have shown that infinitival argument clauses preceded by *om* behave like their finite counterparts in that they normally follow the verb(s) in clause-final position, that is, that they cannot occur in the middle field of the clause. It is, however, possible to topicalize or left-dislocate the infinitival clause, although the options seem a bit more limited than in the case of finite argument clauses.

A. Object Clauses

Example (358a) shows that topicalizing a finite object clause is quite normal (provided that the anticipatory pronoun *het* is omitted), but that this leads to a marked result in the case of an infinitival clause; for some speakers examples such as (358b) improve when emphatic accent is assigned to some element in the infinitival clause, in this case *boek* 'book'.

(358) a. [Dat hij het boek zou kopen] besloot hij snel.
that he the book would buy decided he quickly
'That he would buy the book he decided quickly.'
b. $^{*?}$[(Om) PRO het boek te kopen] besloot hij snel.
COMP the book to buy decided he quickly

The contrast disappears, however, in °left-dislocation constructions, especially if there is some contrastively focused element in the left-dislocated clause. We illustrate this in (359) by means of contrastive accent on the direct object *het boek* 'the book', but it might equally well have been on the main verb *kopen* 'to buy'.

(359) a. [Dat hij het BOEK zou kopen], dat besloot hij snel.
that he the book would buy that decided he quickly
'That he would buy the book, that he decided quickly.'
b. [(om) PRO het BOEK te kopen], dat besloot hij snel.
COMP the book to buy that decided he quickly

A problem for passing judgments on the examples in (358) is that the resumptive pronoun *dat* in (359) is optional, as a result of which the distinction between topicalization and left dislocation rests entirely on intonation and meaning. First, topicalized phrases are typically part of a larger prosodic unit, including the finite verb in second position, while left-dislocated phrases typically constitute a prosodic unit on their own. Second, topicalized phrases typically refer to known information, whereas left-dislocated phrases typically refer to new or contrastively focused information.

B. Subject clauses

Subsection II has shown that subject clauses cannot occur in the regular subject position. This was illustrated by showing that such clauses cannot follow the complementizer in embedded clauses, and in (360) we show that they cannot follow the finite verb in second position either.

(360) a. Vaak verveelt het me [dat hij steeds dezelfde vraag stelt].
often annoys it me that he constantly the.same question poses
‘It often annoys me that he always asks the same question.’
a′. *?Vaak verveelt [dat hij steeds dezelfde vraag stelt] me.
b. Vaak verveelt het me [(om) PRO steeds dezelfde vraag te stellen].
often annoys it me COMP constantly the.same question to pose
‘It often annoys me to always ask the same question.’
b′. *Vaak verveelt [(om) PRO steeds dezelfde vraag te stellen] me.

In the literature we find different evaluations of examples in which infinitival subject clauses preceded by *om* occur in sentence-initial, that is, in topicalized position. Paardekooper (1986: 358) provides examples of the type in (361b) without any comment and it seems, indeed, that these are just as acceptable as examples such as (361a) with a finite subject clause.

(361) a. [Dat hij steeds dezelfde vraag stelt]$_{\text{cause}}$ verveelt me.
that he constantly the.same question poses annoys me
‘That he always asks the same question annoys me.’
b. [(Om) PRO steeds dezelfde vraag te moeten stellen] verveelt me.
COMP constantly the.same question to have.to pose annoys me
‘Always having to ask the same question annoys me.’

Dik (1985:35), on the other hand, claims that *om* + *te*-infinitivals of the type in (362b) are quite marked, especially if the linker element *om* is present. It is, however, not so clear whether this observation is valid for all speakers since some of our informants do accept examples like these.

(362) a. [Dat hij hier zwemt] is gevaarlijk.
that he here swims is dangerous
‘That he swims here is dangerous.’
b. %[(Om) hier te zwemmen] is gevaarlijk.
COMP here to swim is dangerous

In order to account for the contrast between the (b)-examples in (361) and (362), we might of course hypothesize that the prohibition against topicalization of infinitival subject clauses is restricted to cases in which the nominative subject is not an argument of the verb but the logical SUBJECT of a complementive adjective. However, this seems to go against Paardekooper’s (1985:117) judgment of example (363b), which does seem to have a similar status as example (363a) with a finite subject clause.

(363) a. [Dat ik even moest wachten] was niet zo vervelend.
that I a.while had.to wait was not so annoying
‘That I had to wait a while wasn’t so annoying.’
b. [Om even te moeten wachten] was niet zo vervelend.
COMP a.while to have.to wait was not so annoying
‘To have to wait a while wasn’t so annoying.’

For the moment, we therefore have to conclude that Dik’s categorical statement that infinitival clauses preceded by *om* cannot occupy the sentence-initial position is not supported by judgments of other speakers, and that infinitival subject clauses can in fact occupy this position (although they are cases which are judged as somewhat marked for unknown reasons). For completeness’ sake, the examples in (364) show that left dislocation of infinitival subject clauses always gives rise to an impeccable result.

(364) a. [(Om) PRO steeds dezelfde vragen te stellen], dat verveelt me.
COMP constantly the.same questions to pose that annoys me
‘To ask the same questions all the time, that annoys me.’
b. [(Om) hier te zwemmen], dat is gevaarlijk.
COMP here to swim that is dangerous
‘To swim here, that is dangerous.’
c. [Om even te moeten wachten], dat was niet zo vervelend.
COMP a.while to must wait that was not so annoying
‘To have to wait a while, that wasn’t so annoying.’

C. Prepositional object clauses

The primeless examples show that topicalization of PO-clauses is impossible, regardless of whether they are finite or infinitival. Left dislocation, on the other hand, gives rise to an impeccable result, as is shown by the primed examples.

(365) a. *[Dat hij weer thuis is] verlangt Jan (ernaar).
that he again at.home is craves Jan for.it
a′. [Dat hij weer thuis is], daar verlangt Jan naar.
that he again at.home is there craves Jan for
‘That he’s home again, Jan longs for it.’
b. *[(Om) PRO weer thuis te zijn] verlangt Jan (ernaar).
COMP again at.home to be craves Jan for.it
b′. [(Om) PRO weer thuis te zijn], daar verlangt Jan naar.
COMP again at.home to be there craves Jan for
‘To be home again, Jan longs for it.’

V. Conclusion

The previous subsections have shown that infinitival argument clauses exhibit syntactic behavior similar to finite argument clauses. First, they may function as subject, direct object and prepositional object. Second, they normally appear after the verb(s) in clause-final position and can be introduced by an anticipatory pronominal element in the middle field of the clause. The only difference seems to be related to topicalization; whereas topicalization of finite object clauses is easily possible, topicalization of object *om + te* infinitivals gives rise to degraded results. The same contrast has been claimed to hold for subject clauses but we have seen that there are many cases in which subject clauses can quite felicitously occur in sentence-initial position, and we therefore provisionally assumed that the reported contrast is not real. Finite and infinitival prepositional object clauses also behave in the same way in that they both resist topicalization. We also discussed left dislocation and showed that in this area there are no differences at all between finite clause and infinitival clauses preceded by *om*; left dislocation is always possible.

5.2.1.2. The categorial status of the element om

This section briefly discusses the linker element *om* that introduces *om + te*-infinitivals. The fact that *om* is optional in argument clauses has given rise to the claim that *om* is superfluous and should in fact be avoided, as was stated in the beginning of the 20th century by Den Hertog (1973:74-5). His advice was in fact not merely motivated by the optionality of *om*, but also because that he analyzed *om* as a regular preposition. Since subjects and direct objects are normally not introduced by the preposition *om*, the use of this preposition is claimed to be improper with infinitival subject and object clauses. Similarly, since prepositional objects are already introduced by fixed prepositions, the use of the additional preposition *om* with PO-clauses is claimed to be pleonastic in nature.

The claim that the linker *om* is prepositional in nature has also been defended in more recent years. Bennis & Hoekstra (1985), for example, argue for the prepositional status of *om* on the basis of the distribution of *om + te* infinitivals. Their point of departure is the observation extensively discussed in Section 5.2.1.1 that such infinitivals have the same distribution as finite clauses in their use as arguments of verbs, nouns or adjectives. There is, however, one conspicuous difference in the distribution of finite clauses and infinitival clauses preceded by *om*; whereas the former can be used as the complement of a preposition, the latter cannot. This is clear from the fact that examples such as (366b) are only acceptable if *om* is omitted.

(366) a. Na [dat Jan de wedstrijd gewonnen had] rustte hij uit.
after that Jan the match won had rested he prt.
'After Jan had won the match, he had a rest.'
b. Na [(*om) PRO de wedstrijd gewonnen te hebben] rustte Jan uit.
after COMP the match won to have rested Jan prt.
'After having won the match, Jan had a rest.'

Bennis & Hoekstra relate the ungrammaticality of example (366b) with *om* to the more general restriction that PPs normally cannot function as complements of prepositions; see Section P2.2, where we also discuss a small number of exceptions. If the linker element *om* is indeed prepositional, the contrast indicated in (366b) is covered by the same generalization.

A potential problem for the assumption that the linker element *om* is a preposition is that *om* does not add a clearly discernible meaning contribution; see Den Hertog's claim that *om* is superfluous. Therefore, if *om* is to have any function, it must be a syntactic one; this is explicitly stated by Dik (1985), who analyzes *om* as a relator, that is, an element marking a relation of syntactic dependency (selection). This position is not necessarily incompatible with the claim that *om* is prepositional in nature, given that prepositions are also used as relators when heading a prepositional object; like *om* in *om* + *te*-infinitivals, the functional preposition *op* in *Jan jaagt op herten* ‘Jan hunts for deer’ is semantically void and primarily used to indicate the thematic relation between the verb *jagen* ‘to hunt’ and the noun phrase *herten* ‘deer’. However, by categorizing *om* as a relator, Dik analyzes it as a functional element comparable to the complementizer *dat* ‘that’, which likewise signals a relation between a °matrix verb and a syntactic dependent, viz., a finite argument clause.

The claim that the linker element *om* functions as a complementizer-like element is compatible with Bennis & Hoekstra’s analysis since they do not claim that *om* heads an independent PP, but instead they situate it in the complementizer domain of the dependent clause. Pronominalization provides empirical evidence for the complementizer status of *om*; the examples in (367) show that the *om* + *te* infinitival behaves like a clause in that it must be pronominalized by *het* ‘it’, and cannot be pronominalized by *erom*, which would be expected if *om* were a regular preposition.

(367) a. Jan beloofde [om op tijd te komen] en Marie beloofde *dat* ook.
Jan promised COMP in time to come and Marie promised that too
‘Jan promised to be there on time and Marie promised that too.’
b. *Jan beloofde [om op tijd te komen] en Marie beloofde *erom* ook.
Jan promised COMP in time to come and Marie promised P+it too

Assuming that *om* functions as a complementizer is also compatible with attempts in generative grammar to provide a unified treatment of functional prepositions and complementizers. Since discussing this would lead us too far into complex theory-internal discussions, we refer the reader to Emonds (1985:ch.7) and Kayne (2000:part III) and simply conclude that *om* is a kind of in-between category; it is a preposition with complementizer-like properties or, *vice versa*, a complementizer with prepositional properties. This may be sufficient to account for the unacceptability of examples such as (366b) with *om*, while still avoiding the problem signaled by Den Hertog.

It should be pointed out that the acceptability contrast between infinitival clauses with and without *om* in (366b) shows that the omission/addition of *om* is not always innocuous. The same thing is shown by the fact illustrated in (368) that omitting *om* may make an infinitival object clause transparent; whereas (368a) shows that the complete clause preceded by *om* must follow the matrix verb in clause-final position, (368b) shows that the clause without *om* can be split by it. In the remainder of our discussion of *om* + *te* infinitivals, we will abstract away from these effects, but we will return to them in Section 5.2.2, where we discuss *te*-infinitivals without *om*.

(368) a. dat Jan <*dat boek> weigert om <dat boek> te lezen.
that Jan that book refuses COMP to read
‘that Jan refuses to read that book.’
b. dat Jan <dat boek> weigert <dat boek> te lezen.
that Jan that book refuses to read
‘that Jan refuses to read that book.’

Finally, it is important to note that while it is normally always possible to omit *om* from infinitival argument clauses, it is not always possible to add it to infinitival argument clauses without *om*. Example (369), for example, shows that the verb *beweren* ‘to claim’ cannot take an *om* + *te*-infinitival as its complement. Such cases will also be discussed in Section 5.2.2.

(369) Jan beweerde [(*om) PRO morgen te vertrekken].
Jan claimed COMP tomorrow to leave
‘Jan claimed to leave tomorrow.’

5.2.1.3. The implied subject PRO in om + te-*infinitivals*

This section is concerned with the implied PRO-subject in argumental *om* + *te*-infinitivals. We will begin in Subsection I with a more general discussion of the motivation to postulate a phonetically empty subject in (a specific subset) of infinitival clauses. Subsection II continues by showing that the implied PRO-subject must be assigned a °thematic role, just like any other nominal subject. Subsection III concludes with a comprehensive discussion of the interpretation of the implied PRO-subject. The main topic in this discussion is the question as to whether subject/object control in examples like (370a&b) should be considered a locally restricted °syntactic dependency. Our conclusion will be that this is not the case and that the factors determining the interpretation of the PRO-subject are instead determined by our knowledge of the world; cf. Van Haaften (1991:ch.4).

(370) a. Jan$_i$ beloofde Marie$_j$ [(om) PRO$_{i/*j}$ dat boek te lezen]. [subject control]
Jan promised Marie COMP that book to read
‘Jan promised Marie to read that book.’
b. Jan$_i$ verzocht Marie$_j$ [(om) PRO$_{j/*i}$ dat boek te lezen]. [object control]
Jan asked Marie COMP that book to read
‘Jan asked Marie to read that book.’
c. Jan keurt het af [(om) PRO$_{arb}$ te vloeken]. [generic interpretation]
Jan disapproves it prt. COMP to curse
‘Jan disapproves of cursing.’

I. Why assume a phonetically empty PRO-subject?

Finite and infinitival object clauses like those in (371) differ in that the former have an overtly expressed subject (here the pronoun *hij* ‘he’), whereas the latter have a semantically implied subject. That the subject is semantically implied is clear from the fact that the two examples express the same number of thematic relations; in the two examples the °matrix main verb *beloven* takes three arguments, the subject *Jan*, the direct object clause and the indirect object *Peter*, and the main verb *lachen* in the embedded clause takes one argument, which is expressed by the subject pronoun *hij* in the finite but remains unexpressed in the infinitival clause. This subsection shows that there are reasons for assuming that the semantically implied subject is actually syntactically present in the form of a phonetically empty noun phrase PRO; see Koster and May (1982), Paardekooper (1985/1986), Van Haaften (1991), and many others for similar arguments.

(371) a. Jan beloofde Peter [dat hij/*PRO niet zou lachen].
Jan promised Peter that he not would laugh
‘Jan promised Peter that he wouldn’t laugh.’
b. Jan beloofde Peter [(om) PRO/*hij niet te zullen lachen].
Jan promised Peter COMP not to will laugh
‘Jan promised Peter not to laugh.’

We begin by showing that the postulated subject PRO in (371b) has specific interpretative properties; it is just like the pronoun *hij* ‘he’ in (371a) in that it can be interpreted as coreferential with the subject, but not with the object of the matrix clause; we have made the interpretative restriction explicit in (372a) by means of indices. Example (372b) shows that these interpretational restrictions on PRO are not rigid, but depend on the matrix verb used: while the verb *beloven* ‘to promise’ in (372a) triggers a so-called SUBJECT CONTROL reading, the verb *verzoeken* ‘to request’ triggers an OBJECT CONTROL reading.

(372) a. Jan$_i$ beloofde Peter$_j$ [(om) PRO$_{i/*j}$ niet te lachen]. [subject control]
Jan promised Peter COMP not to laugh
‘Jan promised Peter not to laugh.’
b. Jan$_i$ verzocht Peter$_j$ [(om) PRO$_{j/*i}$ niet te lachen]. [object control]
Jan requested Peter COMP not to laugh
‘Jan asked Peter not to laugh.’

As such, the interpretational restrictions do not seem to require the postulation of a syntactic element PRO, as we may simply account for these facts by attributing them to the semantics of the two verbs involved, which seems inevitable anyway. The postulation of PRO does help, however, to solve another problem concerning the interpretation of referential and reflexive personal pronouns. First consider the examples in (373) that show that referential pronouns like *hem* and reflexive pronouns like *zichzelf* are normally in complementary distribution; whereas the reflexive *zichzelf* must be bound by (= interpreted as coreferential with) the subject of its own clause, the referential pronoun *hem* cannot, and while the referential pronoun can (optionally) be bound by some element external to its own clause, the reflexive cannot.

(373) a. Jan$_i$ vermoedt [dat Peter$_j$ over zichzelf$_{j/*i}$ praat].
Jan suspects that Peter about himself talks
‘Jan suspects that Peter is talking about himself.’
b. Jan$_i$ vermoedt [dat Peter$_j$ over hem$_{i/*j}$ praat].
Jan suspects that Peter about him talks
‘Jan suspects that Peter is talking about him.’

All of this was extensively discussed in Section N5.2.1.5, where it was accounted for by assuming that reflexives must be bound in a specific local anaphoric domain, while referential pronouns must be free (= not bound) in that domain. We repeat the two relevant °binding conditions in (374), and refer to N5.2.1.5, sub III, for a more detailed and more careful discussion of the notions of binding and local domain; it suffices for our present purposes to simply state that in examples such as (373) the relevant local domain is the embedded clause.

(374) a. Reflexive and reciprocal personal pronouns are bound in their local domain.
b. Referential personal pronouns are free (= not bound) in their local domain.

Now consider the examples in (375). Although the referential and the reflexive personal pronoun are in complementary distribution in these examples, the conditions in (374) seem to be violated: if we assume that the entire sentence is the local domain of the pronouns, the binding of the referential pronoun in example (375b) would violate condition (374b); alternatively, if the infinitival clause is assumed to be the local domain, the binding of the reflexive in example (375a) would violate condition (374a).

(375) a. Jan$_i$ beloofde Peter$_j$ (om) over zichzelf$_i$/*hem$_i$ te praten.
Jan promised Peter COMP about himself/him to talk
'Jan promised Peter to talk about himself.'
b. Jan$_i$ beloofde Peter$_j$ (om) over hem$_j$/*zichzelf$_j$ te praten.
Jan promised Peter COMP about him/himself to talk
'Jan promised Peter to talk about him.'

Now, also consider the examples in (376). Assuming that the examples in (375) and (376) have the same syntactic structure, they go against the otherwise robust generalization that referential and reflexive pronouns are normally in complementary distribution: The (a)-examples show that, depending on the matrix verb, the reflexive can in principle be bound by the subject or the object of the matrix verb, and the (b)-examples show that the same thing holds for the pronoun.

(376) a. Jan$_i$ verzocht Peter$_j$ (om) over zichzelf$_j$/*hem$_j$ te praten.
Jan requested Peter COMP about himself/him to talk
'Jan requested Peter to talk about himself.'
b. Jan$_i$ verzocht Peter$_j$ (om) over hem$_i$/*zichzelf$_i$ te praten.
Jan requested Peter COMP about him/himself to talk
'Jan requested Peter to talk about him.'

The advantage of postulating the implied subject PRO is that it solves the two problems discussed above and enables us to maintain the two conditions in (374) with no further ado. Consider the structures that should be assigned to the examples in (375), given in (377). Since the verb *beloven* 'to promise' triggers subject control, the implied subject PRO must be coindexed with the matrix subject *Jan*. As a result, the reflexive pronoun *zichzelf* in (377a) is bound and the referential pronoun *hem* in (377b) is free in its infinitival clause.

(377) a. Jan$_i$ beloofde Peter$_j$ [$_{\text{LOCAL DOMAIN}}$ (om) PRO$_i$ over zichzelf$_i$/*hem$_i$ te praten].
Jan promised Peter COMP about himself/him to talk
'Jan promised Peter to talk about himself.'
b. Jan$_i$ beloofde Peter$_j$ [$_{\text{LOCAL DOMAIN}}$ (om) PRO$_i$ over hem$_j$/*zichzelf$_j$ te praten].
Jan promised Peter COMP about him/himself to talk
'Jan promised Peter to talk about him.'

If we conclude from this that infinitival clauses are just like finite clauses in that they constitute a local domain for the pronouns they contain, all facts will follow. First, the subject of the matrix clause must be interpreted as coreferential with the reflexive pronoun, whereas the indirect object cannot. If the reflexive pronoun is interpreted as coreferential with the subject of the matrix clause, it will also be correctly bound in its local domain by the implied subject PRO; however, if it is bound by the indirect object of the matrix clause, it would be incorrectly free in its local domain. Second, the referential pronoun can be interpreted as coreferential with the indirect object but not with the subject of the clause: if the pronoun is interpreted by the indirect object, it is still free in its local domain, as required, but if it is coreferential with the subject, it will also be incorrectly bound by the implied subject PRO within its local domain.

Next, consider the structures in (378) that should be assigned to the examples in (376). Since the verb *verzoeken* 'to request' triggers object control, the implied subject PRO must be coindexed with the indirect object *Peter* of the matrix clause.

(378) a. Jan$_i$ verzocht Peter$_j$ [$_{\text{LOCAL DOMAIN}}$ (om) PRO$_j$ over zichzelf$_j$/*hem$_j$ te praten].
Jan requested Peter COMP about himself/him to talk
'Jan requested Peter to talk about himself.'
b. Jan$_i$ verzocht Peter$_j$ [$_{\text{LOCAL DOMAIN}}$ (om) PRO$_j$ over hem$_i$/*zichzelf$_i$ te praten].
Jan requested Peter COMP about him/himself to talk
'Jan requested Peter to talk about him.'

If we maintain the earlier conclusion that the infinitival clause constitutes a local domain for the pronouns it contains, the facts again follow. First, the indirect object of the matrix clause must be interpreted as coreferential with the reflexive pronoun, whereas the subject cannot. If the reflexive pronoun is interpreted as coreferential with the indirect object, it will also be correctly bound in its local domain by the implied subject PRO; however, if it is bound by the subject, it would be incorrectly free in its local domain. Second, the referential pronoun can be interpreted as coreferential with the subject but not with the indirect object of the matrix clause: if the pronoun is interpreted as coreferential with the subject, it is still free in its local domain, as required, but if it is coreferential with the indirect object, it will also be incorrectly bound by the implied subject PRO within its local domain.

A similar argument can be based on the behavior of the reciprocal personal pronoun *elkaar* 'each other', which is subject to the same binding condition as reflexive pronouns. In addition, the reciprocal is bound by a plural antecedent: see the contrast between *Jan en Marie groetten elkaar* 'Jan and Marie greeted each other' and **Jan groette elkaar* '*Jan greeted each other'. For our present purpose it is also important to note that the plurality requirement cannot be evaded by assuming that the reciprocal takes a "split" antecedent; an example such as (379a) is unacceptable and the intended assertion can only be expressed by the more complex construction in (379b), in which *elkaar* does have a plural antecedent.

(379) a. *Jan$_i$ stelt Peter$_j$ aan elkaar$_{i\&j}$ voor.
Jan introduces Peter to each.other prt.
b. [Jan en Peter]$_i$ stellen zich$_i$ aan elkaar$_i$ voor.
Jan and Peter introduce REFL to each.other prt.
'Jan and Peter introduce themselves to each other.'

The crucial observation is that the ban on split antecedents seemingly breaks down exactly in those cases in which the implied subject PRO is able to take a split antecedent. The verb *voorstellen* 'to propose' in (380a), for example, does allow an interpretation according to which Jan proposes that Marie and he himself will build a tree house; this reading can be forced by adding the modifier *samen* 'together'. Example (380b) shows that the verb *voorstellen* ostensibly forces a split-antecedent reading on the reciprocal. However, given that the true antecedent is the implied subject PRO of the infinitival clause, this should not be seen as a violation of the ban on split antecedents for reciprocals.

(380) a. Jan$_i$ stelde Els$_j$ voor [(om) PRO$_{i\&j}$ (samen) een boomhut te bouwen].
Jan proposed Els prt. COMP together a tree.house to build
'Jan proposed to Els to build a tree house together.'
b. Jan$_i$ stelde Els$_j$ voor [(om) PRO$_{i\&j}$ elkaar$_{i\&j}$ te helpen].
Jan proposed Els prt. COMP each.other to help
'Jan proposed to Els to help each other.'

To sum up, this subsection has shown that the postulation of an implicit PRO-subject in infinitival clauses is motivated by the fact that it enables us to maintain in full force a number of robust generalizations concerning binding of referential, reflexive and reciprocal personal pronouns. Without the postulation of PRO the formulation of a descriptive generalization concerning the distribution of these pronouns will become much more complex or even require special stipulations to handle cases of the sort discussed in this section.

II. Semantic restrictions on the implied PRO-subject and its controller

The claim in Subsection I that the PRO-subject of the infinitival clause is semantically implied is tantamount to stating that it is assigned a °thematic role by the infinitival verb. The examples in (381a-d) show that this thematic role can be agent if the infinitive is an (in)transitive, theme if the infinitive is an unaccusative, and goal if the infinitive is an °undative verb. The implied subject PRO can also be the SUBJECT (external argument) of a complementive like *aardig* 'kind' in (381e).

(381) a. Jan$_i$ probeert [(om) PRO$_i$ te slapen]. [agent]
Jan tries COMP to sleep
'Jan is trying to sleep.'
b. Jan$_i$ probeert [(om) PRO$_i$ Marie te helpen]. [agent]
Jan tries COMP Marie to help
'Jan is trying to help Marie.'

c. Jan$_i$ probeert [(om) PRO$_i$ niet te vallen]. [theme]
Jan tries COMP not to fall
‘Jan is trying not to fall.’
d. Jan$_i$ probeert [(om) PRO$_i$ het boek voor niets te krijgen]. [goal]
Jan tries COMP the book for free to get
‘Jan is trying to get the book for free.’
e. Jan$_i$ probeert [(om) PRO$_i$ aardig te zijn]. [SUBJECT of complementive]
Jan tries COMP kind to be
‘Jan is trying to be kind.’

Of course, there are a number of additional conditions that must be satisfied due to the semantic properties of the matrix verb. For example, the verb *proberen* ‘to try’ implies that the PRO-subject is able to control or at least consciously affect the °eventuality expressed by the infinitival argument clause. For this reason, sentences such as (382) are unacceptable or minimally trigger a stage context reading, that is, a context in which the event denoted by the verb is intentional (like falling in a training session) or involves pretense (like dying in a stage play).

(382) a. $^{\$}Jan_i$ probeert [(om) PRO$_i$ te vallen]. [theme]
Jan tries COMP to fall
‘Jan is trying to fall.’
b. $^{\$}Jan_i$ probeert [(om) PRO$_i$ te sterven]. [theme]
Jan tries COMP to die
‘Jan is trying to die.’

Furthermore, the controller of PRO should ideally be able to perform the eventuality denoted by the infinitival construction. The subject of the matrix clause in examples such as (383), for example, should not only satisfy the selection restrictions of the matrix verb *proberen* ‘to try’, but also those of the infinitival verb—it cannot refer to a single individual as this would not satisfy the selection restriction imposed by the infinitival verbs *zich verspreiden* ‘to spread’ and *omsingelen* ‘to surround’ that their subjects refer to larger sets of individuals (if headed by a count noun).

(383) a. De soldaten$_i$ proberen [(om) PRO$_i$ zich te verspreiden].
the soldiers try COMP REFL to spread
‘The soldiers are trying to disperse.’
a′. $^{\$}$De soldaat$_i$ probeert [(om) PRO$_i$ zich te verspreiden].
the soldier tries COMP REFL to spread
b. De soldaten$_i$ proberen [(om) PRO$_i$ het gebouw te omsingelen].
the soldiers try COMP the building to surround
‘The soldiers are trying to surround the building.’
b′. $^{\$}$De soldaat$_i$ probeert [(om) PRO$_i$ het gebouw te omsingelen].
the soldier tries COMP the building to surround

The fact established earlier that the implied PRO-subject may be assigned the thematic role of theme predicts that *om* + *te*-infinitivals can be passivized.

Sentences of this form do not seem to be very frequent and are perhaps slightly formal, but an example such as (384b) shows that this prediction is indeed correct.

(384) a. Marie werd gekozen tot voorzitter.
Marie was elected as chairman
b. Marie probeerde [(om) PRO$_i$ gekozen te worden tot voorzitter].
Marie tried COMP chosen to be as chairman
‘Mary tried to be elected Chair.’

It is important to note that although impersonal passivization is fully acceptable in Dutch, this is never possible with infinitival clauses. The contrast between (385a) and (385b) suggests that infinitival clauses differ from finite clauses in that they cannot be impersonal but must have a PRO-subject. Of course, one might want to explore the possibility that there is a PRO-subject in (385b) with a thematic role similar to that of the °expletive *er* in (385a) and claim that the unacceptability of (385b) is due to the fact that subject control would lead to an incoherent interpretation with *Marie* functioning as the subject of the impersonal passive. However, this would lead us to expect impersonal passivization of the matrix clause to improve the acceptability of the utterance, and example (385c) shows that this is not borne out. We therefore conclude that *om* + *te*-infinitivals must have a PRO-subject and that (385b) is unacceptable because it fails to meet this condition.

(385) a. Er werd gelachen in de zaal.
there was laughed in the hall
‘There was laughter in the hall.’
b. *Marie$_i$ probeerde [(om) gelachen te worden].
Marie tried COMP laughed to be
c. *Er werd geprobeerd [(om) gelachen te worden].
there was tried COMP laughed to be

III. Control of the implied PRO-subject

The implied PRO-subjects of argumental *om* + *te*-infinitivals are normally controlled by the subject or the object of the verbs selecting them, although there are cases in which the PRO-subject takes a split antecedent or receives a generic interpretation. One of the important questions in this subsection is whether these cases should be considered as instances of so-called obligatory and non-obligatory control. This question has received a wide variety of answers in the literature depending on the definition of these notions. Our point of departure will be the operational definition in (386), which will be more extensively discussed in Subsection A on the basis of a number of standard English examples.

(386) Obligatory control requires the antecedent of PRO to:
a. be overtly realized in the sentence containing PRO;
b. be local (a co-argument of the infinitival clause containing PRO);
c. be a °c-commanding nominal argument (subject or object);
d. be unique (cannot be “split”).

Object and subject control are illustrated in example in (387). Such examples are often considered as cases of obligatory control. Subsections B and C will investigate these control constructions in more detail and argue that we are dealing with obligatory control in the sense of (386) only in appearance.

(387) a. Jan$_i$ beloofde Els$_j$ [(om) PRO$_{i/*j}$ dat boek te lezen]. [subject control]
Jan promised Els COMP that book to read
'Jan promised Els to read that book.'
b. Jan$_i$ verzocht Els$_j$ [(om) PRO$_{j/*i}$ dat boek te lezen]. [object control]
Jan requested Els COMP that book to read
'Jan requested Els to read that book.'

According to the definition in (386), the examples in (388) are straightforward cases of non-obligatory control constructions: the PRO-subject in (388a) does not take a unique but a so-called split antecedent, which is constituted by both the subject and the object of the main clause, and in (388b) the antecedent does not have to be overtly realized, in which case PRO receives an arbitrary/generic interpretation. Cases like these will be discussed in Subsection D.

(388) a. Jan$_i$ stelde Els$_j$ voor [(om) PRO$_{i+j}$ samen te werken]. [split antecedent]
Jan proposed Els prt. COMP together to work
'Jan proposed to Els to collaborate.'
b. Jan$_i$ keurt het af [(om) PRO$_{arb}$ te vloeken]. [arbitrary interpretation]
Jan disapproves it prt. COMP to curse
'Jan disapproves of cursing.'

Our conclusion that we are not dealing with obligatory (that is, syntactically regulated) control in the examples in (388) raises the question as to what determines the type of control relation in *om* + *te*-infinitivals; this question will be the main topic of Subsection E.

Before we start our discussion, we want to point out that the definition of obligatory control in (386) is not uncontroversial; since the distinction between obligatory and non-obligatory control was introduced in Williams (1980), it has given rise to a great deal of theoretical discussion and individual researchers have drawn the dividing line at different places; Bennis & Hoekstra (1989a), for example, claim that (386a-c) are not decisive for establishing obligatory control (and they in fact claim the same for anaphor binding but their judgments leading to this conclusion are not shared by all speakers; cf. Van Haaften 1991 and Petter 1998).

We also wish to point out that the extensive lists of control verbs (that is, verbs taking an infinitival complement with a PRO-subject) in the following discussion are based on those found in Van Haaften (1991) and Petter (1998), but adapted to the classification of verbs in Table 1, which was proposed in Section 1.2.2, sub II, and Chapter 2.

Table 1: Classification of verbs according to the type of nominal arguments they take

	NAME USED IN THIS GRAMMAR	EXTERNAL ARGUMENT	INTERNAL ARGUMENT(S)
NO INTERNAL ARGUMENT	intransitive: *snurken* ‘to snore’	nominative (agent)	—
	impersonal: *sneeuwen* ‘to snow’	—	—
ONE INTERNAL ARGUMENT	transitive: *kopen* ‘to buy’	nominative (agent)	accusative (theme)
	unaccusative; *arriveren* ‘to arrive’	—	nominative (theme)
TWO INTERNAL ARGUMENTS	ditransitive: *aanbieden* ‘to offer’	nominative (agent)	dative (goal) accusative (theme)
	NOM-DAT: *bevallen* ‘to please’	—	dative (experiencer) nominative (theme)
	undative: *krijgen* ‘to get’	—	nominative (goal) accusative (theme)

A. Obligatory versus non-obligatory control

Obligatory control is normally assigned an operational definition; in order to be able to speak of obligatory control, the antecedent of PRO must at least satisfy the four restrictions in (386), repeated here as (389).

(389) Obligatory control requires the antecedent of PRO to:
a. be overtly realized in the sentence containing PRO;
b. be local (a co-argument of the infinitival clause containing PRO);
c. be a c-commanding nominal argument (subject or object);
d. be unique (cannot be “split”).

These properties of obligatory control will be illustrated by means of the English examples in (390) to (392). The examples in (390) show that the antecedent must be overtly realized in the sentence containing PRO; cf. Bresnan (1982) and Manzini (1983). Example (390a′) shows that passivization, and the concomitant demotion of the subject, is impossible in subject control constructions, while example (390b″) indicates that omission of the nominal object is impossible in object control structures. We use the index “?” to indicate that this is due to there being no suitable controller available in the syntactic structure.

(390) a. John$_i$ promised Bill$_j$ [PRO$_{i/*j}$ to shave himself$_i$]. [subject control]
a′. *Bill$_j$ was promised [PRO$_?$ to shave himself$_?$].
a″. John$_i$ promised [PRO$_i$ to shave himself].
b. John$_i$ asked Bill$_j$ [PRO$_{j/*i}$ to shave himself$_j$]. [object control]
b′. Bill$_j$ was asked [PRO$_j$ to shave himself].
b″. *John$_i$ asked [PRO$_?$ to shave himself$_?$].

That the antecedent of PRO must be a co-argument of the infinitival clause containing PRO can be illustrated by means of the examples in (391), which show that the unacceptable examples in (390) cannot be saved by embedding them in a larger sentence that does have a potential antecedent of PRO; since the antecedent must be within the clause headed by the subject/object control verbs *to promise* and *to ask*, the subjects of the main clauses headed by *to think* cannot function as such.

(391) a. *John$_i$ thinks [that Bill$_j$ was promised [PRO$_i$ to shave himself$_i$]].
b. *Bill$_j$ thinks [that John$_i$ asked [PRO$_j$ to shave himself$_j$]].

That the antecedent of PRO must be a °c-commanding nominal argument (subject or indirect object) is clear from the fact that the passive counterpart of (390a′) does not improve when we add an agentive *by*-phrase: *_Bill$_j$ was promised by John$_i$ [PRO$_i$ to shave himself$_i$]_ is unacceptable because the antecedent of PRO is not a nominal argument of the matrix verb but part of the adverbial agentive *by*-phrase. Finally, the unacceptability of the examples in (392) shows that the antecedent of PRO must be unique in the sense that PRO cannot have a split antecedent.

(392) a. *John$_i$ promised Bill$_j$ [PRO$_{i+j}$ to leave together].
b. *John$_i$ asked Bill$_j$ [PRO$_{i+j}$ to leave together].

It is normally assumed that obligatory control requires that all four restrictions be satisfied. The theoretical motivation is that obligatory control is comparable to °binding of reflexive pronouns and °NP-movement to subject position in passive, unaccusative and raising constructions. All of these exhibit properties of locally restricted syntactic dependencies are characterized by being obligatory (which derives property (389a)), local (which derives property (389b)), involve °c-command (which derives property (389c)), and unique (which derives property (389d)); see Koster (1984a/1984b) for a more extensive discussion. Consequently, it is sufficient to show for just one of the restrictions in (389) that it does not hold in order to establish that we are dealing with non-obligatory control.

B. Subject Control

By definition, subject control verbs must be minimally dyadic: they must have an infinitival argument clause as well as a subject that functions as the antecedent of the implied PRO-subject. This is consistent with the fact that subject control verbs are normally transitive or ditransitive verbs, or verbs taking a prepositional object clause. In (393), we give a small sample of transitive subject control verbs.

(393) Transitive verbs: *aandurven* ‘to dare’, *aankunnen* ‘to be up to’, *afzweren* ‘to renounce’, *begeren* ‘to desire’, *beogen* ‘to aim at’, *bestaan* ‘to have the nerve, doorzetten ‘to go ahead with’, *leren* ‘to learn’, *durven* ‘to dare’, *pogen* ‘to try’, *nalaten* ‘to refrain’, *ontwennen* ‘to break one’s habit’, *overwegen* ‘to consider’, *proberen* ‘to try’, *popelen* ‘to be eager’, *pretenderen* ‘to pretend’, *schuwen* ‘to shun’, *trachten* ‘to try’, *vermijden* ‘to avoid’, *verzuimen* ‘to fail’, *wagen* ‘to dare’, *weigeren* ‘to refuse’, *uitproberen* ‘to test’, *uitstellen* ‘to postpone’, *verafschuwen* ‘to abhor’, *verdienen* ’to deserve’, *verdragen* ‘to endure’, *verdommen* ‘to flatly refuse’, *vergeten* ‘to forget’, *verleren* ‘to lose the hang of’, *vermijden* ‘to avoid’, *vertikken* ‘to refuse’, *verzaken/verzuimen* ‘to neglect one’s duty’, *wagen* ‘to dare’, *weigeren* ‘to refuse’

In (394), we provide two concrete examples. Note that they may contain the °anticipatory pronoun *het* ‘it’ introducing the infinitival object clause. This pronoun is normally optional but some verbs in (393) require it to be present; this holds especially for particle verbs like *aandurven* ‘to dare’ and *afzweren* ‘to renounce’, and some of the verbs prefixed with *be-* (*bestaan* ‘to have the nerve’), *ont-* (*ontwennen* ‘to break one’s habit’), and *ver-* (*vertikken* ‘to refuse’, *verleren* ‘to lose the hang of’). At first sight, the primeless examples in (394) seem to be good candidates for obligatory control constructions: the antecedent of PRO is local, a nominal argument (subject) and unique. However, it turns out that the antecedent is not obligatory: the primed examples show that examples such as (394) can readily be passivized.

(394) a. Jan$_i$ probeert (het) [(om) PRO$_i$ Marie te bereiken].
Jan tries it COMP Marie to reach
‘Jan tries to contact Marie.’
a′. Er werd geprobeerd [(om) PRO$_{arb}$ Marie te bereiken].
there was tried COMP Marie to reach
b. Jan$_i$ vergat (het) [(om) PRO Marie in te lichten].
Jan forgot it COMP Marie prt. to inform
‘Jan forgot to inform Marie.’
b′. Er is vergeten [(om) PRO$_{arb}$ Marie in te lichten].
there is forgotten COMP Marie prt. to inform

Passive examples of the kind in (394) are in fact quite frequent on the internet: A Google search (11/15/2012) on the strings [*er werd/is geprobeerd om*] ‘it was/has been tried’ and [*er werd/is vergeten om*] ‘It was/has been forgotten’ resulted in more than one million hits for both cases. The other verbs in (393) seem to allow passivization as well when they take an *om* + *te*-infinitival as a direct object. If obligatory control indeed requires that all four properties are met, we have to conclude that the primeless examples in (394) are non-obligatory control constructions.

There are not many ditransitive subject control verbs that may take an *om* + *te*-infinitival clause as a direct object. The set given in (395) seems to exhaust the possibilities. Note in passing that this set of subject control verbs can be extended as a result of so-called control shift: we will ignore this issue here but return to it in Subsection E.

(395) Ditransitive verbs: *aanbieden* ‘to offer’, *beloven* ‘to promise’, *toezeggen* ‘to promise’

At first sight, we again seem to be dealing with obligatory control: the antecedent of PRO is local, a nominal argument (subject) and unique. But again it turns out that the antecedent is not obligatory, in the sense that the three verbs in (395) can all be passivized: Our Google search on the strings [*er werd/is * aangeboden om*], [*er werd/is * beloofd om*] and [*er werd/is * toegezegd om*] again resulted in more than one million hits for all cases. The acceptability of passivization, which is illustrated in (396) for *aanbieden* ‘to offer’ and *beloven* ‘to promise’, once more shows that we are dealing with non-obligatory control constructions.

(396) a. Marie$_i$ bood Peter$_j$ aan [om PRO$_{i/*j}$ hem te helpen met zijn huiswerk].
Marie offered Peter prt. COMP him to help with his homework
'Marie offered Peter to help him with his homework.'

a′. Er werd Peter$_j$ aangeboden [om PRO$_{i/*j}$ hem te helpen met zijn huiswerk].
there was Peter prt.-offered COMP him to help with his homework

b. Jan$_i$ beloofde Els$_j$ [(om) PRO$_{i/*j}$ de computer gebruiksklaar te maken].
Jan promised Els COMP the computer ready.for.use to make
'Jan promised Els to make the computer ready for use.'

b′. Er werd Els$_j$ beloofd [(om) PRO$_{arb}$ de computer gebruiksklaar te maken].
there was Els promised COMP the computer ready.for.use to make

For completeness' sake, we want to note that under specific conditions the verbs in (395) are also compatible with object control; we ignore this for the moment but return to it in Subsection E.

Subject control also occurs with verbs taking a prepositional object. Section 2.3 has shown that such PO-verbs can be intransitive, transitive or unaccusative. A sample of each type is given in (397); like regular ditransitive verbs, ditransitive PO-verbs are not very common as subject control verbs; the only case we have found is *dreigen (met)* 'to threaten' and even this verb is very often (perhaps even normally) used without a nominal object. Note that the infinitival clause can be optionally introduced by an °anticipatory pronominal PP; whether this PP is obligatory, optional or preferably left implicit depends on the verb in question and may also vary from person to person; see Section 2.3 for more discussion.

(397) Intransitive PO-verbs: *aarzelen (over)* 'to hesitate about', *afzien van* 'to give up', *berusten (in)* 'resign oneself to', *besluiten (tot)* 'to decide', *denken (over)* 'to think about', *hopen (op)* 'to hope for', *houden (van)* 'to love', *kiezen (voor)* 'to opt (for)', *oppassen (voor)* 'to beware of', *overhellen (tot)* 'to incline', *piekeren (over)* 'to fret (about)', *smachten (naar)* 'to yearn (for)', *streven (naar)* 'to strive (after)', *verlangen (naar)* 'to long for'

b. Transitive PO-verbs: *dreigen (met)* 'to threaten with'

c. Unaccusative PO-verbs: *afknappen (op)* 'to get fed up with', *ontkomen (aan)* 'to escape from', *openstaan (voor)* 'to be open for', *slagen (in)* 'to succeed in', *toekomen (aan)* 'to get round to', *terugdeinzen* 'to flinch', *terugschrikken (voor)* 'to recoil', *wennen (aan)* 'to get used to'

The examples in (398) show that intransitive PO-verbs that allow passivization also do so when they take an *om* + *te*-infinitival as prepositional object; a Google search on the string [*er wordt/is (naar) gestreefd om*] results in numerous relevant hits.

(398) a. Els$_i$ streeft (ernaar) [(om) PRO$_i$ volgende week klaar te zijn].
Els strives after.it COMP next week ready to be
'Els aims at being ready next week.'

b. Er wordt (naar) gestreefd [(om) PRO$_{arb}$ volgende week klaar te zijn].
there is after strived COMP next week ready to be

Given that *dreigen (met)* is the only transitive PO-verb that triggers subject control, it is hard to determine whether such verbs allow passivization, especially since examples such as (399b) are at best marginally acceptable. What we can conclude from this is unclear: since *dreigen (met)* is normally used without a nominal object, it need not surprise us that it is normally the impersonal variant in (399b′) that is used. For want of sufficient evidence, we have to leave the question unresolved as to whether transitive PO-verbs involve obligatory or non-obligatory control.

(399) a. Marie$_{i}$ dreigt Jan$_{j}$ (ermee) [(om) PRO$_{i/*j}$ te vertrekken].
Marie threatens Jan with.it COMP to leave
‘Marie is threatening Jan to leave.’
b. $^{??}$Jan$_{j}$ wordt (ermee) gedreigd [(om) PRO$_{arb}$ te vertrekken].
Jan is with it threatened COMP to leave
b′. Er wordt (mee) gedreigd [(om) PRO$_{arb}$ te vertrekken].
there is with threatened COMP to leave

Despite the somewhat unclear status of example (399b), the acceptability of the other passive examples in (394), (396), (398) and (399) unambiguously shows that we are dealing with non-obligatory control constructions. There are of course also a reasonable number of unaccusative subject control verbs, but these do not shed any light on the question as to whether we are dealing with obligatory or non-obligatory control, given that they do not allow passivization anyway. The examples in (400) therefore simply serve to illustrate the use of these verbs.

(400) a. Marie$_{i}$ is erin geslaagd [(om) PRO$_{i}$ de computer te repareren].
Marie is in.it succeeded COMP the computer to repair
‘Marie has managed to repair the computer.’
b. Jan$_{i}$ is eraan gewend [(om) PRO$_{i}$ veel te reizen].
Jan is to.it used COMP a.lot to travel
‘Jan is used to frequent traveling.’

It should be noted, however, that Section 2.3.2, sub IV, mentioned a number of potentially unaccusative PO-verbs that are special in allowing passivization. Some of these verbs (*aanvangen/beginnen (met)* ‘to start with’, *ophouden/stoppen (met)* ‘to stop with’, *overgaan (tot)* ‘to proceed to’) can be used as subject control verbs and then retain their ability to undergo passivization. This shows that subject control structures of the sort discussed here do not involve obligatory control.

(401) a. De gemeente$_{i}$ is ermee gestopt [(om) PRO$_{i}$ papier in te zamelen].
the municipality is with.it stopped COMP paper prt. to collect
‘The municipality has stopped collecting waste paper.’
b. Er wordt mee gestopt [(om) PRO$_{arb}$ papier in te zamelen].
there is with stopped COMP paper prt. to collect
‘Stopping the collection of waste paper is being considered.’

A final set of verbs that seem to trigger subject control are the inherently reflexive verbs in (402). Such verbs do not shed any light on the question as to whether subject control with verbs taking an *om* + *te*-infinitival as complement involve obligatory control given that inherently reflexive verbs never undergo passivization.

(402) Inherently reflexive verbs; *zich aanwennen* ‘to get used to’, *zich bedwingen* ‘to restrain’, *zich beijveren (voor)* ‘to apply oneself to’, *zich generen (voor)* ‘to feel embarrassed’, *zich richten (op)* ‘to concentrate oneself on’, *zich toeleggen (op)* ‘to apply oneself to’, *zich verzetten (tegen)* ‘to resist’, *zich veroorloven* ‘to permit’, *zich verwaardigen (tot)* ‘to deign’, *zich voornemen* ‘to resolve’, *zich zetten tot* ‘to put one’s mind to’

In fact, it is not entirely clear whether we are really dealing with subject control in cases such as this, depending as it does on whether one is willing to assign argument status to the weak reflexive. If so, one might as well assume that the subject control reading is mediated by the reflexive, in which case one might claim that we are dealing with object control in the examples in (403).

(403) a. Jan$_i$ veroorlooft het zich$_i$ [(om) PRO$_i$ tweemaal op vakantie te gaan].
Jan allows it REFL COMP twice on holiday to go
‘Jan allows himself to go on holiday twice.’

b. Jan$_i$ geneert zich$_i$ ervoor [(om) PRO$_i$ over seks te praten].
Jan feels.embarrassed REFL about.it COMP about sex to talk
‘Jan feels embarrassed to talk about sex.’

For completeness’ sake, we want to note that undative verbs are not used as subject control verbs for the simple reason that verbs like *hebben* ‘to have’, *krijgen* ‘to get’ and *houden* ‘to keep’ do not take infinitival complements.

C. Object control

Object control verbs must be at least dyadic by definition: they must have an infinitival argument clause as well as an object that functions as the antecedent of the implied PRO-subject. Table 1 shows that object control verbs with an external argument are normally ditransitive, unless they take an additional prepositional object, in which case they can also be transitive; we give a small sample of such object control verbs in (404).

(404) a. Ditransitive verbs: *aanbevelen* ‘to recommend’, *aanleren* ‘to teach’, *aanraden* ‘to advise’, *adviseren* ‘to advise’, *afraden* ‘to advise against’, *beletten* ‘to prevent’, *bevelen* ‘to order’, *gebieden* ‘to order’, *misgunnen* ‘to envy’, *ontraden* ‘to advise against’, *opdragen* ‘to assign’, *toelaten* ‘to allow’, *toestaan* ‘to permit’, *verbieden* ‘to forbid’, *verhinderen* ‘to prevent’, *verzoeken/vragen* ‘to request’

b. Transitive PO-verbs: *aanmanen/aansporen/aanzetten (tot)* ‘to urge on’, *activeren (tot)* ‘to activate’, *belasten (met)* ‘to put in charge of’, *belemmeren (in)* ‘to impede’, *dwingen (tot)* ‘to force’, *helpen (met)* ‘to help with’, *machtigen (tot)* ‘to authorize’, *herinneren (aan)* ‘to remind of’, *ophitsen (tot)* ‘to incite’, *oproepen (to)* ‘to call upon someone (to)’, *overhalen (tot)* ‘to persuade’, *overreden (tot)* ‘to persuade’, *stimuleren (tot)* ‘to stimulate’, *stijven (in)* ‘to confirm someone in’, *uitdagen (tot)* ‘to challenge’, *uitnodigen (tot)* ‘to invite/ask’, *verleiden (tot)* ‘to tempt to’, *verplichten (tot)* ‘to oblige to’, *waarschuwen (voor)* ‘to alert’

Note in passing that some of the verbs in (404a) are also compatible with subject control; instances are *verzoeken/vragen* ‘to request’ and *overreden* ‘to persuade’. We will postpone discussion of this to Subsection E.

The examples in (405) provide a concrete case of object control with a ditransitive verb and show that passivization is readily allowed. It is, however, not immediately clear whether this shows that we are dealing with non-obligatory control. One might argue that promotion of the infinitival clause to subject destroys the °c-command relation between the indirect object and the PRO-subject; indirect objects do not c-command subjects, but one might also argue that we are dealing with a °reconstruction effect, that is, that it is not the surface but the underlying representation that matters. The latter option can, however, be countered (on more or less theory-internal grounds) by pointing out that °NP-movement in passive, unaccusative and raising constructions is often claimed not to exhibit such effects, so that we would have to introduce special stipulations for these cases of object control.

(405) a. Jan$_{i}$ raadde Marie$_{j}$/haar$_{j}$ af [(om) PRO$_{j}$ in de rivier te zwemmen].
Jan advised Marie/her against COMP in the river to swim
‘Jan advised Marie/her against swimming in the river.’
b. Er werd Marie$_{j}$/haar$_{j}$ aangeraden [(om) PRO$_{j}$ dat boek te lezen].
there was Marie/her prt.-advised COMP that book to read

A more conclusive reason for assuming that we are not dealing with obligatory control is that the indirect object is often omitted. Our Google search has shown that strings like [*(Subject) raad(t)/raden af om*] ‘(Subject) advise(s) against’ and its passive counterpart [*Er wordt afgeraden om*] are very frequent: the former occurs over one million and the second over 100.000 times. It should be noted, however, that not all verbs allow the omission of the indirect object: this seems to give less felicitous results with the verbs *beletten* ‘to prevent’, *misgunnen* ‘to envy’, *opdragen* ‘to assign’, *toelaten* ‘to allow’ and *verhinderen* ‘to prevent’ (where the actual judgments may vary from verb to verb and speaker to speaker).

The examples in (405) provide a concrete case of object control with a transitive PO-verb and shows that passivization is readily allowed. This does not provide evidence against an obligatory control analysis, but it does show that the notion of object control should be taken with a pinch of salt; it is clearly not the syntactic function of the antecedent that is at stake but its semantic function.

(406) a. Marie$_{i}$ roept ons$_{j}$ op [(om) PRO$_{j}$ naar het feest te komen].
Marie appeals us prt. COMP to the party to come
‘Marie calls upon us to come to the party.’
b. We$_{j}$ worden opgeroepen [(om) PRO$_{j}$ naar het feest te komen].
we are prt.-appeal COMP to the party to come
‘We’re called upon to come to the party.’

That we are dealing with non-obligatory control is clear, however, from the fact that the antecedent is often omitted. Our Google search has shown that strings like [*(Subject) roep(t)/roepen op om*] ‘(Subject) appeal(s)’ and its passive counterpart [*Er wordt opgeroepen om*] are very frequent: the former occurs over one million and the second over 100 times. It should be noted, however, that not all verbs allow the omission of the direct object: this seems to give less felicitous results with the verbs *activeren (tot)* ‘to activate’, *belemmeren (in), dwingen (tot)* ‘to force’, *machtigen (tot)* ‘to authorize’, *herinneren (aan)* ‘to remind of’, *overhalen (tot)* ‘to persuade’, *overreden (tot)* ‘to persuade’, *overtuigen van* ‘to convince of’, *stijven *(in ...)* ‘to confirm someone in’, *uitdagen (tot)* ‘to challenge’, *uitnodigen (tot)* ‘to invite to’, *verleiden (tot)* ‘to tempt to’, *verplichten (tot)* ‘to oblige to’ (where the actual judgments may again vary from verb to verb and speaker to speaker).

Since we have seen that the ditransitive verbs in (404) retain the possibility of passivization if they take an *om* + *te*-infinitival as direct object, it is no surprise that there are also dyadic unaccusative (NOM-DAT) verbs selecting *om* + *te*-infinitivals; in both cases the infinitival clause is an internal argument of the verb that is promoted to subject. Section 2.1.3, sub II, has shown that there are two types of NOM-DAT and both indeed include object control verbs.

(407) a. NOM-DAT verbs selecting *zijn* ‘to be’: (*gemakkelijk*) *afgaan* ‘to come easy to’, (e.g., *goed*) *bekomen* ‘to agree with’, *bevallen* ‘to please’, *lukken* ‘to succeed’, *meevallen* ‘to turn out better/less difficult than expected’, *ontgaan* ‘to escape’, *ontschieten* ‘to slip one’s mind’, *tegenvallen* ‘to disappoint’, (*goed*) *uitkomen* ‘to work out well’

b NOM-DAT verbs selecting *hebben* ‘to have’: *aanspreken* ‘to appeal’, *aanstaan* ‘to please’, *behagen* ‘to please’, *berouwen* ‘to regret’, *betamen* ‘to befit’, (e.g., *goed*) *liggen* ‘to appeal to’, *schaden* ‘to do damage to’, *spijten* ‘to regret’, *tegenstaan* ‘to pall on’, (*niet*) *zinnen* ‘to (not) please’

Two concrete examples of the object control version of these verb types are given in (408). Of course, passivization cannot be used to demonstrate that we are dealing with non-obligatory control, given that passivization of unaccusative verbs is impossible anyway.

(408) a. Het bevalt hem$_i$ goed [(om) PRO$_i$ hier te wonen].
it pleases him well COMP here to live
‘It pleases him to live here.’
b. Het spreekt hem$_i$ aan [(om) PRO$_i$ hier te wonen].
it appeals him prt. COMP here to live
‘It appeals to him to live here.’

However, it should be clear from the fact that the antecedent can often be omitted that we are dealing with non-obligatory control. Our Google search has shown that strings like [*het bevalt goed om*] ‘it pleases’ and [*het spreekt aan om*] ‘it appeals’ occur regularly: the former string resulted in about 70 hits and the latter in about 20. It should be noted, however, that in these cases there seems to be a preference to construe PRO as referring to the speaker. Moreover, the omission of the indirect object seems to give less felicitous results with the verbs (*gemakkelijk*) *afgaan* ‘to come easy to’, (e.g., *goed*) *bekomen* ‘to agree with’, *ontgaan* ‘to escape’, *ontschieten* ‘to slip one’s mind’, *aanstaan* ‘to please’, *behagen* ‘to please’, *berouwen* ‘to regret’, *betamen* ‘to befit, tegenstaan ‘to pall on’, (*niet*) *zinnen* ‘to (not) please' (where the actual judgments may again vary from verb to verb and speaker to speaker).

To conclude, we want to note that the vast majority of causative object experiencer psych-verbs discussed in Section 2.5.1.3, sub II, that is, verbs of the type *amuseren* 'to amuse', *bemoedigen* 'to encourage', *boeien* 'to fascinate', *ergeren* 'to annoy', *fascineren* 'to fascinate', *grieven* 'to hurt', etc. can be used as object experiencer verbs with the *om* + *te*-infinitival functioning as a cause. Again, passivization cannot be used to demonstrate that we are dealing with non-obligatory control as passivization of causative object experiencer psych-verbs is impossible anyway (cf. Section 2.5.1.3, sub IID), but it is supported by the fact that the object can be omitted in various cases (with actual judgments again varying from verb to verb and speaker to speaker).

(409) a. Het irriteert me$_i$ [(om) PRO$_i$ steeds verhalen te horen over haar hond].
it annoys me COMP always stories to hear about her dog
'It annoys me to hear stories about her dog all the time.'
a′. Het irriteert [(om) PRO$_{arb}$ steeds verhalen te horen over haar hond].
it annoys COMP always stories to hear about her dog
b. Het vertedert me$_i$ [(om) PRO$_i$ zo'n jonge hond te zien spelen].
it touches me COMP such.a young dog to see play
'I find it endearing to see to see such a puppy play.'
b′. Het vertedert [(om) PRO$_{arb}$ zo'n jonge hond te zien spelen].
it touches COMP such.a young dog to see play

D. PRO-subjects with split antecedents or arbitrary reference

This subsection discusses a number of cases that are often assumed to involve non-obligatory control. More specifically, we will discuss cases violating the uniqueness requirement on obligatory control in (389d) by allowing PRO to take a split antecedent as well as cases violating the overt antecedent requirement in (389a) by allowing PRO to receive an arbitrary interpretation.

1. Verbs that allow PRO to have split antecedents

Example (410) provides a number of verbs that allow split antecedents. The verbs in (410) are of two types.

(410) • Verbs that allow PRO to have split antecedents
a. Ditransitive verbs: *aanbieden* 'to offer', *voorstellen* 'to propose'
b. Transitive verbs with a comitative *met*-PP: *afspreken (met)* 'to agree (on)', *overeenkomen (met)* 'to agree'

The first type of control verbs that allow split antecedents is ditransitive and consists of the verbs *aanbieden* 'to offer' and *voorstellen* 'to propose'. Given that these verbs behave in a similar way in all relevant respects, we will only discuss the verb *voorstellen* here. Consider the examples in (411), which show that this verb is very lenient when it comes to control: it is compatible with subject control, object control and also allows PRO to take a split antecedent consisting of the subject *and* the indirect object.

(411) a. Els$_i$ stelde Jan$_j$ voor [(om) PRO$_i$ hem$_j$ te helpen].
Els proposed Jan prt. COMP him to help
'Els proposed to Jan to help him.'
b. Els$_i$ stelde Jan$_j$ voor [(om) PRO$_j$ het samen met haar$_i$ te doen].
Els proposed Jan prt. COMP it together with her to do
'Els proposed to Jan to do it together with her (=Els).'
c. Els$_i$ stelde Jan$_j$ voor [(om) PRO$_{i+j}$ het samen te doen].
Els proposed Jan prt. COMP it together to do
'Els proposed to Jan to do it together.'

Note that we have added a referential personal pronoun with an antecedent in the °matrix clause to the infinitival clauses in (411a&b) in order to block the split antecedent reading. In order to see how this works, consider the examples in (412a&b), which show that the personal pronouns *hem* 'him' and *haar* 'her' cannot refer to, respectively, *Jan* and *Els* due to the fact that their reference is included in the reference of the subject of the clause. Consequently, the reference of the pronouns cannot be included in the reference of the PRO-subject in (411a&b) either, which makes it impossible for PRO to take the subject and the object of the matrix clause as a split antecedent. The addition of *samen* 'together' to example (411c), on the other hand, strongly favors a split antecedent reading as this element normally requires a plural subject: the use of a singular subject in (412c) is quite marked (when a comitative *met*-PP is not present).

(412) a. Zij, [Els$_i$ en Jan$_j$], hielpen hem$_{k/*j}$.
they Els and Jan helped him
b. Zij, [Els$_i$ en Jan$_j$], deden het samen met haar$_{k/*i}$.
they Els and Jan did it together with her
c. Zij deden/$^{\$}$Hij deed het samen.
they did/he did it together

All examples in (411) can be passivized, especially if the bare indirect object is omitted. This violates condition (389a) on obligatory control, and hence supports the claim that we are dealing with non-obligatory control in these examples. For completeness' sake, we want to note that our Google search on the string [*er werd voorgesteld om*] resulted in over 100.000 hits. Unfortunately, it is not possible to specifically search for the three subtypes in (413) so that our search results do not allow us to say anything about their relative frequency.

(413) a. Er werd voorgesteld [(om) PRO$_{arb}$ hem$_j$ te helpen].
there was prt.-proposed COMP him to help
'It was proposed to help him.'
b. Er werd voorgesteld [(om) PRO$_{arb}$ het samen met haar$_j$ te doen].
there was prt.-proposed COMP it together with her to do
'It was proposed to do it together with her.'
c. Er werd voorgesteld [(om) PRO$_{arb}$ het samen te doen].
there was prt.-proposed COMP it together to do
'It was proposed to do it together.'

That we are dealing with non-obligatory control in (411) can further be supported for the object control example by the fact that the bare indirect object *Jan* can be replaced by the prepositional one *aan Jan,* as shown by (414).

(414) a. Els$_i$ stelde aan Jan$_j$ voor [(om) PRO$_i$ hem$_j$ te helpen].
Els proposed to Jan prt. COMP him to help
'Els proposed to Jan to help him.'
b. Els$_i$ stelde aan Jan$_j$ voor [(om) PRO$_j$ het samen met haar$_j$ te doen].
Els proposed to Jan prt. COMP it together with her to do
'Els proposed to Jan to do it together with her.'
c. Els$_i$ stelde aan Jan$_j$ voor [(om) PRO$_{i+j}$ het samen te doen].
Els proposed to Jan prt. COMP it together to do
'Els proposed to Jan to do it together.'

The reason for assuming that (414b) involves non-obligatory control is that it violates the c-command requirement on obligatory control in (389c). This is due to the fact that the prepositional indirect objects in (414) differ from the bare indirect objects in (411) in that they do not c-command the infinitival direct object clause, but are in fact c-commanded by it. This state of affairs is clear from °binding: the examples in (415) show that bare indirect objects can bind (phrases embedded in) direct objects, while direct objects can bind (phrases embedded in) prepositional indirect objects. The (a)-examples illustrate this by means of binding of a reciprocal, and the (b)-examples by means of °bound variable licensing. It should be noted, however, that the double object construction in the primeless examples is not very frequent in binding contexts, and that it is normally the variant with a prepositional object in the primed examples that is used in such contexts.

(415) a. Jan stelde de meisjes$_{IO}$ elkaar$_{DO}$ voor.
Jan introduced the girls each.other prt.
'Jan introduced the girls to each other.'
a′. Jan stelde de meisjes$_{DO}$ aan elkaar$_{iO}$ voor.
Jan introduced the girls to each.other prt.
'Jan introduced the girls to each other.'
b. Jan stelde iedereen$_{IO}$ zijn begeleider$_{DO}$ voor.
Jan introduced everyone his supervisor prt.
'Jan introduced everyone to his supervisor.'
b′. Jan stelde iedereen$_{DO}$ aan zijn begeleider$_{IO}$ voor.
Jan introduced everyone to his supervisor prt.
'Jan introduced everyone to his supervisor.'

For completeness' sake, it should also be noted that our claim that (415a) involves binding of a direct object by a bare indirect object is not supported by German, given that such examples are unacceptable in this language; see Webelhuth (1989: Section 5.6) and Haider (2010: Section 6.4). With respect to variable binding, on the other hand, German does exhibit the same behavior as Dutch by allowing examples such as (415b); see Lee & Santorini (1994). We refer the reader to Den Dikken (1995: Section 4.6) for a possible solution of this paradoxical behavior of German.

The second type of control verbs that allow split antecedents are transitive verbs of communication such as *afspreken* ‘to agree’ and its more formal counterpart *overeenkomen* ‘to agree’. Given that these two verbs behave in a similar way in all relevant respects, we will only discuss the less formal form. The primeless examples in (416) show that *afspreken* normally triggers subject control by a plural subject, but also allows split antecedents if it is accompanied by a comitative *met*-PP. The acceptability of (416b) violates the uniqueness requirement on obligatory control in (389d) and thus shows that *afspreken* does not involve obligatory control.

(416) a. [Jan en Marie]$_i$ spraken af [(om) PRO$_i$ vroeg te vertrekken].
Jan and Marie agreed prt. COMP early to leave
‘Jan and Marie agreed to leave early.’
b. Jan$_i$ sprak met Marie$_j$ af [(om) PRO$_{i+j}$ vroeg te vertrekken].
Jan agreed with Marie prt. COMP early to leave
‘Jan agreed with Marie to leave early.’

That we are dealing with non-obligatory control in (416) is supported by the passive examples in (417), which show that the antecedent of PRO need not be overtly expressed, in violation of condition (389a) on obligatory control.

(417) a. Er werd afgesproken [(om) PRO$_{arb}$ vroeg te vertrekken].
there was prt.-agreed COMP early to leave
‘It was agreed to leave early.’
b. Er werd met Marie afgesproken [(om) PRO$_{arb}$ vroeg te vertrekken].
there was with Marie prt.-agreed COMP early to leave
‘It was agreed with Marie to leave early.’

Passivization of constructions such as (416) is very common: a Google search on the colloquial string [*werd (met *) afgesproken om*] resulted in numerous hits, and on the more formal string [*er werd (met *) overeengekomen om*] in nearly 200 hits. For completeness’ sake, observe that the PRO-subject in (417b) may refer to a completely arbitrary set of individuals or to an arbitrary set of individuals that includes Marie.

2. Verbs that allow an arbitrary interpretation of PRO

Example (418) provides a sample of intransitive and transitive verbs that may take an *om* + *te*-infinitival clause functioning as, respectively, subject and direct object. The PRO-subject of these infinitival clauses allows an arbitrary interpretation, which means that it does not require an overt antecedent, in violation of condition (389a) on obligatory control. Consequently, we are dealing with non-obligatory control verbs.

(418) • Verbs that allow an arbitrary interpretation of PRO
a. Intransitive (PO-)verbs: *ingaan (tegen)* ‘to go against’, *voor de hand liggen* ‘to stand to reason’, *indruisen (tegen)* ‘to go against’
b. Transitive verbs: *afkeuren* ‘to disapprove’, *afwijzen* ‘to reject’, *fiatteren* ‘to authorize’, *goedkeuren* ‘to approve’, *uitnodigen (tot)* ‘to invite/entice’ *veroordelen* ‘to condemn’

A number of concrete examples are given in (419); the (phrasal) verbs in the (a)-examples are intransitive and the verbs in the (b)-examples are transitive. Note that the infinitival argument clauses in these constructions are normally introduced by the anticipatory subject/object pronoun *het* ‘it’, and that the PRO-subject in the (b)-examples receives an arbitrary interpretation despite the fact that there is a potential controller present syntactically, viz., the subject of the matrix clause.

(419) a. Het ligt voor de hand [(om) PRO$_{arb}$ het te weigeren].
it lies for the hand COMP it to refuse
‘It stands to reason to refuse it.’
a′. Het gaat in tegen het fatsoen [(om) PRO$_{arb}$ te vloeken].
it goes prt. against the propriety COMP to curse
‘It isn’t considered proper to swear.’
b. De VN keurt het af [(om) PRO$_{arb}$ zomaar een land aan te vallen].
the UN disapproves it prt. COMP like.that a country prt. to attack
‘Attacking a country without a good cause is disapproved of by the UN.’
b′. De kerk veroordeelt het [(om) PRO$_{arb}$ te vloeken].
the church condemns it COMP to curse
‘Swearing is condemned by the church.’

The use of arbitrary PRO is especially pervasive in constructions with the verbs listed in (420), in which *om* + *te*-infinitivals function as °logical SUBJECTs of adjectival °complementives.

(420) • Predicative constructions that allow an arbitrary interpretation of PRO:
a. Copular verbs; *zijn* ‘to be’, *worden* ‘to become’ and *blijven* ’to remain’
b. Modal verbs: *lijken* ‘to appear’, *schijnen* ‘to seem’ and *blijken* ’to turn out’
c. The verbs *vinden* ‘to consider’ and *achten* ‘to consider’

It is important to note, however, that the control properties of the complementive constructions are not determined by the verbs in (420) but by the predicatively used adjectives; Section A6.5.3, argues that we can distinguish the three subtypes in (421).

(421) a. **Obligatory control adjectives** optionally select a *van-* or *voor*-PP with a [+ANIMATE] complement; PRO is controlled by the nominal complement of the PP. Examples: *aardig* ‘nice’, *dom* ‘stupid’, *flauw* ‘silly’, *gemakkelijk* ‘easy’, *moeilijk* ‘difficult’, *slim* ‘smart’, etc.
b. **Optional control adjectives** optionally select a *voor*-PP with a [+ANIMATE] or a [-ANIMATE] complement; PRO may be controlled by the nominal complement of the PP, but may also receive an arbitrary interpretation. Examples: *belangrijk* ‘important’, *goed* ‘good’, *gevaarlijk* ‘dangerous’, *leuk* ‘nice’, *schadelijk* ‘harmful’. etc.
c. **Arbitrary control adjectives** do not select a PP; PRO receives an arbitrary interpretation. Examples**:** *afkeurenswaardig* ‘condemnable’, *gebruikelijk* ‘common’, *onnodig* ‘not needed’, *etc.*

We will not discuss the adjectives in (421) in detail here since this is done in Section A6.5.3, but do want to stress that, despite their name, the adjectives in

(421a) do not involve obligatory control in the technical sense defined in (389). The simple fact that the PP-complements in the primeless examples in (422) are optional already seems to militate against this as it would result in a violation of the overt antecedent requirement on obligatory control in (389a). Omission of the PP-complement may lead to a generic interpretation, as is clear from the fact that the PRO-subject can function in such cases as the antecedent of a generic pronoun like *jezelf* ‘oneself’: *Het is verstandig om PRO$_{arb}$ jezelf$_{arb}$ goed te verzorgen* ‘It is wise to take good care of oneself’.

(422) a. Het is verstandig van Peter$_i$ [(om) PRO$_i$ zijn fiets te smeren].
it is wise of Peter COMP his bike to grease
‘It is wise of Peter to grease his bike.’
a′. Het is verstandig [(om) PRO$_{arb}$ je fiets te smeren].
it is wise COMP je bike to grease
‘It is wise to grease one’s bike.’
b. Het is gemakkelijk voor Peter$_i$ [(om) PRO$_i$ die som te maken].
it is easy for Peter COMP that calculation to make
‘It is easy for Peter to make that calculation.’
b′. Het is gemakkelijk [(om) PRO$_{arb}$ die som te maken].
it is easy COMP that calculation to make
‘It is easy to make that calculation.’

What should make us even more suspicious than the optionality of the PPs is that it is highly doubtful that the PRO-subjects in the primeless examples are °c-commanded by their antecedents, given that the infinitival clauses function as logical SUBJECTs of the predicative adjectives, whereas the PPs containing the antecedents seem to function as complements of these adjectives; under all standard definitions of c-command it is the SUBJECT that c-commands the PP-complement, and not vice versa—it is always the higher phrase that c-commands the more deeply embedded one: *[$_{SC}$ SUBJECT [A voor/van-PP]]*. This would lead to the conclusion that the primeless examples involve °accidental coreference between the noun phrase Peter and PRO and not obligatory control. In principle, this might be checked by replacing *Peter* by the universally quantified element *iedereen* ‘everyone’; if the interpretation of PRO is dependent on *iedereen*, we are dealing with the so-called °bound variable reading, which can result from accidental coreference. Unfortunately, the judgments on the examples seem to vary among speakers; whereas some speakers seem to consider the bound variable reading marked, other speakers seem to accept it. In order to help the Dutch speakers to test whether they allow the bound variable reading, we used the possessive pronoun *zijn* ‘his’ in (423a); the bound variable reading should be compatible with a reading in which all persons involved are associated with a different bicycle, the one they own.

(423) a. $^{\%}$Het is verstandig van iedereen$_i$ [(om) PRO$_i$ zijn fiets te smeren].
it is wise of everyone COMP his bike to grease
‘Everyone would be well-advised to grease his bike.’
b. $^{\%}$Het is gemakkelijk voor iedereen$_i$ [(om) PRO$_i$ die som te maken].
it is easy for everyone COMP that calculation to make
‘It is easy for everyone to make that calculation.’

A further complication is that *voor*-PPs are often used as restrictive adverbial phrases; this reading can be favored by placing the PP in front of the predicative adjective, as in (424b), and in which case the variable binding reading seems acceptable for all speakers.

(424) a. $^{\%}$Het is van iedereen$_i$ verstandig [(om) PRO$_i$ zijn fiets te smeren].
it is of everyone wise COMP his bike to grease
'Everyone would be well-advised to grease his bike.'
b. Het is voor iedereen$_i$ gemakkelijk [(om) PRO$_i$ die som te maken].
it is for everyone easy COMP that calculation to make
'It is easy for everyone to make that calculation.'

Given the complexity of the data, the variability in judgments on the availability of the bound variable reading in examples such as (423), and the interfering factor that the *voor*-PP can potentially be interpreted as a restrictive adverbial phrase, it is not easy to draw any firm conclusions from the c-command restriction on obligatory control.

Things are different when we get to the locality restriction. Example (425a) shows that the controller may be non-local; the subject of the main clause can (but need not) function as the antecedent of the PRO-subject of the more deeply embedded infinitival clause. Note, however, that control by the nominal part of the PP-complement takes precedence; if a *van/voor*-complement is present, as in (425b), the non-local control relation will be blocked. The only thing that the adjectives in (421a) seem to have in common with genuine cases of obligatory control is that they normally do not tolerate split antecedents: examples such as (425c) are quite marked (although some of our informants seem to marginally accept examples like these).

(425) a. Wij$_i$ denken dat het slim is [(om) PRO$_i$ elkaar$_i$ te helpen].
we think that it smart is COMP each.other to help
'We think that it is smart to help each other.'
b. Wij$_i$ denken dat het slim van ze$_j$ is [(om) PRO$_{j/*i}$ elkaar$_j$ te helpen].
we think that it smart of them is COMP each.other to help
'We think that it is smart of them to help each other.'
c. $^{??}$Jan$_i$ vindt het slim van Marie$_j$ [(om) PRO$_{i+j}$ elkaar$_{i+j}$ te helpen].
Jan considers it smart of Marie COMP each.other to help
'Jan considers it smart of Marie to help each other.'

That the adjectives in (421b) do not involve obligatory control is not only clear from the optionality of the PP-complement of the adjective but also from the fact that in some cases the complement of the PP need not be construed as coreferential with the PRO-subject. An example such as *Het is belangrijk voor Jan om daar op tijd te zijn* 'It is important for Jan to be there in time' is ambiguous between the two readings given in (426): the PRO-subject can be construed as coreferential with *Jan* but (given the right contextual situation) also receive an arbitrary interpretation.

(426) a. Het is belangrijk voor Jan$_i$ [(om) PRO$_i$ daar op tijd te zijn].
it is important for Jan COMP there in time to be
‘It is important for Jan that he (=Jan) will be there in time.’
b. Het is belangrijk voor Jan$_i$ [(om) PRO$_{arb}$ daar op tijd te zijn].
it is important for Jan COMP there in time to be
‘It is important for Jan that some contextually determined person(s), e.g., the speaker and addressee, will be there in time.’

The fact that an arbitrary interpretation is possible is even clearer if the nominal complement of the PP is non-animate; this is illustrated in (427a), in which the inherently reflexive verb *zich wassen* ‘to wash (oneself)’ takes an animate subject. Example (427b) shows that in such cases it is even possible for PRO to have a non-local antecedent; the reflexive *zich* is only possible if the PRO-subject is construed non-arbitrarily; cf. example (427a), in which the use of PRO$_{arb}$ forces the reflexive to appear in its generic form *je* ‘one’. We also refer the reader to Lebeaux (1984) and Petter (1998:40-1).

(427) a. Het is schadelijk voor het milieu [(om) PRO$_{arb}$ je$_i$ met zeep te wassen].
it is harmful to the environment COMP REFL with soap to wash
‘It is harmful to the environment to wash oneself with soap.’
b. Jan$_i$ denkt dat het schadelijk is voor het milieu
Jan thinks that it harmful is to the environment
[(om) PRO$_i$ zich$_i$ met zeep te wassen].
COMP REFL with soap to wash
‘Jan believes it is harmful to the environment to wash himself with soap.’

That the adjectives in (421c) are not instances of obligatory control is clear from the fact that they do not normally take a PP with a complement that could function as the antecedent of the PRO-subject; addition of a *van*- or a *voor*-PP to examples such as (428) normally gives rise to a marked or degraded result, as is clear from the fact that we found fewer than 10 relevant cases of the sequence [*afkeurenswaardig van*] on the internet, which are mostly suspect (they come from historical/formal sources or from potentially non-native speakers) and never involve control.

(428) a. Het is afkeurenswaardig [om PRO$_{arb}$ daar te laat te komen].
it is condemnable COMP there too late to come
‘It is condemnable to get there late.’
b. *?Het is afkeurenswaardig van Jan$_i$ [om PRO$_i$ daar te laat te komen].
it is condemnable of Jan COMP there too late to come

E. Syntactic or semantic control, or perhaps pragmatics?

The previous subsections have proved that there is actually no reason for claiming that PRO-subjects of argumental *om* + *te*-infinitivals involve obligatory control in the sense defined in (389), repeated here as (429).

(429) Obligatory control requires the antecedent of PRO to:
a. be overtly realized in the sentence containing PRO;
b. be local (a co-argument of the infinitival clause containing PRO);
c. be a c-commanding nominal argument (subject or object);
d. be unique (cannot be “split”).

This does not imply that the interpretation of PRO-subjects is entirely free but only that it is not subject to *syntactic* restrictions, because there is good reason for assuming that the *meaning* of the °matrix verb imposes restrictions to the interpretation of the PRO-subject. The ditransitive verb *beloven* ‘to promise’ in (430a), for example, can conveniently be characterized as a verb that requires control by its agent, which also accounts for the fact that the controller of PRO must be the nominal complement in the optional agentive *door*-PP (and not the c-commanding indirect object pronoun *ons*) in the corresponding passive construction in (430a′). In fact, we can show the same thing by means of the nominal constructions in the (b)-examples: the controller of the PRO-subject must be bound to the agent of the nominalization *belofte* ‘promise’, regardless of whether it does or does not c-command PRO: this is clear from the fact that it can not only be expressed by means of a c-commanding prenominal possessor but also by means of a postnominal *van*-PP. The doubly-primed examples are added to show that the agent can also be left implicit in both the verbal and the nominal construction, in violation of the condition on obligatory control in (429a).

(430) a. Marie$_i$ beloofde ons$_j$ [(om) PRO$_i$ de auto te repareren].
Marie promised us COMP the car to repair
‘Marie promised us to repair the car.’
a′. Er werd ons$_j$ door Marie$_i$ beloofd [(om) PRO$_i$ de auto te repareren].
there was us by Marie promised COMP the car to repair
a″. Er werd ons$_j$ beloofd [(om) PRO$_{arb}$ de auto te repareren].
there was us promised COMP the car to repair
b. [Maries$_i$ belofte aan ons$_j$ [(om) PRO$_i$ de auto te repareren]]
Marie’s promise to us COMP the car to repair
‘Marie’s promise to us to repair the car’
b′. de belofte van Marie$_i$ aan ons$_j$ [(om) PRO$_i$ de auto te repareren]
the promise of Marie to us COMP the car to repair
b″. de belofte aan ons$_j$ [(om) PRO$_{arb}$ de auto te repareren]
the promise to us COMP the car to repair

The primeless examples in (431) show that bare indirect objects in object control constructions must be realized as prepositional indirect objects in the corresponding nominalizations. Since the controller *hem* ‘him’ is part of the prepositional indirect object, it does not c-command the PRO-subject of the infinitival direct object clause in (431b); again this shows that the c-command restriction in (429c) can be violated in the case of *om* + *te*-infinitivals. The primed examples are added to show that the indirect object can also be omitted in the verbal as well as the nominal construction, in violation of the condition on obligatory control in (429a).

(431) a. Wij$_i$ adviseren hem$_j$ [(om) PRO$_j$ veel fruit te eten].
we advise him COMP much fruit to eat
‘We advise him to eat a lot of fruit.’
a′. Wij$_i$ adviseren [(om) PRO$_{arb}$ veel fruit te eten].
we advise COMP much fruit to eat
‘We advise to eat a lot of fruit.’
b. [ons$_i$ advies aan hem$_j$ [(om) PRO$_j$ veel fruit te eten]]
our advice to him COMP much fruit to eat
‘our advice to him to eat a lot of fruit’
b′. [ons$_i$ advies [(om) PRO$_{arb}$ veel fruit te eten]]
our advice COMP much fruit to eat
‘our advice to eat a lot of fruit’

That indirect object control is not sensitive to the syntactic realization of the controller can also be illustrated by means of verbal constructions such as (432a), which are acceptable regardless of whether the goal argument is realized as a bare or as a prepositional indirect object. It should be noted, however, that for some reason the goal argument is nevertheless preferably realized as a nominal object in object control structures: verbs like *vragen*, which allow the dative shift alternation in contexts such as (432a), are rare; and cases such as (432b), which require the goal argument to be realized as a bare noun phrase, are clearly more common than cases like (432c&d), which require the goal argument to be realized as a PP.

(432) a. Jan vroeg (aan) Peter$_i$ [(om) PRO$_i$ de boodschappen te doen].
Jan asked to Peter COMP the shopping to do
‘Jan asked (of) Peter to go shopping.’
b. Jan beval (*aan) Peter$_i$ [(om) PRO$_i$ de boodschappen te doen].
Jan ordered to Peter COMP the shopping to do
‘Jan ordered Peter to do the shopping.’
c. Jan liet het *(aan) Peter$_i$ over [(om) PRO$_i$ de boodschappen te doen].
Jan left it to Peter prt. COMP the shopping to do
‘Jan left it to Peter to do the shopping.’
d. Jan dringt er (bij de directeur$_i$) op aan [(om) PRO$_i$ snel te handelen].
Jan urges there with the director on prt. COMP fast to act
‘Jan urges the director to act fast.’

That it is not the syntactic function of the controller but its semantic role that is at stake is also clear from the fact illustrated in (433) that passivization transfers transitive PO-verbs like *overhalen* ‘to persuade’ from the set of object control verbs to the set of subject control verbs; this follows immediately from the assumption that these verbs require control by a theme argument, not by an object.

(433) a. Marie$_i$ haalde Els$_j$ ertoe over [(om) PRO$_j$ te zingen].
Marie persuaded Els to-it prt. COMP to sing
‘Marie persuaded Els to sing.’
b. Els$_j$ werd er door Marie$_i$ toe overgehaald [(om) PRO$_j$ te zingen].
Els was there by Marie prt. prt.-persuaded COMP to sing
‘Els was persuaded by Marie to sing.’

The discussion above suggests that the well-established notions of subject and object control are actually misnomers for cases involving *om* + *te*-infinitivals, and that it would be better to rephrase these notions in terms of thematic roles like agent, goal and theme; cf. Van Haaften (1991:ch.5). The examples in (434) in fact suggest that even this may still be an oversimplification of the actual state of affairs. The previous subsections followed the general practice of treating verbs like *beloven* 'to promise' and *verzoeken* 'to request' as, respectively, subject and object control verbs. The contrast between the primeless and primed examples shows, however, that the semantic contents of the embedded clause (induced here by the absence/presence of the deontic modal *mogen* 'to be allowed') can change the control properties, a phenomenon that has become known as CONTROL SHIFT.

(434) a. Jan$_i$ beloofde Peter$_j$ [(om) PRO$_{i/*j}$ te komen]. [subject control]
Jan promised Peter COMP to come
'Jan promised Peter to come.'
a′. Jan$_i$ beloofde Peter$_j$ [(om) PRO$_{j/*i}$ te mogen komen]. [object control]
Jan promised Peter COMP to be.allowed.to come
'Jan promised Peter to be allowed to come.'
b. Jan$_i$ verzocht Peter$_j$ [(om) PRO$_{j/*i}$ te komen]. [object control]
Jan requested Peter COMP to come
'Jan asked Peter to come.'
b′. Jan$_i$ verzocht Peter$_j$ [(om) PRO$_{i/*j}$ te mogen komen]. [subject control]
Jan requested Peter COMP to be.allowed.to come
'Jan asked Peter to be allowed to come.'

The possibility of control shift shows that the matrix verbs *beloven* 'to promise' and *verzoeken* 'to request' have no inherent preference for subject or object control, but that the meaning of the constructions as a whole in tandem with our knowledge of the world determines which options are possible. The illocutionary act of *beloven* 'to promise' normally consists in committing oneself to perform some action, whereas the illocutionary act of *verzoeken* 'to request' aims at obtaining such a commitment from someone else. The infinitival clauses in the primeless examples in (434) simply refer to the promised/requested action, and our knowledge of the world therefore leads to the coindexing indicated. The infinitival clauses in the primed examples, on the other hand, do not refer to the promised/requested action; this action is left implicit and involves the granting of permission to come; cf. Van Haaften (1991:233-6). Given that granting permission is normally a non-reflexive action, this entails the counter-indexing indicated in the primed examples. If this line of reasoning is on the right track, we may conclude that control of the PRO-subject of argumental *om* + *te*-infinitivals is not a matter of syntax or semantics, but of pragmatics. This would immediately account for the pervasive violations of the four restrictions in (389), that is, the restrictions that define syntactic dependencies: obligatoriness, locality, c-command, and uniqueness.

5.2.2. Te-*infinitivals*

This section discusses the use of *te*-infinitivals as arguments of main verbs. Such clauses are formally characterized by the fact that they are headed by a *te*-infinitive but cannot be introduced by the complementizer *om* we find in *om* + *te*-infinitivals; this contrast is illustrated in (435). The fact that the complementizer *om* is normally optional in examples such as (435a) raises the question as to whether the forms without *om* could or should be considered *te*-infinitivals but we postpone discussion of this to Section 5.2.2.3; this section will only discuss verbs that do not allow their infinitival complement to be introduced by *om*.

(435) a. Marie$_i$ weigerde [(om) PRO$_i$ dat boek te lezen]. [*om* + *te*-infinitival]
Marie refused COMP that book to read
'Marie refused to read that book.'
b. Marie$_i$ beweerde [(*om) PRO$_i$ dat boek te lezen]. [*te*-infinitival]
Marie claimed COMP that book to read
'Marie claimed to be reading that book.'

An important distinction in the domain of argumental *te*-infinitivals is between CONTROL and SUBJECT RAISING constructions. Consider the primeless examples in (436) with the verbs *beweren* 'to claim' and *blijken* 'to turn out'. These verbs differ in that the former is °dyadic, as is clear from the fact that it takes a nominal subject and a sentential object, whereas the latter is °monadic, as is clear from the fact that it only takes a sentential subject (which is introduced here by the °anticipatory pronoun *het* 'it'); the difference in °adicity of the two verbs comes out even more clearly in the primed examples, in which the finite clauses are pronominalized by *dat* 'that'.

(436) a. De man beweerde gisteren [dat hij een tovenaar is].
the man claimed yesterday that he a magician is
'The man claimed yesterday that he's a magician.'
a′. De man beweerde dat gisteren.
the man claimed that yesterday
b. Het bleek al snel [dat de man een tovenaar is].
it turned.out prt. soon that the man a magician is
'It soon turned out that the man is a magician.'
b′. Dat bleek al snel.
that turned.out prt. soon

Transposing these findings to the infinitival constructions in (437), we can conclude that the two occurrences of the °nominative noun phrase *de man* 'the man' differ in that the one in (437a) simply corresponds to subject of the main clause in (436a), whereas the one in (437b) corresponds to the subject of the embedded clause in (436b). This is indicated in the structures below as follows: in (437a), *de man* is simply base-generated as the external argument of the °matrix verb *beweren* and the infinitival clause contains a phonetically empty °PRO-subject corresponding to the subject pronoun *hij* of the embedded finite clause in (436a); in (437b), on the other hand, *de man* is base-generated as an argument of the embedded infinitival clause and subsequently raised to the subject position of the matrix clause; it follows that the infinitival clause does not contain a PRO-subject but a °trace of the moved noun phrase. Control and subject raising constructions will be discussed separately in, respectively, Section 5.2.2.1 and Section 5.2.2.2.

(437) a. De man$_i$ beweert [PRO$_i$ een tovenaar te zijn]. [control]
the man claims a magician to be
‘The man claims to be a magician.’
b. De man$_i$ schijnt [t_i een tovenaar te zijn]. [subject raising]
the man seems a magician to be
‘The man seems to be a magician.’

Section 5.2.2.2 will also include a discussion of subject raising constructions that we will refer to as PASSIVE “SUBJECT RAISING” CONSTRUCTIONs as such constructions are normally passive counterparts of subject control constructions (with the exception of a couple of more idiomatic examples). The active counterpart of the passive construction in (438b) is the somewhat formal construction in (438a); the corresponding construction with an overt noun phrase in the position of the trace t_i in (438c) is unacceptable.

(438) a. Jan$_i$ veronderstelt [PRO$_i$ de beste leerling van de klas te zijn].
Jan assumes the best pupil of the class to be
‘Jan assumes that he (= Jan) is the best pupil of the class.’
b. Jan$_i$ wordt verondersteld [t_i de beste leerling van de klas te zijn].
Jan is assumed the best pupil of the class to be
‘Jan is assumed to be the best pupil of the class.’
c. *Marie veronderstelt [Jan de beste leerling van de klas te zijn].
Marie assumes Jan the best pupil of the class to be

The reader will look in vain for so-called “long passive” constructions of the sort we find in German examples such as (439b), in which passivization of the *matrix* verb results in promotion of the object of the embedded verb. Dutch does not allow this type of passive constructions, as is shown by (439b′). For an extensive discussion of long passivization in German, we refer to Wurmbrand (2001) and references cited there.

(439) a. dass der Johann$_{nom}$ den Traktor$_{acc}$ zu reparieren versuchte. [German/active]
that the Johann the tractor to repair tried
‘that Johann tried to repair the tractor.’
a′. dat Jan/hij de tractor/hem probeerde te repareren. [Dutch/active]
that Jan/he the tractor/him tried to repair
‘that Jan/he tried to repair the tractor/it.’
b. dass der Traktor$_{nom}$ zu reparieren versucht wurde. [German/passive]
that the tractor to repair tried was
b′. *dat de tractor/hij geprobeerd werd te repareren. [Dutch/passive]
the the tractor/he tried was to repair

5.2.2.1. Control infinitivals

This section discusses control constructions with an argumental *te*-infinitival. The examples in (440) show that such infinitival clauses behave like finite argument clauses in that they are normally in extraposed position, that is, placed after the verbs in clause-final position. The *te*-infinitivals we discuss in this section do not participate in °verb clustering, but since much more can and should be said about this, we will not address this issue here but postpone it to Section 5.2.2.3.

(440) a. dat Jan$_i$ heeft beweerd [dat hij$_{i/j}$ dat boek gekocht heeft].
that Jan has claimed that he that book bought has
‘that Jan has claimed that he has bought that book.’
b. dat Jan$_i$ heeft beweerd [(*om) PRO$_i$ dat boek gekocht te hebben].
that Jan has claimed COMP that book bought to have
‘that Jan has claimed to have bought that book.’

The main issues in this section is whether control in examples such as (440b) is obligatory in the sense defined in (441); we refer the reader to Section 5.2.1.3, sub IIIA, for a brief discussion of this definition.

(441) Obligatory control requires the antecedent of PRO to:
a. be overtly realized in the sentence containing PRO;
b. be local (a co-argument of the infinitival clause containing PRO);
c. be a °c-commanding nominal argument (subject or object);
d. be unique (cannot be “split”).

Section 5.2.1.3 has argued that cases such as (442a), in which the matrix verb takes an argument in the form of an *om* + *te*-infinitival, do not involve obligatory control in the sense of (441). This is clear from the fact that examples of this type allow passivization; the passive construction in (442b) does not have an overt controller for the PRO-subject, thus violating restriction (441a), and even if we were to express the controller by means of an agentive *door*-phrase, the resulting structure would violate the c-command restriction in (441c).

(442) a. Jan$_i$ probeerde [(om) PRO$_i$ dat boek te kopen].
Jan tried COMP that book to buy
‘Jan tried to buy that book.’
b. Er werd geprobeerd [(om) PRO$_{arb}$ dat boek te kopen].
there was tried COMP that book to buy
‘It was tried to buy that book.’

Control constructions in which the matrix verb takes an argument in the form of a *te*-infinitival, on the other hand, do seem to involve obligatory control given that such constructions do not allow passivization. The passive counterparts of the examples in (440) given in (443) show that the verb *beweren* readily allows passivization if it takes a finite argument clause, but not if it takes an infinitival argument clause. It is therefore plausible to attribute this difference in acceptability to the fact that the PRO-subject must be obligatorily controlled; see Van Haaften (1991:ch.4) for extensive discussion. Observe that the c-command restriction on obligatory control in (441c) correctly predicts that (443b) does not improve when we add an agentive *door*-phrase with a potential controller for PRO: **Er wordt door Jan$_i$ beweerd [PRO$_i$ dat boek te kopen]*.

(443) a. Er wordt beweerd [dat hij dat boek gekocht heeft].
it is claimed that he that book bought has
‘It is claimed that he has bought that book.’
b. *Er wordt beweerd [PRO$_{arb}$ dat boek gekocht te hebben].
there is claimed that book bought to have

If control verbs with a *te*-infinitival argument clause indeed trigger obligatory control, we predict that they differ in a number of ways from control verbs with an *om* + *te*-infinitival argument clause. First, since restrictions (441a&b) require there to be a local controller of the PRO-subject, we predict that there are no constructions in which PRO receives an arbitrary interpretation, and, consequently, that subject control verbs categorically resist passivization and object control verbs never allow omission of their object. Second, restrictions (441a-c) require the controller to be a nominal argument of the control verb, that is, the controller cannot be part of some prepositional phrase; this entails that there are no object control verbs taking a prepositional indirect object. Third, restriction (441d) predicts that split antecedents are excluded.

I. Subject control

Example (444) provides a sample of three subtypes of verbs with *te*-infinitival argument clauses that normally trigger subject control. The transitive and ditransitive verbs in (444a&b) are propositional verbs with a factive or a non-factive clausal complement; cf. Cremers (1983) and Van Haaften (1991:ch.4). The prepositional object verbs in (444c) also trigger subject control.

(444) a. Transitive verbs: *betreuren* ‘to regret’, *beseffen* ‘to realize’, *beweren* ‘to claim’, *denken* ‘to think’, *geloven* ‘to believe’, *menen* ‘to suppose’, *vrezen* ‘to fear’, *zeggen* ‘to say’
b. Ditransitive verbs: *antwoorden* ‘to reply’, *berichten* ‘to report’, *meedelen* ‘to inform’, *schrijven* ‘to write’, *verzekeren* ‘to assure/promise’, *garanderen* ‘to guarantee’
c. Intransitive and inherently reflexive PO-verbs: *rekenen (op)* ‘to count on’, *zich verbazen (over)* ‘to be surprised about’, *zich verwonderen over* ‘to be amazed at’

We have already shown in (443b) by means of the transitive verb *beweren* ‘to claim’ that passivization of subject control verbs is impossible due to the fact that it demotes the subject to °adjunct status. This is illustrated again in (445); passivization of the transitive verb *geloven* ‘to believe’ results in unacceptability, regardless of whether the demoted subject is or is not expressed by means of a *door*-phrase. This supports the claim that we are dealing with obligatory control.

(445) a. Jan$_i$ geloofde [PRO$_i$ dat boek gekocht te hebben].
Jan believed that book bought to have
‘Jan believed to have bought that book.’
b. *Er werd door Jan$_i$ geloofd [PRO$_i$ dat boek gekocht te hebben].
there was by Jan believed that book bought to have
b′. *Er werd geloofd [PRO$_{arb}$ dat boek gekocht te hebben].
there was believed that book bought to have

The examples in (446) show the same thing for the ditransitive verb *garanderen* ‘to guarantee’; passivization is blocked, regardless of whether the demoted subject is expressed by means of a *door*-phrase. Again, this supports the claim that we are dealing with obligatory control.

(446) a. Jan$_i$ garandeerde me [PRO$_i$ me dat boek toe te sturen].
Jan guaranteed me me that book prt. to send
‘Jan guaranteed me that he would send that book to me.’
b. *Er werd me door Jan$_i$ gegarandeerd [PRO$_i$ me dat boek toe te sturen].
there was me by Jan guaranteed me that book prt. to send
b′. *Er werd me gegarandeerd [PRO$_{arb}$ me dat boek toe te sturen].
there was me guaranteed me that book prt. to send

The ditransitive verb *schrijven* ‘to write’ is special to some degree in that it not only allows subject but also object control. First consider the primeless examples in (447), which show that the actual interpretation of PRO depends on the pronoun *hem*/*haar* ‘him/her’ in the infinitival clause. On the reading that the pronoun *hem* is coreferential with the object of the matrix clause, example (447a) cannot but be interpreted in such a way that PRO is controlled by the subject of the matrix clause: object control would violate the requirement that the pronoun be free (= not bound) within its own clause; see Section N5.2.1.5, sub III. Similarly, on the reading that the pronoun *haar* is coreferential with the subject of the matrix clause, example (447b) must be interpreted in such a way that PRO is controlled by the object of the matrix clause: subject control would again violate the requirement that the pronoun is to be free in its own clause. The crucial point is that the acceptability contrast between the two primed examples in (447) shows that subject control blocks passivization whereas object control allows it. These passivization facts again suggest that we are dealing with obligatory control: example (447a′) is unacceptable on the reading that Jan will be sent the book due to passivization demoting the subject controller to adjunct status; example (447b′) is acceptable due to the fact that passivization does not affect the status of the object controller.

(447) a. Marie$_i$ schreef Jan$_j$ [PRO$_{i/*j}$ hem$_j$ dat boek toe te sturen].
Marie wrote Jan him that book prt. to send
‘Marie wrote to Jan that she (= Marie) would send him (= Jan) that book.’
a′. *Er werd Jan$_j$ geschreven [PRO$_{arb}$ hem$_j$ dat boek toe te sturen].
there was Jan written him that book prt. to send
b. Marie$_i$ schreef Jan$_j$ [PRO$_{j/*i}$ haar$_i$ dat boek toe te sturen].
Marie wrote Jan her that book prt. to send
‘Marie wrote to Jan that he (= Jan) was to send her (= Marie) that book.’
b′. Er werd Jan$_j$ geschreven [PRO$_j$ haar$_i$ dat boek toe te sturen].
there was Jan written her that book prt. to send

That the pattern in (447) is not accidental is clear from the fact that we find essentially the same in (448) where we see that the actual interpretation of PRO is restricted by the fact that the weak reflexive *zich*/*me* of the inherently reflexive verb *zich haasten* ‘to hurry’ must have an antecedent in its own clause; in the (a)-example third person *zich* requires that PRO should be controlled by the third person subject, and in the (b)-examples first person *me* requires it to be controlled by the first person object of the clause. The unacceptability contrast between the primed examples again bears out that the subject control constructions cannot be passivized.

(448) a. Jan$_i$ heeft me$_j$ verzekerd [PRO$_i$ zich$_i$ niet te hoeven haasten].
Jan has me assured REFL not to have.to hurry
'Jan assured me that he (=Jan) didn't have to hurry.'
a′. *Er is me$_j$ door Jan$_i$ verzekerd [PRO$_i$ zich$_i$ niet te hoeven haasten].
there is me by Jan assured REFL not to have.to hurry
b. Jan$_i$ heeft me$_j$ verzekerd [PRO$_j$ me$_j$ niet te hoeven haasten].
Jan has me assured REFL not to have.to hurry
'Jan assured me that I didn't have to hurry.'
b′. Er is me$_j$ door Jan$_i$ verzekerd [PRO$_j$ me$_j$ niet te hoeven haasten].
there is me by Jan assured REFL not to have.to hurry

The examples in (449) show that PO-verbs like *rekenen op* 'to count on' are perfectly compatible with passivization if they take a finite complement clause but not if they take a *te*-infinitival clause; examples such as (449b′) are clearly degraded. This suggests again that PRO-subjects of *te*-infinitivals are obligatorily controlled. Note that this cannot be illustrated for the inherently reflexive PO-verbs in (444c), given that these cannot be passivized anyway.

(449) a. Jan rekent erop [dat hij binnenkort mag vertrekken].
Jan counts on.it that he soon is.allowed leave
'Jan is counting on it that he'll be allowed to leave soon.'
a′. Er wordt op gerekend [dat hij binnenkort mag vertrekken].
there is on counted that he soon is.allowed leave
'It can be counted on that he'll be allowed to leave soon.'
b. Jan$_i$ rekent erop [PRO$_i$ binnenkort te mogen vertrekken].
Jan counts on.it soon to be.allowed leave
'Jan counts on being allowed to leave soon.'
b′. $^{*?}$Er wordt op gerekend [PRO$_{arb}$ binnenkort te mogen vertrekken].
there is on counted soon to be.allowed leave

For completeness' sake, note that some adjective phrases also take *te*-infinitivals as prepositional objects; examples are *doordrongen (van)* 'convinced of the necessity of' and *zeker (van)* 'certain of'. In such cases, the PRO-subject is controlled by the °logical SUBJECT of the adjective (which surfaces as the subject of a copular sentence): *Jan$_i$ is ervan doordrongen [PRO$_i$ dat boek te moeten lezen]* 'Jan is convinced of the necessity of having to read that book'. Whether we are dealing with obligatory control here is difficult to say given that subjects of predicatively used adjectival phrase cannot normally be omitted for independent reasons.

The discussion above has shown that there are good reasons for assuming that PRO-subjects of *te*-infinitivals differ conspicuously from PRO-subjects of *om* + *te*-infinitivals in that they are obligatorily controlled. This might also be supported by means of the nominalizations in (450a&b); Van Haaften (1991:100) deems (450b) to be unacceptable due to the lack of an overt controller for PRO. A potential problem is that example (450c) is acceptable, however, which is unexpected given the c-command restriction on obligatory control in (441c); we refer especially to Hoekstra (1999) for a possible solution of the c-command problem posed by (450c) which is based on the claim that the preposition *van* is not a preposition in the traditional sense of the word but a complementizer-like element; cf. Kayne (2000: part III) and Den Dikken (2006).

(450) a. Jans$_i$ bewering [PRO$_i$ dat boek gelezen te hebben]
Jan's assertion that book read to have
'Jan's claim to have read that book'
b. $^{\%}$de bewering [PRO$_{arb}$ dat boek gelezen te hebben]
the assertion that book read to have
'the claim to have read that book'
c. de bewering van Jan$_i$ [PRO$_i$ dat boek gelezen te hebben]
the assertion of Jan that book read to have

We did not mark example (450b) with an asterisk because some speakers at least marginally accept such examples. Koster (1984b: Section 5), for example, claims that "it is almost always possible to replace the subject controller of an NP by an article", and he further argues that obligatory control requires that the *te*-infinitival should be a complement of a verb. If we are indeed dealing with non-obligatory control in (450), this would not only account for the fact that some speakers accept (450b), but it would also straightforwardly explain that the controller can be expressed by means of a *van*-PP in examples such as (450c).

Although the discussion above has shown that it is not evident that the nominalization facts in (450) support the claim that PRO-subjects of all *te*-infinitivals are obligatorily controlled, we can still maintain that PRO-subjects of *te*-infinitivals selected by verbs cannot receive an arbitrary interpretation but must be controlled by a nominal argument of the matrix verb.

II. Object control

There are not that many object control verbs taking *te*-infinitivals as arguments, and for this reason we have grouped the ditransitive verbs and the transitive PO-verbs together. Although causative psych-verbs functioning as object control verbs normally select *om* + *te*-infinitivals, a limited number of them take a *te*-infinitival.

(451) a. Ditransitive verbs and transitive (PO-)verb: *aanwrijven* 'to impute', *overtuigen (van)* 'to convince (of)', *toedichten* 'to impute', *verdenken (van)* 'to suspect', *verwijten* 'to reproach', *voorwerpen* 'to accuse'
b. Causative object experiencer verbs with a cause subject: *verbazen* 'to amaze', *verwonderen* 'to surprise'

The verbs in (451a) normally require object control, as shown by example (452a). It is difficult to establish, however, whether we are dealing with obligatory control because passivization does not affect the syntactic status of the indirect object of a ditransitive verb like *verwijten* in (452a). And although the object of a transitive PO-verb like *verdenken (van)* 'to suspect (of)' is promoted to subject, the acceptability of (452b′) is still in full accordance with the characterization of obligatory control in (441): the derived subject can function as a unique, local and c-commanding controller of the PRO-subject.

(452) a. Jan$_i$ verweet haar$_j$ [PRO$_j$ niets te doen].
Jan reproached her nothing to do
‘Jan reproached her for not doing anything.’
a′. Er werd haar$_j$ verweten [PRO$_j$ lui te zijn].
there was her reproached lazy to be
‘She was reproached for being lazy.’
b. De politie$_i$ verdenkt Els$_j$ ervan [PRO$_j$ de bank overvallen te hebben].
the police suspects Els of.it the bank prt.-robbed to have
‘The police suspect Els of having robbed the bank.’
b′. Zij$_j$ wordt ervan verdacht [PRO$_j$ de bank overvallen te hebben].
she is of.it suspected the bank prt.-robbed to have
‘She’s suspected of having robbed the bank.’

The hypothesis that we are dealing with obligatory control predicts that the indirect object in examples such as (452) cannot be omitted. Example (453a) shows that this prediction is correct, but this is not of much help as the indirect object cannot be omitted either in examples such as (453b), in which the infinitival is replaced by a finite clause; it is therefore likely that the degraded status of (453a) is due to independent factors.

(453) a. Jan$_i$ verweet *(haar$_j$) [PRO$_j$ niets te doen].
Jan reproached her nothing to do
‘Jan reproached her for not doing anything.’
b. Jan$_i$ verweet *(haar$_j$) [dat zij niets deed].
Jan reproached her that she nothing did
‘Jan reproached her that she didn’t do anything.’

There is nevertheless some indirect evidence that the verbs in (451a) involve obligatory control since some of these verbs allow control shift by manipulating the contents of the infinitival clause, e.g., by adding a deontic modal like *mogen* ‘to be allowed’. This is illustrated for the verb *verwijten* ‘to reproach’ in (454); the fact that (454a) cannot be passivized supports the claim that the PRO-subject of the *te*-infinitival is obligatorily controlled.

(454) a. Jan$_i$ verweet haar$_j$ [PRO$_i$ niets te mogen doen].
Jan reproached her nothing to be.allowed do
‘Jan reproached her for not being allowed to do anything.’
b. *Er werd haar$_j$ verweten [PRO$_{arb}$ niets te mogen doen].
there was her reproached nothing to be.allowed do

Another potential argument can be built on the nominalizations of the (a)-examples in (453) and (454). Since the indirect object must be realized as an *aan*-PP in nominalizations, we expect object control to be blocked by the c-command restriction on obligatory control in (441c). The result, however, is equivocal: although many speakers indeed consider example (455a) marked compared to (455b), some speakers tend to accept it. The primed examples show that omitting the controller altogether does give rise to a degraded result, and this supports the idea that we are dealing with obligatory control. However, some speakers report that they do accept example (455c), in which both arguments are left implicit, which goes against this idea. The examples in (455) show again that it is not evident that PRO-subjects of *te*-infinitivals are obligatorily controlled in nominalizations, which can perhaps be seen as evidence for Koster's (1984b) claim that obligatory control occurs in *te*-infinitival complements of verbs only.

(455) a. $^{?}$Jans$_i$ verwijt aan haar$_j$ [PRO$_j$ niets te doen] [object control]
Jan's reproach to her nothing to do
a′. $^{??}$Jans$_i$ verwijt [PRO$_{arb}$ niets te doen]
Jan's reproach nothing to do
b. Jans$_i$ verwijt aan haar$_j$ [PRO$_i$ niets te mogen doen] [subject control]
Jan's reproach to her nothing to be.allowed do
b′. $^{??}$het verwijt aan haar$_j$ [PRO$_{arb}$ niets te mogen doen]
the reproach to her nothing to be.allowed do
c. $^{?}$het verwijt [PRO$_{arb}$ niets (te mogen) doen] [subject/object control]
the reproach nothing to be.allowed do

Putting aside the problematic status of the examples in (455), we may conclude again that the verbal constructions discussed in this subsection confirm the prediction that PRO-subjects of *te*-infinitival argument clauses cannot receive an arbitrary interpretation but must be controlled by a nominal argument of the matrix verb.

III. No PRO-subjects with split antecedents

There are good reasons for assuming that the verbs in (444) and (451) trigger obligatory control when they select a *te*-infinitival clause. First, the restrictions on obligatory control in (441a-c) predict that PRO cannot have arbitrary reference but must have an overt controller functioning as a nominal argument of the matrix verb. The two previous subsections have shown that this prediction is essentially correct. Second, the uniqueness restriction on obligatory control in (441d) predicts that PRO cannot have a split antecedent. This subsection will show that this prediction is also correct: the core data will be provided in Subsection A, while Subsection B discusses a potential counterexample.

A. No split antecedents

Subsection I has shown that the ditransitive verb *schrijven* 'to write' is compatible with subject as well as with object control; the relevant examples are repeated in (456a&b). That there can be such obligatory subject control verbs is to be expected given that the subject and the object are both in a c-command relation with the PRO-subject of the infinitival clause. However, the uniqueness restriction crucially predicts that such verbs do not allow PRO to take a split antecedent, and (456c) shows that this prediction is indeed correct. The reciprocal pronoun *elkaar* 'each other' needs to have a plural antecedent in its clause, and this condition can only be met if PRO takes a split antecedent; the unacceptability of (456c) shows that this is not an acceptable option.

(456) a. Marie$_i$ schreef Jan$_j$ [PRO$_{i/*j}$ hem$_j$ dat boek toe te sturen].
Marie wrote Jan him that book prt. to send
‘Marie wrote to Jan that she (= Marie) would send him (= Jan) that book.’
b. Marie$_i$ schreef Jan$_j$ [PRO$_{j/*i}$ haar$_i$ dat boek toe te sturen].
Marie wrote Jan her that book prt. to send
‘Marie wrote to Jan that he (= Jan) should send her (= Marie) that book.’
c. *Marie$_i$ schreef Jan$_j$ [PRO$_{i+j}$ elkaar$_{i+j}$ die boeken toe te sturen].
Marie wrote Jan each.other those books prt. to send
Intended reading: ‘Marie wrote to Jan that they (= Marie + Jan) should send each other those books.’

The examples in (457a&b), which were also discussed in Subsection I, show that the transitive PO-verb *verzekeren* ‘to assure’ is likewise compatible with subject and object control. Crucially, however, (457c) shows that it does not allow PRO to take a split antecedent; the reflexive *ons* must be bound by a first person, plural antecedent, which is only possible if PRO takes a split antecedent; the unacceptability of (457c) shows that this is not an acceptable option.

(457) a. Jan$_i$ heeft me$_j$ verzekerd [PRO$_i$ zich$_i$ niet te hoeven haasten].
Jan has me assured REFL not to have.to hurry
‘Jan assured me that he didn’t have to hurry.’
b. Jan$_i$ heeft me$_j$ verzekerd [PRO$_j$ me$_j$ niet te hoeven haasten].
Jan has me assured REFL not to have.to hurry
‘Jan assured me that I didn’t have to hurry.’
c. *Jan$_i$ heeft me$_j$ verzekerd [PRO$_{i+j}$ ons$_{i+j}$ niet te hoeven haasten].
Jan has me assured REFL not to have.to hurry
Intended meaning: ‘Jan assured me that we don’t have to hurry.’

The cases above involve verbs that normally trigger subject control, but the same thing can be illustrated with verbs that normally trigger object control. Subsection II has shown that the verb *verwijten* ‘to reproach’ allows control shift; the relevant examples are repeated as (458a&b). The existence of such obligatory object control verbs is to be expected, given that the object and the subject are both in a c-command relation with the PRO-subject of the infinitival clause. However, a crucial prediction is now that such verbs do not allow PRO to take a split antecedent, and (458c) shows that this prediction is indeed correct; the use of the reciprocal *elkaar* ‘each other’ again forces a plural interpretation on PRO, and thus requires the latter to take a split antecedent: this leads to ungrammaticality. For completeness’ sake, example (458c) shows that split antecedents are not possible in nominalizations either. It should be stressed that this is not incompatible with Koster’s claim that obligatory control occurs in *te*-infinitival complements of verbs only: although the claim that PRO-subjects in *te*-infinitival complements of nouns are not obligatorily controlled is compatible with cases in which PRO takes a split antecedent, it does not predict that this is always an option: the semantics of the construction as a whole may make this impossible.

(458) a. Jan$_i$ verweet *(haar$_j$) [PRO$_j$ niets te doen].
Jan reproached her nothing to do
‘Jan reproached her for not doing anything.’
b. Jan$_i$ verweet haar$_j$ [PRO$_i$ niets te mogen doen].
Jan reproached her nothing to be.allowed do
‘Jan reproached her for not being allowed to do anything.’
c. *Jan$_i$ verweet haar$_j$ [PRO$_{i+j}$ niets voor elkaar$_{i+j}$ te willen doen].
Jan reproached her nothing for each.other to want do
Intended meaning: ‘Jan reproached her because they (= Jan and she) don’t want to do anything for each other.’
c′. *Jans$_i$ verwijt aan haar$_j$ [PRO$_{i+j}$ niets voor elkaar$_{i+j}$ te willen doen].
Jan’s reproach to her nothing for each.other to want do

The discussion above has shown that subject and object control verbs do not allow the PRO-subject of a *te*-infinitival to take a split antecedent, which provides strong evidence in favor of assuming that PRO-subjects of such infinitivals are obligatorily controlled.

B. A potential counterexample

The discussion so far has shown that PRO-subjects of *te*-infinitival argument clauses are obligatorily controlled: the controller must be overtly realized as a unique nominal co-argument of the infinitival clause. This also seems to be the general conclusion in Van Haaften (1991), although he points out that there is one category of verbs that seems to defy this generalization; some examples are given in (459).

(459) Verbs of means of communication: *antwoorden* ‘to answer’, *berichten* ‘to report’, *e-mailen* ‘to email’, *faxen* ‘to fax’, *meedelen* ‘to announce’, *schrijven* ‘to write’, *zeggen* ‘to say’

Some of these verbs were already listed in Subsection I as subject control verbs. In this function they are in fact entirely well-behaved in requiring the PRO-subject of their infinitival complement to be obligatorily controlled, as is clear from the fact that passivization is excluded. This is illustrated in (460) for *zeggen* ‘to say’, which is normally used as a transitive verb in this context.

(460) a. De directeur$_i$ zei [PRO$_i$ morgen langs te komen].
the manager said tomorrow by to come
‘The manager said that he (= the manager) would come by tomorrow.’
b. *Er werd door de directeur$_i$ gezegd [PRO$_i$ morgen langs te komen].
it was by the manager said tomorrow by to come

The verbs in (459) do, however, also have a secondary use with a directive meaning, in which case they trigger object control. This is illustrated for *zeggen* in (461a)—although speakers seem to vary with respect to the question as to whether they prefer a (non-directive) subject or a (directive) object control reading for examples of this type, they all agree that the corresponding passive constructions do not allow an arbitrary interpretation: (461b) requires object control.

(461) a. De directeur$_i$ zei mij$_j$ [PRO$_{i/j}$ morgen langs te komen].
the manager said me tomorrow by to come
'The manager told me that I had to/he would come by tomorrow.'
b. Er werd mij$_j$ gezegd [PRO$_{j/*arb}$ morgen langs te komen].
it was me said tomorrow by to come
'I was told that I had to come by tomorrow.'

The facts discussed so far are completely compatible with the claim that we are dealing with obligatory control as the subject as well as the object make a suitable local, c-commanding controller for PRO. The problem, however, is that Van Haaften (1991) claims that in the directive use of the verbs in (459) the object controller need not be overtly realized. It is not clear how general this option is, but it seems to us that it holds at least for the verb *zeggen*; the primed examples in (462) indeed seem to be acceptable (albeit marked for some speakers) and examples of this type can readily be found on the internet.

(462) a. De politie$_i$ zei hem$_j$ [PRO$_j$ te wachten].
the police said him to wait
'The police told him to wait.'
a′. De politie$_i$ zei [PRO$_{arb}$ te wachten].
the police said to wait
b. Er werd hem$_j$ gezegd [PRO$_j$ to wachten].
there was him said to wait
'He was told to wait.'
b′. Er werd gezegd [PRO$_{arb}$ te wachten].
there was said to wait

The acceptability of the primed examples in (462) would be unexpected if we are dealing with obligatory control and this, in turn, seems to jeopardize the generalization that PRO-subjects of *te*-infinitivals are obligatorily controlled. One way out of this problem would be to claim that we are in fact not dealing with *te*-infinitivals, and Van Haaften (1991:124) indeed mentions in a footnote that some speakers allow the complementizer *om* if the verb *zeggen* is used with a directive meaning (although he himself considers the result doubtful). And when we check the internet for the string [object pronoun + *gezegd om te*], we indeed find a sufficiently large number of examples with the intended directive meaning to warrant the claim that we are in fact dealing with *om* + *te*-infinitivals.

IV. How te- *and* om + te-*infinitivals differ*

The comparison of control in *te*-infinitival complements with control in *om* + *te*-infinitivals in Section 5.2.1.3 has yielded the result that the two types of infinitival clauses systematically differ in that PRO-subjects of *te*-infinitivals, but not those of *om* + *te*-infinitivals, are obligatorily controlled in the sense defined in (441); see Van Haaften (1991) and Model (1991a:ch.8) for the same conclusion. Van Haaften claimed that this distinction is related to the semantic interpretation of the infinitival clauses; the two types of infinitival clauses differ in that *te*-infinitivals are propositional in nature, i.e., can be assigned a truth value, whereas *om* + *te*-infinitivals are not. This is illustrated in the primeless examples in (463); the

English renderings in the primeless examples show that the *te*-infinitivals in the (b)-examples, but not the *om* + *te*-infinitivals in the (a)-examples, entail that Jan is actually in the process of reading the book at speech time (the asterisk and number signs indicate impossible readings). *Om* + *te*-infinitivals, on the other hand, refer to potential state-of-affairs in the non-actualized part of the tense domain; see Section 1.5.1, sub I, for this notion. This is clear from the fact illustrated in the primed examples that they differ from *te*-infinitivals in that they cannot contain the adverbial element *al* 'already' in present-tense constructions; see Janssen (1992) for more discussion.

(463) a. Jan$_i$ belooft [(om) PRO$_i$ dat boek nu te lezen]. [*om* + *te*-infinitival]
Jan promises COMP that book now to read
'Jan promises to start reading/*read that book now.'
a′. *Jan$_i$ belooft [(om) PRO$_i$ dat boek al te lezen].
Jan promises COMP that book already to read
b. Jan$_i$ beweert [(*om) PRO$_i$ dat boek nu te lezen]. [*te*-infinitival]
Jan claims COMP that book now to read
'Jan claims to be/$^{\#}$start reading that book now.'
b′. Jan$_i$ beweert [(*om) PRO$_i$ dat boek al te lezen].
Jan claims COMP that book already to read

Van Haaften proposes the following diagnostics for distinguishing the two semantic types: propositional infinitivals allow epistemic modals, whereas non-propositional infinitivals do not (and the same holds in fact for deontic modals). Van Haaften further notes that propositional infinitivals can always be replaced by finite clauses, whereas this is often impossible with non-propositional clauses. See Cremers (1983), who first made the distinction between propositional and non-propositional infinitival clauses, for a number of other differences (e.g., concerning tense, °gapping and topicalization).

(464) a. Jan$_i$ probeert [(om) PRO$_i$ de wedstrijd te (*kunnen/*zullen) winnen].
Jan tries COMP the game to be.possible/will win
'Jan is trying to win the game'
a′. *Jan probeert [dat hij de wedstrijd wint].
Jan tries that he the game wins
b. Jan$_i$ beweert [(*om) PRO$_i$ de wedstrijd te (kunnen/zullen) winnen].
Jan claims COMP the game to be.possible/will win
'Jan claims (it to be possible/plausible for him) to win the game.'
b′. Jan beweert [dat hij de wedstrijd wint/zal winnen].
Jan claims that he the game wins/will win
'Jan claims that he'll win the game.'

Van Haaften also claims that propositional infinitival clauses require obligatory control because they can only be assigned a truth value if their subject is assigned a referential value.

Although this semantic approach seems to provide a more or less descriptively adequate description of the control facts, it still does not explain why the locally restricted °syntactic dependency relation of obligatory control applies only to *te*-

infinitivals. The remainder of this subsection will attempt to formulate an explanation in terms of the CP/TP distinction introduced in Section 9.1. If we follow Bennis & Hoekstra's (1985) claim discussed in Section 5.2.1.2 that *om* is a complementizer-like element situated in CP, we may hypothesize that the impossibility of having *om* in *te*-infinitivals marks the absence of the CP-projection; they are TPs.

(465) a. Hypothesis I: *om* + *te*-infinitivals are CPs
b. Hypothesis II: *te*-infinitivals are TPs

Note in passing that the hypotheses in (465) are not uncontroversial; Bennis & Hoekstra (1989c), for example, assume that *all* control infinitivals are CPs, which is convenient for them since they do not make the distinction between obligatory and non-obligatory control as defined in (441). We will try to provide a more solid basis for these hypotheses by considering in more detail the problematic verb *zeggen* discussed in Subsection IIIB. In keeping with the hypotheses in (465), we may assign the non-directive subject control examples in (460) the TP-structures in the (a)-examples in (466) given that they cannot be introduced by the complementizer *om*; note that we added the epistemic modal *zullen* in order to block the non-propositional, directive reading. The directive object control examples in (461), on the other hand, must be assigned the CP-structures in the (b)-examples given that they can be introduced by *om*. The primed examples show again that non-directive *zeggen* triggers obligatory control, whereas directive *zeggen* does not and allows a non-c-commanding or implicit controller for PRO.

(466) a. Jan$_i$ zei [$_{TP}$ (*om) PRO$_i$ morgen te zullen komen]. [non-directive]
Jan said COMP tomorrow to will come
'Jan said that he would come tomorrow.'
a′. *Er werd door Jan$_i$ gezegd [$_{TP}$ PRO$_i$ morgen te zullen komen].
it was by Jan said tomorrow to will come
a″. *Er werd gezegd [$_{TP}$ PRO$_{arb}$ morgen te zullen komen].
it was said tomorrow to will come
b. Jan$_i$ zei mij$_j$ [$_{CP}$ (om) [$_{TP}$ PRO$_j$ morgen te komen]]. [directive]
Jan said me COMP tomorrow to come
'Jan told me that I had to come tomorrow.'
b′. Er werd mij$_j$ gezegd [$_{CP}$ (om) [$_{TP}$ PRO$_j$ morgen te komen]].
it was me said COMP tomorrow to come
b″. Er werd gezegd [$_{CP}$ (om) [$_{TP}$ PRO$_{arb}$ morgen te komen]].
it was said COMP tomorrow to come

The proposed structural difference between non-directive and directive *zeggen* receives independent support from the fact that example (467a) only allows a directive reading of the verb. The reason for this is that embedded *wh*-movement requires there to be a CP-projection within the embedded clause, given that it targets the position left-adjacent to the phonetically empty complementizer (indicated by Ø); compare *Ik weet niet* *wat of* *hij doet* 'I do not know what he is doing', in which the *wh*-phrase is placed to the left of the interrogative complementizer *of* 'whether'. This leads to a conflict in the case of the non-directive subject control verb *zeggen*: *wh*-movement requires there to be a CP but this violates the selection restriction on this verb, as a result of which the structure in (467b) is rejected. In the case of the directive object control verb *zeggen* in (467b′) there is no problem: both *wh*-movement and the selection restrictions of the verb require there to be a CP. Note in passing that we marked *wat* in (467b) with the label [+WH] to exclude its indefinite referential interpretation "something", as this interpretation would be compatible with a directive reading.

(467) a. Jan zei me wat$_{[+wh]}$ te doen.
Jan said me what to do
'Jan told me what to do.'
b. *Jan$_i$ zei me$_j$ [$_{CP}$ wat Ø [PRO$_i$ t_{wat} te doen]]. [non-directive]
Jan told me what COMP to do
b′. Jan$_i$ zei me$_j$ [$_{CP}$ wat Ø [PRO$_j$ t_{wat} te doen]]. [directive]
Jan said me what COMP to do

The hypotheses in (465) allows us to state the robust difference in control properties between *om* + *te*-infinitivals and *te*-infinitivals in more general terms: PRO-subjects of infinitival TPs, but not of infinitival CPs, are obligatorily controlled. This, in turn, can be phrased in even more general terms by means of the term °island for locally restricted syntactic dependencies; see Hornstein (2001:56ff.) for a similar conclusion on the basis of English. The hypotheses in (468) express that such syntactic dependencies (like °NP-movement and anaphor °binding) can in principle be established across a TP-boundary, but not across a CP-boundary.

(468) a. Hypothesis III: CPs are islands for locally restricted syntactic dependencies.
b. Hypothesis IV: TPs are not islands for locally restricted syntactic dependencies.

That obligatory control is also covered by the generalizations in (468) is precisely what one would expect on the basis of its definition in (441), given that Section 5.2.1.3, sub IIIA, has shown that it is molded on the more general definition of locally restricted °syntactic dependency found in Koster (1984a/1987). Section 5.2.2.2, for example, will show that CPs, but not TPs, are syntactic islands for subject raising (which is a subtype of NP-movement). It may be interesting to note here that Koster's (1984b) claim that *te*-infinitival complements of nouns do not involve obligatory control suggests that TP-status may not be sufficient for transparency, and that (468b) may therefore be restricted to TPs governed by a verb. This would predict that, like obligatory control, subject raising is restricted to TP-complements of verbs, and this is indeed what Koster claims to be the case: see Section 5.2.2.2, sub C, for an illustration of this.

What still remains to be established is what type of syntactic dependency obligatory control is: Does control involve a different type of syntactic dependency than movement, as claimed by the more traditional generative approaches (like Chomsky 1981), or are control and movement essentially identical syntactic dependencies? If the latter, their apparent differences cannot be accounted for by postulating some inherent difference between PRO and °trace, but must be due to some other difference. It has been argued, for example, that these differences are due to whether or not the antecedent of the empty element (PRO/trace) has an independent °thematic role. We will not discuss this proposal here but refer the reader to Koster (1978: Section 2.1.1) and, especially, Koster (1984a/1984b) for this line of investigation, which has recently been revived in a somewhat different form in Hornstein (2001) and the contributions collected in Hornstein & Polinsky (2010).

5.2.2.2. Subject raising infinitivals

The infinitival clauses with *te*-infinitives discussed in this section differ from the ones discussed in Section 5.2.2.1 in that they do not involve the implied subject °PRO, but take a lexical subject which is subsequently raised to the subject position of the matrix clause in order to receive nominative case. The difference between control and subject raising infinitivals is indicated schematically in (469).

(469) a. [NP$_i$ V$_{finite}$ [$_{infinitival\ clause}$ PRO$_i$ ... te V$_{inf}$ ...]].
b. [NP$_i$ V$_{finite}$ [$_{infinitival\ clause}$ t_i ... te V$_{inf}$ ...]].

Typical examples of verbs triggering subject raising are the evidential modal verbs in (470a&b), but there are also verbs that occur incidentally in subject raising constructions, like *dreigen* and *beloven* in (470c).

(470) • Subject Raising verbs
a. Modal verbs: *blijken* ‘to turn out’, *lijken* ‘to appear’, *schijnen* ‘to seem’
b. Modal verbs (formal): *dunken* ‘to seem/be of the opinion’, *heten* ‘to call/count oneself’, *toeschijnen* ‘to seem’, *voorkomen* ‘to appear’
c. Other: *dreigen* ‘to threaten’ and *beloven* ‘to promise’

This section is organized as follows. Subsection I starts by introducing the term subject raising and provides some general syntactic properties of subject raising constructions. Subsection II continues with a more detailed discussion of the subject raising verbs in (470). Subsection III concludes with the discussion of a more restricted type of expression, which we will refer to as passive subject raising constructions.

I. General properties of subject raising constructions

Subsection A shows that subject raising constructions can be distinguished from control constructions by means of pronominalization. Subsection B discusses two different analyses of subject raising verbs, namely, as main or non-main verbs; we will show that, in keeping with our definition of non-main verbs (verbs lacking °argument structure), we have to do with main verbs. Subsection C concludes by pointing out a number of characteristic syntactic properties of subject raising constructions.

A. Subject Raising versus control infinitivals: pronominalization

Consider the examples in (471). Example (471a) shows that *blijken* ‘to turn out’ is a °monadic verb that may take a finite subject clause, which is introduced by the °anticipatory pronoun *het* ‘it’ (we ignore for the moment that in some cases *blijken* may also take an indirect object); that the clause functions as a subject is clear from the fact illustrated in (471b) that substitution of a lexical DP/referential pronoun for the pronoun *het* leads to ungrammaticality.

(471) a. Het bleek [dat Jan een auto gekocht had].
it turned.out that Jan a car bought had
'It turned out that Jan had bought a car.'
b. *Marie/Zij bleek [dat Jan een auto gekocht had].
Marie/she turned.out that Jan a car bought had

At first sight, the primeless examples in (472) seem to contradict the claim that *blijken* is monadic. The noun phrases *Jan* and *Jan en Marie* clearly function as the subjects of these sentences, as is clear from the fact that they agree in number with the verb *blijken*. There are nevertheless reasons for assuming that these nominative subjects are not arguments of the modal verb *blijken* but of the infinitival verb embedded under it. The most important reason for assuming this is that it is not possible to pronominalize the italicized parts of the examples in (472) while maintaining the nominative DP; pronominalization also requires the subject of the infinitival to be omitted. This is shown in the primed examples in (472).

(472) a. Jan bleek *een auto gekocht te hebben*.
Jan turned.out a car bought to have
'Jan turned out to have bought a car.'
a′. Dat bleek. / *Jan bleek dat.
that turned.out / Jan turned.out that
b. Jan en Marie bleken *een auto gekocht te hebben*.
Jan and Marie turned.out a car bought to have
'Jan and Marie turned out to have bought a car.'
b′. Dat bleek. / *Jan en Marie bleken dat.
that turned.out / Jan and Marie turned.out that

In this respect, subject raising constructions conspicuously differ from control constructions such as (473a), in which pronominalization of the infinitival clause cannot affect the nominative subject of the matrix clause, as shown by (473b).

(473) a. Jan$_i$ probeert [PRO$_i$ dat boek te lezen].
Jan tries that book to read
'Jan is trying to read that book.'
b. Jan probeert dat./ *Dat probeert.
Jan tries that/ that tries

The contrast between the examples in (472) and (473) suggests that the nominative noun phrases *Jan* and *Jan en Marie* in (472) originate as part of the infinitival clause and are raised to the subject positions of the matrix clauses, as in the representations in (474).

(474) a. Jan$_i$ bleek [t_i een auto gekocht te hebben].
b. [Jan en Marie]$_i$ bleken [t_i een auto gekocht te hebben].

The movement is normally taken to be an instantiation of °NP-movement, which implies that the motivation of this movement is the need of the noun phrase to be assigned case: the noun phrase cannot be assigned case from within the infinitival clause, for which reason it is raised to the subject position of the sentence where it can be assigned nominative case.

B. The status of the subject raising verb: main or non-main verb?

It seems that the standard analysis in (474) has no implications for the status of the subject raising verb: it seems compatible with the traditional claim that modal verbs like *blijken* 'to turn out', *schijnen* 'to seem' and *lijken* 'to appear' are non-main verbs, but also with the claim that they are main verbs. In fact, it is not immediately clear whether the two positions are really different from a syntactic point of view, given that they both maintain that the subject of the sentence, *Jan*/*Jan en Marie,* is an argument of the predicate in the *te*-infinitival. However, the two claims do make different predictions concerning the examples in (475), at least if we adopt our earlier definition of non-main verbs as verbs that do not assign °thematic roles. Example (475a) shows that *lijken* 'to appear' is a °dyadic verb that selects an experiencer argument in addition to a clausal subject. If the subject raising construction in (475b) involves a non-main verb, and if non-main verbs are not able to select arguments, we wrongly predict that the experiencer argument cannot be realized in this construction. This implies that, according to our definition of non-main verbs, modal verbs like *blijken*, *schijnen* and *lijken* are also main verbs in subject raising constructions.

(475) a. Het lijkt mij [dat Jan goed past in onze groep].
it appears me that Jan well fits in our team
'It appears to me that Jan will fit well in our team.'
b. Jan$_i$ lijkt mij [t_i goed in onze groep te passen].
Jan appears me well in our team to fit
'Jan appears to me to fit well in our team.'

The subject raising analysis of infinitival constructions with *blijken, schijnen* and *lijken* is essentially identical to the analysis of examples such as (476), in which these verbs take a °complementive; these constructions are traditionally analyzed as copular constructions. The primed examples show that the nominative noun phrase is generated as the °logical SUBJECT of an embedded predicate, with which it forms a so-called small clause, and is subsequently raised to the subject position in order to receive nominative case.

(476) a. Jan bleek/leek/scheen erg aardig.
Jan turned.out/appeared/seemed very kind
'Jan turned out/appeared/seemed very kind.'
a′. Jan$_i$ bleek/leek/scheen [$_{SC}$ t_i erg aardig].
b. Jan bleek/leek/scheen een goede vriend.
Jan turned.out/appeared/seemed a good friend
'Jan turned out/appeared/seemed a good friend.'
b′. Jan$_i$ bleek/leek/scheen [$_{SC}$ t_i een goede vriend].

The main difference between subject raising and complementive constructions is the status of the complement of the verb; is it an infinitival clause (that is a verbal predicative phrase) or a small clause (a predicate of some other category)? It therefore does not come as a surprise that examples such as (476) alternate with the those in (477), which contain an infinitival copular construction.

(477) a. Jan bleek/leek/scheen erg aardig te zijn.
Jan turned.out/appeared/seemed very kind to be
'Jan turned out/appeared/seemed to be very kind.'
a′. Jan$_{i}$ bleek/leek/scheen [$_{\text{CLAUSE}}$ t_{i} erg aardig te zijn].
b. Jan bleek/leek/scheen een goede vriend te zijn.
Jan turned.out/appeared/seemed a good friend to be
'Jan turned out/appeared/seemed to be a good friend.'
b′. Jan$_{i}$ bleek/leek/scheen [$_{\text{CLAUSE}}$ t_{i} een goede vriend te zijn].

On this view there is no need for assuming that *blijken, schijnen* and *lijken* are ambiguous: we are not dealing with a set of modal and a set of copular verbs, but simply with a single category that takes a predicative complement that may either have the form of an infinitival clause or of a small clause; in both cases the SUBJECT of the predicate is raised to the subject position of the clause headed by the modal verb in order to receive nominative case.

C. Syntactic properties of subject raising constructions

The conclusion from subsection B that subject raising verbs are main verbs raises several questions, which will be discussed in the following subsections.

1. Om + te-*infinitivals are excluded*

Subject raising verbs differ from control verbs in that they do not take *om* + *te*-infinitivals. The unacceptability of the subject raising construction in (478b) is easy to account for, given that Section 5.2.2.1 has independently established that *om* + *te*-infinitivals are syntactic °islands for movement, and can therefore be assumed to block subject raising. It is, however, less clear why (478c) is unacceptable, especially since (471a) has shown that similar constructions are possible with finite clauses; this unacceptability is possibly due to the fact that there is no suitable controller available for the implied subject PRO (cf. Bennis & Hoekstra 1989a).

(478) a. Jan$_{i}$ schijnt [t_{i} de boeken gestolen te hebben].
Jan seems the books stolen to have
'Jan seems to have stolen the books.'
b. *Jan$_{i}$ schijnt [om t_{i} de boeken gestolen te hebben].
Jan seems COMP the books stolen to have
c. *Het schijnt [om PRO de boeken gestolen te hebben].
it seems COMP the books stolen to have

Such an account of the unacceptability of (478c) would leave unexplained, however, why the (c)-example in the parallel set of examples in (479) is unacceptable as well, given that the experiencer object *me* of *lijken* 'to appear' could in principle function as a controller for PRO. We will not pursue this issue here and leave it for future research.

(479) a. Jan$_i$ lijkt me [t_i de boeken gestolen te hebben].
Jan appears me the books stolen to have
‘Jan appears to me to have stolen the books.’
b. *Jan$_i$ lijkt me [om t_i de boeken gestolen te hebben].
Jan appears me COMP the books stolen to have
c. *Het lijkt me [om PRO de boeken gestolen te hebben].
it appears me COMP the books stolen to have

2. The complement is a transparent infinitival (verb clustering and IPP)

The examples in (478a&b) in the previous subsection show that infinitival clauses of subject raising constructions must be transparent for °NP-movement. This is consistent with the fact that such clauses are transparent infinitivals in the sense defined in Section 4.4.3: subject raising constructions exhibit °verb clustering (and thus require the embedded infinitival clause to be split), and the *te*-infinitive seems to trigger the °*infinitivus-pro-participio* (IPP) effect on the matrix verb in perfect-tense constructions. The former can be illustrated by the contrast between the two examples in (480).

(480) a. dat Jan *de boeken naar Groningen* schijnt *te sturen.*
that Jan the books to Groningen seems to send
‘that Jan seems to send the books to Groningen.’
b. *dat Jan schijnt *de boeken naar Groningen te sturen.*
that Jan seems the books to Groningen to send

That subject raising constructions exhibit the IPP-effect is less easy to illustrate given that many speakers tend to object to perfect-tense constructions with evidential modal verbs; see Haeseryn et al. (1997:958) and also Schmid (2005:27), who claims that subject raising constructions tend to resist perfectivization cross-linguistically. Nevertheless, it seems that some speakers do at least marginally accept perfect-tense constructions such as (481), and then always prefer the IPP-effect; replacement of the infinitives *schijnen*, *lijken* and *blijken* in (481) by the corresponding participial forms *geschenen*, *geleken* and *gebleken* indeed greatly worsens the results; see Reuland (1983: Section 3.2) and Rutten (1991:70).

(481) a. $^{\%}$dat Jan *de boeken naar Groningen* heeft schijnen *te sturen.*
that Jan the books to Groningen has seem to send
‘that Jan has seemed to send the books to Groningen.’
b. $^{\%}$dat Jan *de boeken naar Groningen* heeft lijken *te sturen.*
that Jan the books to Groningen has appear to send
‘that Jan has appeared to send the books to Groningen.’
c. $^{\%}$dat Jan *de boeken naar Groningen* heeft blijken *te sturen.*
that Jan the books to Groningen has turn.out to send
‘that Jan has turned out to send the books to Groningen.’

Note in this connection that Van der Horst (2008:1464&1796) claims that constructions with *schijnen* have exhibited the IPP-effect already since the 18th century, which he illustrates with a single example only. However, his claim can easily be substantiated by means of a Google Book search on the string [*heeft* *schijnen te*]. Van der Horst (2008:1769) also provides a number of recent IPP-cases with *blijken*, and a Google Book search on the string [*heeft blijken te*] again provides a number of additional cases. There are, however, also a number of relevant hits for [*heeft geschenen te*] and [*heeft gebleken te*]. Van der Horst does not discuss cases with the verb *lijken*, and a Google Book search on the strings [*heeft lijken/geleken te*] did not result in any relevant hits either, but see Haegeman (2006) for the claim that *lijken* does occur in the perfect tense. The results of our searches are given in Table (482); the reported results were checked manually and exclude hits from linguistic sources.

(482) Google Book search (1/13/2013) on the string [*heeft* MODAL$_{\text{inf/part}}$ *te*]

	INFINITIVE	PARTICIPLE
schijnen 'to seem'	12	2
blijken 'to turn out'	11	6
lijken 'to appear'	0	0

The results in (482) are, of course, based on older written sources and are certainly not representative of present-day use. Unfortunately, the results of our Google searches on the strings [*heeft* MODAL$_{\text{inf/part}}$ *te*] are far too polluted by irrelevant cases (often machine translations from English) to allow anything enlightening to be said about the frequency on the internet of genuine cases of constructions such as (481) with and without IPP, apart from the fact that the numbers are low anyway. We therefore have to leave this issue to future research, and provisionally assume that, insofar as perfect-tense forms of subject raising constructions are possible at all, they preferably exhibit the IPP-effect.

3. Subject Raising verbs are unaccusative

A more technical question raised by assuming that subject raising verbs are main verbs concerns the argumental status of the infinitival clause: Is it an internal or an external argument of the modal verb, that is, are we dealing with °unaccusative verbs?

The unaccusative analysis seems a plausible one; because the subject of the infinitival clause uncontroversially surfaces as the nominative subject of the matrix clause, it seems unlikely that the infinitival clause is generated as the external argument of the matrix verb given that such arguments normally must surface as the subject of active constructions—this would make subject raising impossible. If the infinitival clause is generated as an internal argument of the verb, there is no external argument and we may conclude that, as a result of this, the subject of the infinitival clause is able to raise to the subject position of the higher clause.

That we are dealing with unaccusative verbs is also supported by the fact that *blijken* takes *zijn* in the perfect tense (in non-IPP-contexts): *Dat is/*heeft gebleken* 'That has turned out'; selection of the perfect auxiliary *zijn* is a sufficient condition for assuming unaccusative status. The complementive constructions in (483) show that *schijnen* and *lijken* do not allow *zijn* in the perfect tense; that these verbs seem to prefer *hebben* is, however, not a problem given that the selection of *zijn* is not a necessary condition for assuming unaccusative status; cf. Section 2.1.2.

(483) a. Jan heeft/*is me altijd aardig geleken.
Jan has/is me always kind seemed
'Jan has always seemed kind to me.'
b. Jan $^{?}$heeft/*is altijd aardig geschenen.
Jan has/is always nice appeared
'Jan has always appeared kind.'

4. Passivization

The conclusion that subject raising verbs are unaccusative correctly predicts that such verbs do not allow impersonal passivization. This is illustrated in (484) for the verb *lijken* in the three syntactic contexts in which it may occur. The reason why the nominative subjects cannot be suppressed in the primed examples is that they are not arguments of the passivized verb but originate as arguments of the complements of this verb; for convenience, the (split) complements are given in italics in the primeless examples.

(484) a. Het lijkt me *dat Jan morgen komt*. [finite subject clause]
it appears me that Jan tomorrow comes
'It appears to me that Jan will come tomorrow.'
a′. *Er wordt me geleken dat Jan morgen komt.
there is me appeared that Jan tomorrow comes
b. *Jan* lijkt me *morgen te komen*. [subject raising]
Jan appears me tomorrow to come
'Jan appears to me to come tomorrow.'
b′. *Er wordt me geleken morgen te komen.
there is me appeared tomorrow to come
c. *Jan* lijkt me *geschikt voor die baan*. [complementive]
Jan appears me suitable for that job
'Jan appears suitable for that job to me.'
c′. *Er wordt me geschikt geleken voor die baan.
there is me suitable appeared for that job

The (b)-examples in (485) show that passivization of the embedded infinitival clause is possible; the (a)-examples are simply given for comparison. As predicted by the subject raising analysis, passivization of the infinitival clause also affects the nominative subject of the subject raising construction as a whole; the internal argument of the infinitival verb, *de auto*, surfaces as the nominative subject of the construction as a whole, while the subject of the active construction, *Jan*, is suppressed; in short, it is the derived subject in (485a′) that becomes the nominative subject of the entire construction.

(485) a. Het lijkt me *dat Jan de auto repareert*. [finite subject clause]
it appears me that Jan the car repairs
'It appears to me that Jan is repairing the car.'
a′. Het lijkt me *dat de auto gerepareerd wordt*.
it appears me that the car repaired is
'It appears to me that the car is being repaired.'

b. *Jan* lijkt me *de auto te repareren.* [subject raising]
Jan appears me the car to repair
‘Jan appears to me to repair the car.’
b′. *De auto* lijkt me *gerepareerd te worden.*
the car appears me repaired to be
‘The car appears to me to be repaired.’

Finally, consider the examples in (486) adapted from Bennis & Hoekstra (1989c:172); the judgments hold only for speakers that allow passivization of the idiomatic expression *de strijdbijl begraven* ‘to bury the hatchet/to make peace’. The fact that the idiomatic reading is preserved in (486b′) can be taken as in favor of the claim that the noun phrase *de strijdbijl* is base-generated as part of the infinitival clause: since phrasal idioms are listed in the lexicon, the expression *de strijdbijl begraven* must be inserted into the structure as a unit.

(486) a. Het schijnt dat Jan en Marie de strijdbijl hebben begraven.
it seems that Jan and Marie the hatchet have buried
‘It seems that Jan and Marie have buried the hatchet.’
a′. *Jan en Marie* schijnen *de strijdbijl te hebben begraven.*
Jan and Marie seem the hatchet to have buried
‘Jan and Marie seem to have buried the hatchet.’
b. Het schijnt dat de strijdbijl begraven is.
it seems that the hatchet buried has.been
‘It seems that has been buried the hatchet.’
b′. *De strijdbijl* schijnt *begraven te zijn.*
the hatchet seems buried to have.been
‘The hatchet seems to have been buried.’

5. Subject raising is excluded in nominalizations

Subject Raising requires the *te*-infinitival to be a complement of a verb; the primed examples in (487) show that whereas non-raising constructions such as (487a) have nominal counterparts, subject raising constructions such as (487b) have not.

(487) a. het schijnt [dat Jan ziek is].
it seems that Jan ill is
‘It seems that Jan is ill.’
a′. de schijn [dat Jan ziek is]
the appearance that Jan ill is
‘the pretense that Jan is ill’
b. Jan$_i$ schijnt [t_i ziek te zijn].
Jan seems ill to
‘Jan seems to be ill.’
b′. *Jans$_i$ schijn [t_i ziek te zijn]
Jan’s appearance ill to be

This suggests that *te*-infinitival complements of nouns differ from those of verbs in that they are not transparent. This is in line with Koster’s (1984b) claim, discussed in Section 5.2.2.1 that *te*-infinitival complements of nouns do not involve obligatory control either,

6. Conclusion

The facts discussed in the previous subsections conclusively show that subjects of subject raising constructions cannot be analyzed as arguments of the subject raising verb but originate as arguments of the embedded infinitival verb. Subject Raising occurs out of *te*-infinitival complements of certain unaccusative verbs (but not of their corresponding nominalizations)

II. Subject raising verbs

Subject raising verb normally have a modal meaning. This is especially clear for the modal verbs *blijken* ‘to turn out’, *lijken* ‘to appear’, and *schijnen* ‘to seem’ in (470a), which are traditionally analyzed as (semi-)auxiliaries in this context, but it also holds for verbs like *beloven* ‘to promise’ and *dreigen* ‘to threaten’ in (470c), which are used more incidentally in this construction. The following subsections briefly discuss these verbs in more detail. Subsection A begins by having a closer look at the modal verbs *blijken, lijken* and *schijnen*. Subsection B discusses the verbs in (470c) while Subsection C concludes with the more formal modal verbs in (470b) as well as a number of other potential cases from the formal register.

A. The verbs blijken, schijnen *and* lijken

Adopting the categorization of modality proposed by Palmer (2001), which is discussed more extensively in Section 5.2.3.2, sub III, we may classify verbs like *blijken* ‘to turn out’, *lijken* ‘to appear’, and *schijnen* ‘to seem’ in (488) semantically as evidential modals, in the sense that they can be used to indicate what kind of evidence there is in favor of the truth of a certain proposition *p*: see Van Bruggen (1980/1), Haeseryn et al. (1997:1007-8), Vliegen (2011) and Koring (2013) for discussion. The verb *blijken* suggests that there is conclusive evidence to conclude that *p* is true, in the sense that on the basis of this evidence most people would conclude that *p* is true. The verb *lijken* expresses that there is evidence in support of *p* but that the evidence is not yet conclusive; on the basis of the evidence one can only provisionally assume that *p* is true. The verb *schijnen*, finally, expresses that there is no identifiable evidence that supports *p*; the evidence may or may not exist—we are dealing with hearsay/rumors.

(488) a. Uit zijn verklaring blijkt [dat Jan de dader is]. [conclusive]
from his statement turns.out that Jan the perpetrator is
‘His statement clearly shows that Jan is the perpetrator.’
b. Het lijkt mij/haar [dat Jan de dader is]. [not yet conclusive]
it appears me/her that Jan the perpetrator is
‘It appears to me/her that Jan is the perpetrator.’
c. Het schijnt [dat Jan de dader is]. [hearsay]
it seems that Jan the perpetrator is
‘It seems that Jan is the perpetrator.’

1. The verb blijken *‘to turn out’*

The verb *blijken* expresses that there is factual evidence in support of the proposition expressed by the argument clause. Use of this verb further suggests that the truth of the proposition can at least be intersubjectively established on the basis of the evidence available, that is, most people who consider this evidence carefully would come to the same conclusion. Example (489a) shows that the nature of the factual evidence submitted can be specified by means of an adverbial *uit*-PP if the clause is finite, but not in the corresponding subject raising and complementive constructions in (489b&c); the latter examples nevertheless imply that the truth of the proposition expressed by the infinitival/small clause can be intersubjectively established. Adverbial *uit*-PPs of this type are normally not found with the verbs *lijken* and *schijnen*; see Table 3 in Vliegen (2011).

(489) a. Uit zijn verklaring blijkt [dat Jan de dader is].
from his statement turns.out that Jan the perpetrator is
'His statement clearly shows that Jan is the perpetrator.'
b. Jan blijkt (*uit zijn verklaring) [t_i de dader te zijn].
Jan turns.out from his statement the perpetrator to be
c. Jan blijkt (*uit zijn verklaring) [$_{SC}$ t_i de dader].
Jan turns.out from his statement the perpetrator

Note in passing that examples such as (489) are perfectly fine if the preposition *uit* is replaced by *volgens* 'according to': this may be due to the fact that the complement of the *volgens*-PP does not refer to the evidence on which the speakers bases his judgment of the truth of the proposition, but to the "judgment" provided by some source. While example (489) expresses that the speaker concludes from Jan's statement that Jan is the perpetrator, an example like *Volgens zijn verklaring blijkt dat Jan de dader is* attributes this conclusion to Jan himself.

It seems often implied that there is a specific set of individuals who have drawn the conclusion from the available evidence. With a finite complement clause the person(s) responsible for the conclusion can be expressed by means of a °dative object (often the first person, plural pronoun *ons* 'us'), which the literature normally refers to as the experiencer. The verb *blijken* should therefore be considered a NOM-DAT (dyadic unaccusative) verb. The addition of an experiencer leads to a degraded result in the corresponding subject raising and complementive constructions.

(490) a. Er is ons gebleken [dat Jan de dader is].
there is us turned.out that Jan the perpetrator is
'We have concluded that Jan is the perpetrator.'
b. Jan bleek (*ons) [t_i de dader te zijn].
Jan turned.out us the perpetrator to be
'Jan turned out to be the perpetrator.'
c. Jan bleek (*ons) [$_{SC}$ t_i de dader].
Jan turned.out us the perpetrator
'Jan turned out to be the perpetrator.'

It should be noted that the use of an experiencer object is limited even in the case of finite argument clauses: it seems easily possible in perfect-tense constructions but is generally rejected in simple past/present constructions. The contrast is also clear from our Google search (31/1/2014): whereas the string [*er is ons gebleken*] resulted in 52 hits, the strings [*er blijkt/bleek ons dat*] resulted in no more than 9 relevant hits (all from very formal texts).

2. The verb lijken *‘to appear’*

The verb *lijken* indicates that the claim that the proposition expressed by the argument clause in (488a) is based on unmentioned evidence available; we are in a sense dealing with a subjective assessment of the evidence by a specific set of individuals, which includes the speaker by default. Example (491a) shows, however, that this set can also be made explicit by means of an optional experiencer object, in which case the default reading can readily be cancelled. The availability of an experiencer object shows that, like *blijken*, the verb *lijken* should be considered a NOM-DAT (dyadic unaccusative) verb. However, *lijken* differs from *blijken* in that the experiencer may also appear in the corresponding subject raising and complementive constructions in (491b&c).

(491) a. Het lijkt mij/haar [dat Jan de dader is].
it appears me/her that Jan the perpetrator is
‘It appears to me/her that Jan is the perpetrator.’
b. Jan$_i$ lijkt mij/haar [t_i de dader te zijn].
it appears me/her the perpetrator to be
‘Jan appears to me/her to be the perpetrator.’
c. Jan$_i$ lijkt mij/haar [$_{SC}$ t_i de dader].
it appears me/her the perpetrator
‘Jan appears to be the perpetrator to me/her.’

It seems that *schijnen* differs from the other two verbs in that it can easily take a finite clause introduced by the linking element *(als)of* ‘as if’; the judgments on examples (492b) with *schijnen* vary from speaker to speaker, which is indicated by the percentage sign; we will briefly return to this issue in Subsection 4.

(492) a. Het lijkt alsof Jan de dader is.
it appears as.if Jan the perpetrator is
‘It appears as if Jan is the perpetrator.’
b. Het $^{\%}$schijnt/*blijkt alsof Jan de dader is.
it seems/turns.out as.if Jan the perpetrator is

This claim that modal *lijken* can be supplemented by an *alsof*-complement may be apparent, however, given that the verb *lijken* also occurs as a PO-verb with the meaning “to resemble/look like”; cf. example (493a). Since Section 2.3.1, sub VI, has shown that °anticipatory pronominal PPs can often be omitted, it seems plausible to assume that example (492a) is a shorter form of example (493b) and thus does not involve the modal verb *lijken*.

(493) a. Jan lijkt op zijn vader.
Jan resembles on his father
‘Jan resembles his father.’
b. Het lijkt erop alsof Jan de dader is.
it looks like.it as.if Jan the perpetrator is
‘It looks like Jan is the perpetrator.’

Example (494a), on the other hand, shows that (492a) can be extended with an experiencer object; the fact illustrated in (494b) that the experiencer and the anticipatory pronominal PP cannot co-occur therefore militates against the elision analysis. The bracketed numbers indicate the number of hits of our Google search (5/2/2013) for the search strings [*het lijkt mij/me alsof*] and [*het lijkt mij/me erop alsof*]. For completeness' sake notice that some speakers report that they consider example (494b) marked as well.

(494) a. Het lijkt mij alsof Jan de dader is. [683]
it appears me as.if Jan the perpetrator is
'It appears to me like Jan is the perpetrator.'
b. *Het lijkt mij erop alsof Jan de dader is. [12]
it appears me like.it as.if Jan the perpetrator is

This leads to the conclusion that the evidential modal verb *lijken* can be supplemented by an *alsof*-complement after all.

3. The verb schijnen *'to seem'*

An experiencer object is unlikely with the verb *schijnen* in examples such as (488c), and the same holds for the corresponding subject raising and complementive constructions in (495). The reason for this is that *schijnen* indicates that the truth of the proposition is based on rumors/hearsay; contrary to *blijken* and *lijken*, postulation of the truth of the proposition is not based on evidence available to any identifiable individual in the domain of discourse—it may in fact be entirely lacking.

(495) a. Jan$_i$ schijnt (*mij/*haar) [t_i de dader te zijn].
Jan seems me/her the perpetrator to be
'Jan seems to be the perpetrator.'
b. Jan$_i$ schijnt (*mij/*haar) [$_{SC}$ t_i de dader].
Jan seems me/her the perpetrator
'Jan seems to be the perpetrator.'

Moreover, the examples in (496) show that *schijnen* differs from *blijken* and *lijken* in that it does not readily allow pronominalization of its complement clause. It shows that evidence for claiming that the raising verb *schijnen* is a main verb is lacking; main verb status can only be argued on the basis of the assumption that *schijnen* belongs to the same class as *blijken* and *lijken*.

(496) a. Dat blijkt later wel.
that turns.out later AFF
'That will become clear later.'
b. Dat lijkt me wel.
that appears me AFF
'That appears quite clear to me.'
c. *Dat schijnt later wel.
that seems later AFF

4. Conclusion

The three modal verbs *blijken* 'to turn out', *schijnen* 'to seem' and *lijken* 'to appear' differ in the type of evidence available for testing the truth of the proposition expressed by the complement of the verb: *blijken* suggests that there is strong evidence on the basis of which the truth of the proposition can be objectively or intersubjectively established, the verb *lijken* suggests that the evidence is weaker in the sense that it is not conclusive and can be interpreted in a subjective manner, while the verb *schijnen* suggests that the nature of the evidence is unclear or may even be lacking; see Sanders & Spooren (1996) for experimental underpinning of these findings.

It seems that speakers often have difficulties in giving judgments on examples with the modal verbs *blijken*, *lijken* and *schijnen*. One reason may be the interference of other constructions. We have seen, for example, that the dyadic modal verb *lijken* has a closely related counterpart that functions as a PO-verb with the meaning “to resemble/look like”; these verbs are diachronically derived from the same source and are still quite close in meaning. Furthermore, the situation in Dutch is rather special in that Dutch has two verbs, namely *lijken* and *schijnen*, where German simply has one verb, *scheinen*. This suggests that the meanings of these verbs are rather close which may give rise to a certain amount of confusion among speakers, especially since the introduction of *lijken* is quite recent—Vliegen (2011) suggests the 17th century.

To conclude this discussion on *blijken*, *lijken* and *schijnen*, we want to note that they occur frequently in examples such as (497) where they are part of a phrase headed the preposition *naar*; the pronoun *het* ‘it’ is often optional (especially with the verb *blijken*). Vliegen (2010) calls such *naar*-phrases parenthetic. Such an analysis may indeed be appropriate for cases such as *Jan is (naar het schijnt) de beste leerling van zijn klas* ‘As it seems, Jan is the best pupil of his class’, but clearly wrong for examples such as (497) where this phrase is used in the first position of the sentence and must therefore be considered a constituent of the clause.

(497) a. Naar het blijkt gaan ze naar de dierentuin.
to it turns.out go they to the zoo
‘It turns out that they’re going to the zoo.’
b. Naar het lijkt gaat het lukken.
to it appears goes it succeed
‘It appears that it’ll succeed.’
c. Naar het schijnt was ze elke dag dronken.
to it seems was she every day drunk
‘It seems that she was drunk every day.’

To our knowledge, examples such as (497), which can be quickly found on the internet by using the search string [*naar* (*het*) V_{modal}], have not yet received a detailed analysis, and we therefore leave them to future research.

B. The verbs dreigen *‘to threaten’ and* beloven *‘to promise’*

In addition to the run-of-the-mill evidential modal verbs discussed in the previous subsection, there are various other verbs that may be found in subject raising constructions. This subsection discusses *beloven* ‘to promise’ and *dreigen* ‘to threaten’, and shows that these verbs have a number of special properties in their use as subject raising verbs; see also Verhagen (2005: Section 1.3.2) and Vliegen (2006) and references cited there. In order to set the stage, we will begin the discussion with the more regular uses of these verbs.

1. Regular uses of beloven *and* dreigen

Beloven ‘to promise’ and *dreigen* ‘to threaten’ are generally used as verbs with an illocutionary meaning. The examples in (498) show that the illocutionary verb *beloven* is a °triadic verb, which may select a noun phrase or a clause as its direct object. For our discussion in the following subsections, it is important to note that the complement in (498c) is an opaque infinitival in the sense of Section 4.4.3; it is in extraposed position and the infinitival verb does not trigger the °IPP-effect, that is, the participle *beloofd* cannot be replaced by the corresponding infinitive *beloven*.

(498) a. dat Jan (Marie) een cadeautje heeft beloofd.
that Jan Marie a present has promised
‘that Jan has promised Marie a present.’
b. dat Jan (Marie) heeft beloofd [dat hij morgen zou komen].
that Jan Marie has promised that he tomorrow would come
‘that Jan has promised Marie that he would come tomorrow.’
c. dat Jan$_i$ (Marie) heeft beloofd [(om) PRO$_i$ morgen te komen].
that Jan Marie has promised COMP tomorrow to come
‘that Jan has promised Marie to come tomorrow.’

The examples in (499) show that normally the illocutionary verb *dreigen* ‘to threaten’ is an intransitive PO-verb, and that the complement of the PP can be either nominal or clausal; in the latter case the clause is optionally introduced by an anticipatory pronominal PP. For our discussion in the following subsections, it is again important to note that the complement in (499c) is not a transparent clause: it is in extraposed position and the infinitival verb does not trigger the IPP-effect, that is, the participle *gedreigd* cannot be replaced by the corresponding infinitive *dreigen*.

(499) a. dat de directeur met collectief ontslag heeft gedreigd.
that the manager with collective dismissal has threatened
‘that the manager has threatened collective dismissal.’
b. dat de directeur (ermee) heeft gedreigd [dat hij iedereen zal ontslaan].
that the manager with.it has threatened that he everyone will dismiss
‘that the manager has threatened that he will dismiss everyone.’
c. dat de directeur$_i$ (ermee) heeft gedreigd [(om) PRO$_i$ iedereen te ontslaan].
that the manager with.it has threatened COMP everyone to dismiss
‘that the manager has threatened to dismiss everyone.’

2. The use of beloven *and* dreigen *as subject raising verbs*

Now that we have discussed the regular uses of *beloven* ‘to promise’ and *dreigen* ‘to threaten’, we can continue with their use as subject raising verbs in the examples in (500). That we are dealing with subject raising in these examples is clear from the fact that the inanimate noun phrases do not have the proper semantic properties to be assigned the agent roles of the illocutionary verbs *beloven* and *dreigen*.

(500) a. Het boek$_i$ belooft [t_i een succes te worden].
the book promises a success to become
‘The book promises to become a success.’
b. De boek$_i$ dreigt [t_i op de vloer te vallen].
the book threatens on the floor to fall
‘The book threatens to fall on the floor.’

That the nominative subjects are not arguments of the verb *beloven* and *dreigen* receives more support from the fact illustrated in the primeless examples in (501) that the infinitival clause cannot be pronominalized without the subject of the sentence. In fact, the primed examples show that anticipatory elements *het/ermee* cannot be used to introduce the infinitival clause either.

(501) a. *Het boek belooft het. [cf. Jan belooft het]
the book promises it
a′. *Het boek$_i$ belooft (het) [t_i een succes te worden].
the book promises it a success to become
b. *Het boek dreigt ermee. [cf. Jan dreigt ermee]
the book threatens with.it
b′. *Het boek$_i$ dreigt (ermee) [t_i op de vloer te vallen].
the book threatens with.it on the floor to fall

A third argument in favor of subject raising is that the complementizer *om* is prohibited: the ungrammaticality of the examples in (502) is as expected given that *om* + *te*-infinitivals are °islands for movement and thus block the °NP-movements indicated. Note that in this respect the modal verbs *beloven* and *dreigen* behave conspicuously different from the corresponding illocutionary verbs in (498c) and (499c), which readily allow *om* + *te*-infinitivals as their complements.

(502) a. *Het boek$_i$ belooft [om t_i een succes te worden].
the book promises COMP a success to become
Intended reading: ‘The book promises to become a success.’
b. *Het boek$_i$ dreigt [om t_i op de vloer te vallen].
the book threatens COMP on the floor to fall
Intended reading: ‘The book threatens to fall on the floor.’

A fourth argument is that *beloven* and *dreigen* are like the run-of-the-mill subject raising verbs *blijken* ‘to turn out’, *schijnen* ‘to seem’ and *lijken* ‘to appear’ discussed in Subsection A in that they are often not accepted in the perfect tense, but trigger the IPP-effect if speakers do accept it; this is clear from the fact that Barbiers (2006) marks (503) as unacceptable, whereas Van Dreumel and Coppen (2003) assign it a question mark to indicate that not all speakers consider it grammatical.

(503) $^{\%}$Het heeft dreigen te stormen.
it has threaten to storm
‘A gale has been threatening to blow up.’

3. The meaning of beloven *and* dreigen *in subject raising constructions*

In subject raising constructions, *beloven* and *dreigen* assume an evidential or, perhaps, epistemic modal meaning; they express that the available evidence is sufficient for the speaker to conclude that the °eventuality expressed by the infinitival clause will come to pass. The original illocutionary meaning of these verbs is lost: they no longer denote the illocutionary acts of promising or threatening but express, respectively, a positive and a negative evaluation held by the speaker of the eventuality expressed by the infinitival clause; cf. Verhagen (2005) and Vliegen (2006).

That we are dealing with modal verbs is supported by the fact that the choice of present or past tense may affect the implications concerning the question as to whether the embedded proposition is actually realized; see Section 1.5.2 for similar observations regarding epistemic modals like *moeten* 'must' and *kunnen* 'may'. Consider the examples in (504). Example (504a) leaves entirely open whether Marie's promising career will actually lead to her being a great writer. Example (504b), on the other hand, strongly suggests that something unforeseen has occurred: Marie would have been a great writer if, e.g., she had not been killed in an accident.

(504) a. Marie belooft een groot schrijver te worden.
Marie promises a great writer to become
'Marie promises to become a great author.'
b. Marie beloofde een groot schrijver te worden.
Marie promised a great writer to become
'Marie promised to become a great author.'

The reason for the negative implication in (504b) is pragmatic in nature and follows from Grice's (1975) °maxim of quantity: if at the moment of speaking the speaker knows that Marie is already a great author, he can be more precise by simply using a present tense: *Marie is een groot schrijver (geworden)* 'Marie is/has become a great author'. That we are dealing with pragmatics is also clear from the fact that any negative inference can be overruled by contextual information: for example, adding the adverbial phrase *al vroeg* 'already early in her career' to example (504b) results in the positive implication that Marie is a great author at the moment of speaking; cf. *Marie beloofde al vroeg een groot schrijver te worden* 'Already early in her career Marie promised to become a great author'. Of course, we do not only find this pragmatic effect in the case of *beloven*, but also (and perhaps more pervasively) in the case of *dreigen*.

4. The predicate of the infinitival clause in subject raising constructions

The corpus investigation in Vliegen (2006) has shown that in the vast majority of cases the infinitival clauses embedded under modal *beloven* are copular constructions; cf. the examples in (505).

(505) a. Jan belooft een goed mens te worden. [ambiguous]
Jan promises a good person to become
‘Jan promises (≈ makes a promise) to become a good person.’
‘Jan promises (≈ can be expected) to become a good person.’
b. Jan belooft het huis te kopen. [modal reading virtually excluded]
Jan promises the house to buy
‘Jan promises (≈ makes a promise) to buy the house.’

The predicate infinitival clauses embedded under modal *dreigen*, on the other hand, can be more varied; the examples in (506) are both fully acceptable in a modal reading.

(506) a. Jan dreigt een slecht mens te worden. [modal reading preferred]
Jan threatens a bad person to become
‘Jan can be expected to become a bad person.’
b. Jan dreigt het huis te kopen. [ambiguous]
Jan threatens the house to buy
‘Jan threatens (≈ makes a threat) to buy the house.’
‘Jan can be expected to buy the house.’

The higher degree of productivity of the subject raising construction with modal *dreigen* may be related to the fact, also noted by Vliegen, that it arose earlier in the language than the corresponding construction with *beloven*, with the result that the illocutionary reading of the latter may be more prominent than that of the former.

5. Ambiguous cases

The previous subsection has shown that constructions with *beloven* and *dreigen* can be ambiguous if the nominative subject is animate; cf. Bennis & Hoekstra (1989c:174-5). The verb *beloven* in examples such as (507a) can be interpreted as a control verb or as a subject raising verb, because there are no syntactic clues favoring one interpretation over the other. Of course, we abstract away from the fact that the (extra-)linguistic context may disambiguate (507a) by favoring a specific interpretation.

(507) a. Jan belooft een goed mens te worden. [ambiguous]
Jan promises a good person to become
‘Jan promises to become a good person.’
b. Jan$_i$ belooft [PRO$_i$ een goed mens te worden]. [control]
b′. Jan$_i$ belooft [t_i een goed mens te worden]. [subject raising]

Example (507a) can be disambiguated by adding the complementizer *om* or (perhaps) by adding the °anticipatory pronoun *het* ‘it’ (which gives rise to a somewhat marked result here), as these additions both exclude the subject raising reading; for convenience, the elements originating inside the infinitival clause are italicized in (508).

(508) a. Jan belooft *om* *een goed mens* *te worden*. [control only]
Jan promises COMP a good person to become
b. $^{(?)}$Jan belooft het *een goed mens* *te worden*. [control only]
Jan promises it a good person to become

Furthermore, the examples can also be disambiguated if they are used as embedded clauses. If the infinitival clause is in extraposed position, as in (509a), we normally interpret the construction as a control structure with an illocutionary verb (but see Subsection C for more discussion). If we are dealing with a split infinitival/verb clustering, as in (509b), we normally have to do with a subject raising construction with a modal verb (although Section 5.2.2.3 will show that we should be careful not to jump to conclusions in cases in which clause splitting seems to be possible).

(509) a. dat Jan belooft *een goed mens* *te worden*. [control]
that Jan promises a good person to become
b. dat *Jan een goed mens* belooft *te worden*. [subject raising]
that Jan a good person promises to become

An additional way of disambiguating (507a) is the addition of an indirect object; example (510) does not allow a modal interpretation of the verb *beloven*. This is also clear from the fact illustrated in the (b)-examples that the infinitival clause cannot be split in embedded contexts The disambiguating effect of adding an indirect object indicates that control and subject raising verbs do not only differ in meaning but also in °adicity. Note that we added a number sign to (510b′) to indicate that, surprisingly, many speakers consider this example acceptable under a control reading; see Section 5.2.2.3 for discussion.

(510) a. Jan belooft Marie een goed mens te worden. [control only]
Jan promises Marie a good person to become
‘Jan promises Marie to become a good person.’
b. dat Jan Marie belooft *een goed mens* *te worden*. [control]
that Jan Marie promises a good person to become
b′. $^{\#}$dat *Jan* Marie *een goed mens* belooft *te worden*. [subject raising]
that Jan Marie a good person promises to become

The verb *dreigen* in examples such as (511a) can be interpreted as a control verb or as a subject raising verb, again because there are no syntactic clues favoring one interpretation over the other; again, we abstract away from the fact that the context may disambiguate (507a) by favoring a specific interpretation.

(511) a. De gemeente dreigt het kraakpand te slopen. [ambiguous]
the municipality threatens the squat to demolish
‘The municipality threatens to demolish the squat.’
b. De gemeente$_i$ dreigt [PRO$_i$ het kraakpand te slopen]. [control]
b′. De gemeente$_i$ dreigt [t_i het kraakpand te slopen]. [subject raising]

Like example (507a) with *beloven*, example (511a) can be disambiguated by adding the complementizer *om* or by adding an anticipatory pronominal element, which surfaces here as the PP *ermee* ‘with it’; both options exclude the subject raising reading. For convenience, the elements that originate within the infinitival clause are again italicized in (512).

(512) a. De gemeente dreigt *om het kraakpand te slopen*. [control only]
the municipality threatens COMP the squat to demolish
b. De gemeente dreigt ermee *het kraakpand te slopen*. [control only]
the municipality threatens with.it the squat to demolish

The examples are also disambiguated when they are used as embedded clauses: if the infinitival clause is in extraposed position, as in (513a), we are normally dealing with a control structure; if we find clause splitting, as in (513b), the subject raising reading is preferred (we return to this issue in Section 5.2.2.3).

(513) a. dat de gemeente dreigt *het kraakpand te slopen*. [control only]
that the municipality threatens the squat to demolish
'that the municipality threatens to demolish the squat.'
b. dat *de gemeente het kraakpand* dreigt *te slopen*. [subject raising]
that the municipality the squat threatens to demolish
'that the municipality threatens to demolish the squat.'

An alternative way of disambiguating example (511a) is passivization. In the control construction the nominative subject is an agentive argument of the verb *dreigen* and, consequently, we expect impersonal passivization of this verb to be possible in the control reading; example (514a) shows that this expectation is indeed borne out. In the subject raising construction the nominative subject is an argument of the infinitival verb, and we expect passivization to result in promotion of the object of the infinitival verb to subject, with the concomitant suppression of the nominative subject of the corresponding active construction; example (514b) shows that this expectation is again borne out.

(514) a. Er werd gedreigd *het kraakpand te slopen*. [control only]
there was threatened the squat to demolish
'They threatened to demolish the squat.'
b. *Het kraakpand* dreigde *gesloopt te worden*. [subject raising only]
the squat threatened demolished to be
'The squat was in danger of being demolished.'

Although we would in principle expect the same passivization possibilities for *beloven*, we have not been able to construct examples of the sort in (514b) with it. This is clearly related to the fact noted earlier that examples such as (515a) cannot be construed as subject raising constructions.

(515) a. De gemeente belooft het kraakpand te slopen. [control only]
the municipality promises the squat to demolish
'The municipality promises to demolish the squat.'
b. De gemeente$_i$ belooft [PRO$_i$ het kraakpand te slopen]. [control]
the municipality promises the squat to demolish
b′. *De gemeente$_i$ belooft [t_i het kraakpand te slopen]. [subject raising]
the municipality promises the squat to demolish

The fact that (515a) does not allow a subject raising reading correctly predicts that passivization of the verb *beloven* is possible, but that passivization of the infinitival verb is impossible. The former is due to the fact that the implied PRO-subject in the resulting structure in (516a) can be controlled by the noun phrase in the agentive *door*-phrase (which can of course also be left implicit, in which case PRO receives an arbitrary interpretation). Giving an explanation for the latter is somewhat more complicated given that we must take into account two different structures. First, the control structure in (516b) is probably excluded because the noun phrase *de gemeente* 'the municipality' is no suitable antecedent for the implied PRO-subject of the passive infinitival clause for semantic reasons. Second, the subject raising construction in (516b′) is, of course, excluded because *beloven* simply does not allow subject raising; cf. (515b′).

(516) a. Er werd door de gemeente$_i$ beloofd [PRO$_i$ het kraakpand te slopen].
there was by the municipality promised the squat to demolish
'It was promised by the municipality to demolish the squat.'
b. *De gemeente$_i$ belooft [PRO$_?$ gesloopt te worden]. [control]
the municipality promises demolished to be
b′. *Het kraakpand$_i$ belooft [t_i gesloopt te worden]. [subject raising]
the squat promises demolished to be

In short, since in the vast majority of cases the modal verb *beloven* takes an infinitival copular construction as its complement, and copular constructions do not allow passivization, we predict that subject raising constructions with embedded infinitival passive clauses will be rare (if existing at all).

C. Other verbs

The subject raising verbs discussed in Subsections A and B are the ones that are common in colloquial speech. There are, however, a number of other verbs occurring in subject raising(-like) constructions that belong to the formal register, and which may be considered somewhat obsolete. Clear examples of such constructions are those with the modal verbs *dunken* 'to deem/be of the opinion', *toeschijnen* 'to seem', *voorkomen* 'to appear' mentioned in (470b), which all have more or less the same meaning and behavior as the verb *lijken* 'to appear'; for example, these verbs can all be combined with an experiencer object. The modal verb *heten* 'to be reported', which was also listed in (470b), is more like the verb *schijnen*; it refers to hearsay/rumors and is thus not compatible with an experiencer object. Since constructions with such verbs do not seem to provide any new syntactic insights, we will not discuss them here.

We have seen that subject raising verbs are characterized by the fact that they take a transparent infinitival clause. It must, however, be emphasized that the selection of a transparent infinitival clause is a *necessary* but not a *sufficient* condition for assuming subject raising; Section 5.2.2.3 will show that there are many control verbs that also allow the IPP-effect and verb clustering. Consider for instance the verb *proberen* in (517), which can take either an opaque or a transparent infinitival clause.

(517) a. Jan heeft geprobeerd *dat boek te lezen*. [opaque: no IPP & extraposition]
Jan has tried that book to read
'Jan has tried to read that book.'
b. Jan$_i$ heeft *dat boek* proberen *te lezen*. [transparent: IPP & verb clustering]
Jan has that book try to read
'Jan has tried to read that book.'

That we are not dealing with subject raising in (517b) is suggested by the fact that the two constructions do not seem to differ in meaning, and is also supported by the fact illustrated in the examples in (518) that the italicized part can be pronominalized in both constructions while leaving the nominative subject *Jan* in place. Note in passing that in the case of (517b) pronominalization requires that the infinitival form *proberen* be replaced by its participial counterpart *geprobeerd*; this is due to the fact that there is no longer a dependent *te*-infinitival clause present which may trigger the IPP-effect; (518a) can therefore be seen as the pronominalized counterpart of both examples in (517).

(518) a. Jan heeft dat geprobeerd.
Jan has that tried
b. *Dat heeft geprobeerd.
that has tried

There are many verbs like *proberen* 'to try' that can select either an opaque or a transparent *te*-infinitival clause but it is often difficult to establish for such verbs whether a subject raising analysis is possible. The problem is augmented by the earlier noted fact that many of the constructions that may be eligible for a subject raising analysis are characteristic of the formal register. In fact, it is not uncommon to find subject raising-like constructions in the formal register with atypical properties, even with subject raising verbs that occur frequently in colloquial speech. This was already indicated in Table (482), which shows that it is not impossible to find perfect-tense constructions with the verbs *blijken* and *lijken* that do not exhibit the IPP-effect. Likewise, Subsection B has shown that the subject raising verb *dreigen* normally does not allow extraposition, but Vliegen (2006) nevertheless found a number of (mostly formal) examples in his corpus in which the infinitival clause clearly is in extraposed position. It is not unlikely that such examples are relics from older stages of the language that have survived in the formal register.

The above means that it often needs subtle argumentation to establish whether or not a specific verb may occur in a subject raising construction. We illustrate this with two examples. The first example involves the verb *menen*. Haeseryn et al. (1997:951) show that the clause selected by this verb can either be a transparent or an opaque infinitival, which show a subtle meaning difference: in (519a) the verb *menen* is claimed to mean "to be of the opinion", whereas in (519b) it is claimed to have the epistemic-like modal meaning "to wrongly suppose".

(519) a. dat hij meent/heeft gemeend *de waarheid te vertellen.* [opaque]
that he thinks/has thought$_{\text{Part.}}$ the truth to tell
‘that he thinks/thought that he is/was telling the truth.’
b. dat hij *de waarheid* meent/heeft menen *te vertellen*. [transparent]
that he the truth thinks/has think$_{\text{Inf.}}$ to tell
‘that he (wrongly) believes/believed that he is/was telling the truth.’

The fact that the syntactic differences between the two examples go hand-in-hand with a difference in meaning suggests that the two constructions may require a control and a subject raising analysis, respectively. Additional evidence is, however, hard to come by. Pronominalization of the infinitival clause in (519b), for example, cannot affect the nominative subject of the clause: cf. **Dat meende.* Furthermore, the nominative subject of sentence (519b) is typically animate, which suggests that the subject must satisfy selection restrictions imposed by the verb *menen,* which, in turn, implies that it functions as an argument of this verb and that we are therefore dealing with a control construction. Assuming that (519b) is not a subject raising but a control construction would also account for the acceptability contrast between the two primed examples in (520), in which the embedded infinitival clause is passivized.

(520) a. dat Jan *zijn dochter* meende *te hebben gezien*. [transparent]
that Jan his daughter thought to have seen
‘that Jan believed to have seen his daughter.’
a′. dat zijn dochter meende te zijn gezien.
that his daughter thought to have.been seen
‘that his daughter thought to have been seen.’
b. dat Jan *zijn gestolen auto* meende *te hebben gezien*. [transparent]
that Jan his stolen car thought to have seen
‘that Jan believed to have seen his stolen car.’
b′. *dat zijn gestolen auto meende te zijn gezien.
that his stolen car thought to have.been seen

The contrast between the primed passive examples in (520) can be accounted for elegantly by the control analysis in the (a)-examples in (521), which are given in main clause order for simplicity. Whereas the animate subject *zijn dochter* ‘his daughter’ in (520a′) satisfies the selection restrictions of *menen*, the inanimate subject *zijn gestolen auto* ‘his stolen car’ in (520b′) does not, which leads to a semantically infelicitous result: so the representation in (521a′) is correctly predicted to be ungrammatical. Under the subject raising analysis in the (b)-examples, on the other hand, we cannot appeal to these selection restrictions as the surface subject is not the external argument of *menen* but the internal argument of the main verb of the infinitival clause. Consequently, the contrast would remain unexplained, regardless of whether the representation is deemed grammatical or ungrammatical. This strongly suggests that a subject raising analysis is not viable for constructions in which the verb *menen* takes a transparent infinitival complement. From this we can safely conclude that the subject raising analysis in the (b)-examples cannot be correct.

(521) a. Zijn dochter$_i$ meende [PRO$_i$ gezien te zijn]. [control analysis]
a′. *Zijn gestolen auto$_i$ meende [PRO$_i$ gezien te zijn].
b. Zijn dochter$_i$ meende [t_i gezien te zijn]. [subject raising analysis]
b′. Zijn gestolen auto$_i$ meende [t_i gezien te zijn].

This is clearly different for another verb that has been claimed to belong to the set of evidential modal verbs, *plegen* ‘to be accustomed/tend’; see Vliegen (to appear). Normally speaking, subjects of constructions with this modal verb can be inanimate, as shown by *Die klok pleegt achter te lopen* ‘That clock tends to be slow’ taken from the electronic Van Dale dictionary Dutch/English 2009. Another illustration of this fact is given in (522b) by means of a passive construction that is comparable to (520b′).

(522) a. dat wij onze computers jaarlijks plegen te controleren.
that we our computers annually are.accustomed to check
‘that we normally check our computers annually.’
b. dat onze computers jaarlijks gecontroleerd plegen te worden.
that our computers annually checked are.accustomed to be
‘that our computers are normally checked annually.’

The fact that the subject of *plegen* can be inanimate strongly favors the subject raising analysis in (523b): the control analysis in (523a) would again lead us to expect (522b) to evoke a violation of the selection restrictions of *plegen*, which requires an agentive subject when it denotes an event.

(523) a. *Onze computers$_i$ plegen [PRO$_i$ jaarlijks gecontroleerd te worden].
b. Onze computers$_i$ plegen [t_i jaarlijks gecontroleerd te worden].

A number of other verbs from the formal register that pass the inanimacy test are the verbs *behoren* ‘to be supposed’, *dienen* ‘must’, *hoeven* ‘need’, which are again modal in nature. We simply illustrate this by means of passive examples in (524).

(524) a. Deze klok behoort/dient dagelijks opgewonden te worden.
this clock is.supposed/must daily up-wound to be
‘This clock is supposed to/must be wound up daily.’
b. Deze klok hoeft niet dagelijks opgewonden te worden.
this clock need not daily up-wound to be
‘This clock need not be wound up daily.’

III. Passive subject raising construction

We conclude the discussion of subject raising by investigating a construction of a more limited type, which we will refer to as the passive subject raising construction. Subsection A starts with a discussion of the prototypical examples in (525) that involve the verbs *achten* ‘to expect’ and *veronderstellen* ‘to suppose’, which are often claimed to be restricted to specific registers or even to be idiomatic; cf. the lemma *achten* in the electronic Van Dale dictionary Dutch/English 2009.

(525) Jan wordt geacht/verondersteld dat boek te lezen.
Jan is expected/supposed that book to read
'Jan is expected/supposed to read that book.'

Subsection B discusses a second set of passive subject raising constructions involving subject control verbs of the type *beweren* 'to claim', which were characterized as obligatory control verbs in Section 5.2.2.1, sub I. Examples such as (526a) elicit different acceptability judgments from speakers; see, e.g., Bennis & Hoekstra (1989c:177) and Sturm (1990:278). They are, however, better than corresponding examples such as (526b) with non-obligatory subject control verbs like *proberen* 'to try'.

(526) a. $^{\%}$Jan wordt beweerd dat boek te lezen.
Jan is claimed that book to read
'Jan is claimed to have read that book.'
b. *Jan wordt geprobeerd dat boek te lezen.
Jan is tried that book to read

Subsection C is slightly more theoretical in nature and tries to relate the contrast between the two examples in (526) to another difference that was hypothesized in Section 5.2.2.1, sub IV, to exist between obligatory and non-obligatory control verbs. The markedness of (526) does not follow from this difference, but can be assumed to reflect a typical property of semi-transparent *te*-infinitival clauses; see Section 5.2.2.3 for an extensive discussion of the distinction between opaque and (semi-)transparent infinitivals. For completeness' sake, we refer to Bennis & Hoekstra (1989c: Section 6.6) for an alternative proposal that departs from a different set of assumptions, but which seems quite similar in spirit at a somewhat deeper level to the one proposed here.

A. Idiomatic passive subject raising constructions: Geacht/verondersteld worden

Typical instantiations of the passive subject raising construction are given in the primeless examples in (527); these examples are characterized by the fact that the matrix predicates are in the passive voice, without there being active counterparts; the active sentences in the primed examples are unacceptable.

(527) a. Jan wordt geacht dat boek te lezen.
Jan is expected that book to read
'Jan is expected to read that book.'
a′. *Wij achten Jan dat boek te lezen.
we expect Jan that book to read
Intended reading: 'We expect Jan to read that book.'
b. Jan wordt verondersteld dat boek te lezen.
Jan is supposed that book to read
'Jan is supposed to read that book.'
b′. *We veronderstellen Jan dat boek te lezen.
we suppose Jan that book to read
Intended reading: 'We suppose that Jan will read that book.'

It seems unlikely that the primeless examples in (527) are control constructions. The reason is that at least the verb *veronderstellen* is not a ditransitive verb. It is clear from (528a) that this verb does not allow an object when it takes a finite complement. Consequently, the corresponding passive construction in (528b) is impersonal: replacing the °expletive pronoun *er* by a referential noun phrase such as *Marie* leads to ungrammaticality. Unfortunately, we cannot show the same for *achten* since this verb does not take finite argument clauses.

(528) a. We veronderstellen (*Marie) [dat Jan dat boek leest].
we suppose Marie that Jan that book reads
'We suppose that Jan is reading that book.'
b. Er/*Marie wordt verondersteld [dat Jan dat boek leest].
there/Marie is supposed that Jan that book reads
'It is supposed that Jan is reading that book.'

The discussion of the examples in (528) implies that the nominative subject of the passive construction in (527b) cannot be an argument of *veronderstellen* either, but must originate within its complement clause. This implies subject raising and precludes a control analysis; see also Bennis & Hoekstra (1989c:176ff.). If we assume that the conclusion for *veronderstellen* carries over to the verb *achten*, we end up with the primeless structures in (529); the primed structures are not possible.

(529) a. Jan$_i$ wordt geacht [t_i dat boek te lezen].
a′. *Jan$_i$ wordt geacht [PRO$_i$ dat boek te lezen].
b. Jan$_i$ wordt verondersteld [t_i dat boek te lezen].
b′. *Jan$_i$ wordt verondersteld [PRO$_i$ dat boek te lezen].

An empirical argument in favor of the subject raising analysis is provided by Den Besten (1985:fn.8), who shows that nominative subjects may follow the participles *geacht* and *verondersteld* in clause-final position if they are indefinite; we illustrate this in (530), in which we have italicized the subjects of the constructions for convenience. Similar examples are easy to find on the internet by means of the search string [*er wordt geacht/verondersteld (g)een*].

(530) a. Er wordt geacht *geen verschil tussen man en vrouw* te zijn.
there is supposed no difference between man and woman to be
'There is assumed to be no difference between man and woman.'
b. Er wordt verondersteld *een gezagsverhouding* aanwezig te zijn indien ...
there is assumed a power.relationship present to be if
'There is assumed to exist a relation of power if …'

If indefinite subjects can remain in their base position (see Section N8.1.4), the examples in (530) would support the claim that the nominative subjects of the constructions are base-generated in their infinitival complement clauses. Note for completeness' sake that indefinite subjects of expletive passive constructions normally precede the passivized verb in clause-final position: cf. *Er is gisteren <een man> vermoord <*een man>* 'There was a man killed yesterday'.

There are, however, also obvious problems for the subject raising analysis. First, it leaves unexplained why the primed examples in (527) are unacceptable:

why is it impossible for the active verbs *achten* and *veronderstellen* to assign °accusative case to the subject of the *te*-infinitivals, as is normally assumed to be possible in the corresponding English translation, which are fully grammatical? Just as surprising is the fact that the primed examples are also unacceptable if we replace the noun phrase *Jan* by the implied subject PRO; given that there is a suitable controller available there is no *a priori* reason why PRO should be excluded.

(531) a. *Wij achten [Jan/PRO dat boek te lezen].
we expect Jan/PRO that book to read
Intended reading: 'We expect Jan/PRO to read that book.'
b. *We veronderstellen [Jan/PRO dat boek te lezen].
we suppose Jan/PRO that book to read
Intended reading: 'We suppose Jan/PRO to read that book.'

A second problem for assuming that the primeless examples in (527) are subject raising constructions is that Subsection II has established that subject raising normally requires verb clustering in clause-final position. The examples in (532) show, however, that the infinitival clause is normally extraposed in passive subject raising constructions; the infinitival clause normally follows the participle in clause-final position and splitting the *te*-infinitival gives rise to a marked result at best.

(532) a. Jan wordt <$^{?}$dat boek> geacht <dat boek> te lezen.
Jan is that book expected to read
'Jan is expected to read that book.'
b. Jan wordt <$^{??}$dat boek> verondersteld <dat boek> te lezen.
Jan is that book supposed to read
'Jan is supposed to read that book.'

This atypical behavior of the passive subject raising construction may be due to the fact that it is not part of °core grammar but of the °periphery (the consciously learned part) of the grammar. Seuren & Hamans (2009:fn.18), for example, claim that passive subject raising constructions are restricted to "the higher social register" and that they are not productive: they mainly occur with the predicates *geacht worden* and *verondersteld worden*; see also Den Besten (1985), who characterized even the constructions with these predicates as marked. If we are indeed dealing with a peripheral construction, it may be that its exceptional behavior is simply a reflex of the diachronic origin of the construction; see also the discussion in Subsection IIC.

B. Passivized subject control verbs

Some speakers allow a wider variety of predicates, as is clear from the fact that the predicates in (533b) are explicitly cited in the literature as possible in passive subject raising constructions; see, e.g., Bennis & Hoekstra (1989c) and Vanden Wyngaerd (1994). Genuine examples of this type can also be found on the internet by means of the search string [*wordt* $V_{participle}$ *te*], although one must be aware that there are also many cases that look like the products of machine translation. If the predicates in (533b) are indeed acceptable in passive subject raising constructions, the productivity of the construction may be much higher than suggested by Seuren & Hamans (2009).

(533) a. *Geacht worden* 'be expected', *verondersteld worden* 'be supposed'
b. *Aangenomen worden* 'be assumed', *beweerd worden* 'be claimed', *gezegd worden* 'be said', *verwacht worden* 'be expected'

It should be noted, however, that it is not *a priori* the case that the passive predicates in (533a) and (533b) can be treated on a par, given that they differ in a non-trivial way; whereas we have seen that the former do not have any active counterpart, examples (534a&b) show that the latter correspond to active subject control constructions. For the moment we ignore the unacceptable impersonal passive example in (534c), but we will return to it shortly.

(534) a. Jan$_i$ beweert [PRO$_i$ de beste te zijn]. [subject control]
Jan claims the best to be
'Jan claims to be the best.'
b. $^{\%}$Jan$_i$ wordt beweerd [t$_i$ de beste te zijn]. [subject raising]
Jan is claimed the best to be
'Jan is claimed to be the best.'
c. *Er wordt beweerd [PRO$_?$ de beste te zijn]. [impersonal passive]
there is claimed the best to be

Subject raising with passivized subject control verbs seems possible only if we are dealing with obligatory control in the sense defined in (535); See Section 5.2.2.1 for an extensive discussion of this notion.

(535) Obligatory control requires the antecedent of PRO to:
a. be overtly realized in the sentence containing PRO;
b. be local (a co-argument of the infinitival clause containing PRO);
c. be a °c-commanding nominal argument (subject or object);
d. be unique (cannot be "split").

Constructions with the subject control verb *beweren* 'to claim' satisfy the definition in (535), as is clear from the fact illustrated in example (534c) that they do not allow impersonal passivization. The subject control verb *proberen* 'to try' in (536a), on the other hand, does not involve obligatory control, as is clear from the fact illustrated in (536c) that it allows impersonal passivization. That *proberen* cannot be found in the passive subject raising construction is clear from the fact that (536b) is rejected by all speakers.

(536) a. Jan$_i$ probeerde [(om) PRO$_i$ de deur te sluiten]. [subject control]
Jan tried COMP the door to close
'Jan tried to close the door.'
b. *Jan$_i$ werd geprobeerd [(om) t_i de deur te sluiten]. [subject raising]
Jan was tried COMP the door to close
c. Er werd geprobeerd [(om) PRO$_{arb}$ de deur te sluiten]. [imp. passive]
there was tried COMP the door to close
'It was tried to close the door.'

C. Obligatory versus non-obligatory control verbs

This subsection shows that the mutual exclusion of the (b)- and (c)-examples in (534) and (536) can be accounted for by appealing to the distinction between *om* + *te*- and *te*-infinitivals made in Section 5.2.2.1, sub IV. The hypothesis formulated there was that *om* + *te*-infinitivals are CPs and that CP-boundaries block locally restricted syntactic dependencies like °NP-movement (e.g., subject raising) and obligatory control, whereas *te*-infinitivals are TPs and TP-boundaries do not block such dependencies. We repeat this cluster of hypotheses here as (537), which in tandem express that locally restricted syntactic dependencies can be established across the boundary of a *te*-, but not across the boundary of an *om* + *te*-infinitival.

(537) a. Hypothesis I: *om* + *te*-infinitivals are CPs.
b. Hypothesis II: *te*-infinitivals are TPs.
c. Hypothesis III: CPs constitute islands for syntactic dependencies.
b. Hypothesis IV: TPs do not constitute islands for syntactic dependencies.

The claim that CPs but not TPs are syntactic °islands for obligatory control was used to account for the fact that verbs like *beweren*, which select *te*-infinitivals as their complement, trigger obligatory control, while verbs like *proberen*, which select *om* + *te*-infinitivals, involve non-obligatory control.

(538) a. Jan$_i$ beweert [$_{TP}$ PRO$_i$ de beste te zijn]. [obligatory control]
Jan claims the best to be
b. Jan$_i$ probeerde [$_{CP}$ (om) PRO$_i$ de deur te sluiten]. [non-obligatory control]
Jan tried COMP the door to close

This difference between *beweren* and *proberen* is confirmed by the difference in behavior with respect to impersonal passivization illustrated in (534c) and (536c), which are repeated here in a slightly more precise form as (539). In accordance with hypothesis III, the CP-complement of *proberen* does not allow the PRO-subject to enter into an obligatory control relation with a controller in the matrix clause, and (535a) therefore allows the PRO-subject in (539b) to be controlled by the implied agent of the matrix clause, and thus to be assigned arbitrary reference. In accordance with hypothesis IV, the TP-complement of *beweren* does allow the PRO-subject to enter into an obligatory control relation with a controller in the matrix clause, and consequently (535a) prohibits control of the PRO-subject in (539a) by the implied agent of the matrix clause; consequently, PRO cannot be assigned an interpretation and the structure is uninterpretable.

(539) a. *Er wordt beweerd [$_{TP}$ PRO$_?$ de beste te zijn].
there is claimed the best to be
b. Er werd geprobeerd [$_{CP}$ (om) PRO$_{arb}$ de deur te sluiten].
there was tried COMP the door to close
'It was tried to close the door.'

Interestingly, the difference in behavior with respect to subject raising illustrated in (534b) and (536b), repeated here in a slightly more precise form as (540), follows from the same set of assumptions without further ado. According to hypothesis IV, the TP-complement of *beweren* does not block movement and thus allows the subject raising structure in (540a). Hypothesis IV, on the other hand, predicts that the CP-complement of *proberen* does block movement and hence excludes the structure in (540b).

(540) a. $^{\%}$Jan$_i$ wordt beweerd [$_{TP}$ t$_i$ de beste te zijn].
Jan is claimed the best to be
'Jan is claimed to be the best.'
b. *Jan$_i$ werd geprobeerd [$_{CP}$ (om) *t*$_i$ de deur te sluiten].
Jan was tried COMP the door to close

The hypotheses I-IV thus only leave us with the question why subject raising in examples such as (540a) is considered marked by most speakers, given that this clearly does not follow from the discussion above. We believe that this can be related to the fact that passive subject raising constructions involve extraction from a *te*-infinitival in extraposed position; Section 5.2.2.3, sub VII, will show on the basis of independent empirical evidence that movement from such infinitival clauses is more generally judged to be acceptable, but marked.

5.2.2.3. Extraposition and verb clustering

The discussion of *te*-infinitivals in the previous sections was simplified in that it abstracted away from one important issue that would have complicated the exposition considerably. The fact is that Section 5.2.2.1 restricts its attention to obligatory control constructions such as (541a), in which the *te*-infinitival is in extraposed position as a whole, that is, placed in a position following the verbs in clause-final position. Obligatory control constructions such as (541b), in which the *te*-infinitivals are discontinuous with the result that the verbs of the matrix and the embedded infinitival clause cluster together, are not discussed. For the reader's convenience, we have italicized the infinitival clauses and underlined the verbs in these examples.

(541) a. dat Jan ontkent *het huis te kopen*. [extraposition]
that Jan denies the house to buy
'that Jan denies buying the house.'
b. dat Jan *het huis* eindelijk durft *te kopen*. [verb clustering]
that Jan the house finally dares to buy
'that Jan finally dares to buy the house.'

Although the difference between °extraposition and °verb clustering has been on the research agenda since Bech (1955) and Evers (1975), it is still giving rise to numerous questions and difficulties (both of a descriptive and of a more theoretical nature). This section will focus on the fact that the difference between extraposition and verb clustering is often seen as a difference in TRANSPARENCY of the infinitival clause. Since verb clustering is normally derived by movement of some element from within the infinitival clause to some position in the matrix clause (°head movement or adjunction of the *te*-infinitive to the higher matrix verb in Evers' original proposal, though Chapter 7 will show that alternative proposals involving XP-movement are also available), extraposition can be forced by assuming that infinitival clauses in examples such as (541a) are OPAQUE, that is, they are °islands for locally restricted syntactic dependencies like head- and XP-movement. However, this conclusion is at odds with the fact established in Section 5.2.2.1 that examples such as (541a) involve obligatory control, which is likewise a locally restricted °syntactic dependency; if *te*-infinitivals in extraposed position are islands for movement, we wrongly predict that they are also islands for obligatory control. This section should therefore investigate whether it is actually true that extraposed *te*-infinitivals are islands for movement, and our conclusion will be that they are not. Given the complexity of the topic involved, we will begin the discussion by giving a bird's eye view of the following discussion and by summarizing the main conclusions.

I. A brief outline of the discussion and its conclusions

Subsection II starts by briefly repeating one of the main findings from our discussion of (*om* +) *te*-infinitivals in Sections 5.2.1 and 5.2.2, which we will adopt as our point of departure: while constructions with *om* + *te*-infinitival argument clauses such as (542a) are non-obligatory control constructions categorically, constructions with *te*-infinitival argument clauses like (542b&c) involve either obligatory control or subject raising, depending on whether or not the verb selecting the infinitival clause also selects an external argument.

(542) a. Jan$_i$ probeerde [$_{CP}$ (om) PRO$_i$ dat boek te lezen]. [non-obligatory control]
Jan tried COMP that book to read
'Jan tried to read that book.'
b. Jan$_i$ beweert [$_{TP}$ PRO$_i$ dat boek te lezen]. [obligatory control]
Jan claims that book to read
'Jan claims to be reading that book.'
c. Jan$_i$ blijkt [$_{TP}$ *t*$_i$ dat boek te lezen]. [subject raising]
Jan turns.out that book to read
'Jan turns out to be reading that book.'

Examples like (542a&b) can be distinguished by means of impersonal passivization of the matrix clause, which is possible in the case of non-obligatory control but excluded in the case of obligatory control. Examples like (542b&c) can be distinguished by means of pronominalization, which also affects the nominative subject of the entire construction if we are dealing with subject raising, but not if we are dealing with control; cf. the examples in (543).

(543) a. Jan beweert dat a′ *Dat beweert.
Jan claims that that claims
b. Dat blijkt. b′. *Jan blijkt dat.
that turns.out Jan turns.out that

Section III discusses the distinction between extraposition and verb-clustering infinitives like (541a&b). The generalization given above suggests that there are two main syntactic types of infinitival complement clauses: *om* + *te*-infinitivals, which are CPs and constitute islands for locally restricted syntactic dependencies like obligatory control and subject raising, and *te*-infinitivals, which are TPs and are transparent for such dependencies. The examples in (541) have further shown that there are reasons to subdivide the set of *te*-infinitivals into two subclasses; one type behaving like *om* + *te*-infinitivals in that they are in extraposed position and do not trigger the °IPP-effect in perfect-tense constructions, and a second type that rather behaves like bare infinitivals in that they require verb clustering and do exhibit the IPP-effect. In more traditional terms, we may conclude from this that the former type is opaque for the movements that derive verb clustering, whereas the latter type is transparent for such movements. For convenience, we have again italicized the infinitival clauses and underlined the verbs in our examples in (544).

(544) a. dat Jan heeft ontkend/*ontkennen *het huis te kopen*. [opaque]
that Jan has denied/deny the house to buy
'that Jan has denied buying the house.'
b. dat Jan eindelijk *het huis* heeft durven/*gedurfd *te kopen*. [transparent]
that Jan at.last the house has dare/dared to buy
'that Jan finally has dared to buy the house.'

If we also include the distinction between control and subject raising constructions discussed in Section 5.2.2.1 and 5.2.2.2, we arrive at the somewhat unexpected classification in Table (545), in which the split pattern and the IPP-effect are taken as diagnostics for transparency. The problem with this classification is that it does not account for the fact established earlier that control *te*-infinitivals always involve obligatory control and are therefore expected to be part of the set of transparent infinitival clauses.

(545) Transparency of infinitival clauses (version 1)

		SPLIT PATTERN	IPP-EFFECT
OPAQUE	*OM* + *TE*-INFINITIVALS	—	—
	CONTROL *TE*-INFINITIVALS (TYPE A)	—	—
TRANSPARENT	CONTROL *TE*-INFINITIVALS (TYPE B)	+	+
	SUBJECT RAISING *TE*-INFINITIVALS	+	+
	BARE INFINITIVALS	+	+

It has long been assumed that the distinction between transparent (= verb clustering) and opaque (= extraposition) infinitival clauses is exhaustive. Subsection IV will show, however, that there seems to exist a third option: many (but not all) obligatory control constructions involve what we will call SEMI-TRANSPARENT *te*-infinitivals. The label "semi-transparent" is chosen in order to express that such infinitivals seem to constitute a hybrid category in that they do not exhibit the IPP-effect but nevertheless do allow splitting; example (546a) illustrates this for the verb *beweren* 'to claim'.

(546) a. dat Jan <$^{\%}$*het huis*> heeft beweerd <*het huis*> *te kopen*. [semi-transparent]
that Jan the house has claimed to buy
'that Jan has claimed to buy the house.'
b. $^{\%}$dat *Jan* werd beweerd *het huis te kopen*.
that Jan was claimed the house to buy
'that Jan was claimed to buy that book.'

Observe that a percentage sign has been added to (546a) to indicate that speakers tend to vary in their judgments on the split version; this observation is important since we will see in Subsection VII that it may provide us with a better understanding of the still unexplained fact noted in Section 5.2.2.2, sub III, that passive subject raising constructions such as (546b) are also considered marked by many speakers.

The discovery of the third type of semi-transparent *te*-infinitivals implies that we are not concerned with two but with three subcategories: opaque, transparent and semi-transparent, respectively. This leads to the revised table in (547), which, however, still does not solve the problem of having to postulate a set of opaque *te*-infinitivals despite the fact that these clearly involve obligatory control.

(547) Transparency of infinitival clauses (version 2)

		SPLIT PATTERN	IPP-EFFECT
OPAQUE	*OM* + *TE*-INFINITIVALS	—	—
	CONTROL *TE*-INFINITIVALS (TYPE A)	—	—
SEMI-TRANSPARENT	CONTROL *TE*-INFINITIVALS (TYPE B)	+	—
TRANSPARENT	CONTROL *TE*-INFINITIVALS (TYPE C)	+	+
	SUBJECT RAISING *TE*-INFINITIVALS	+	+
	BARE INFINITIVALS	+	+

Subsection V continues by investigating the split patterns we find with transparent and semi-transparent *te*-infinitivals—we will show that these differ in a number of respects, from which we conclude that these patterns are *not* of the same type. In fact, the split patterns we see with semi-transparent *te*-infinitivals seem to have more in common with extraposed/opaque *te*-infinitivals. This raises the question as to whether it is really justified to distinguish semi-transparent from opaque *te*-infinitivals. This issue will be the topic of Subsection VI, where we argue that there is no reason to postulate opaque *te*-infinitivals: semi-transparent *te*-infinitivals are arguably derived from the alleged opaque ones by means of *optional* leftward movement of one or more constituents of the *te*-infinitival into a position preceding the verbs in clause-final position; this is indicated by the analyses of the two versions of (546a) in (548). In short, the alleged opaque *te*-infinitivals simply arise when the optional movement does not take place.

(548) a. dat Jan heeft beweerd [$_{\text{TP}}$ PRO het huis te kopen].
b. dat Jan het huis$_{\text{i}}$ heeft beweerd [$_{\text{TP}}$ PRO t_{i} te kopen].

We can draw the provisional conclusion from this that we can maintain that the transparency of infinitival clauses is closely related to the independently motivated categorial distinction between CP, TP and VP. It entails that we should replace Table (547) by the simpler one in (549), which is consistent with our earlier conclusion that *te*-infinitivals are in principle transparent for locally restricted syntactic dependencies; they only differ in that their biclausal structure is still reflected by their ability to be in extraposed position. Subsection VII will provide independent evidence in support of the movement analysis in (548) on the basis of a comparison of the examples in (546a&b).

(549) Transparency of infinitival clauses (final version)

		SPLIT PATTERN	IPP-EFFECT
OPAQUE (CP)	*OM* + *TE*-INFINITIVALS	excluded	—
SEMI-TRANSPARENT (TP)	CONTROL *TE*-INFINITIVALS (TYPE A)	optional	—
TRANSPARENT (TP OR VP)	CONTROL *TE*-INFINITIVALS (TYPE B)	obligatory	+
	SUBJECT RAISING *TE*-INFINITIVALS	obligatory	+
	BARE INFINITIVALS	obligatory	+

The hypothesis in (549) that *te*-infinitivals are never opaque may seem at odds with the fact that some of them resist the split pattern. Subsection VIII addresses this problem and shows that this follows from the independently established fact that (semi-)transparency is not an absolute property of clauses but only arises if a number of additional syntactic conditions are met: for example, they must be internal arguments of the matrix verb and surface as direct objects. This leaves us with one question, which will be briefly addressed in Subsection IX: in what way are control *te*-infinitivals of type A and type B different? The answer to this question will be somewhat sketchy and certainly needs further elaboration by future research.

Subsection X will conclude our discussion by pointing out a more general complication for all research on complement clauses, namely, that verbs do not seem to be very particular in the choice of their clausal complement: some verbs may combine with finite or infinitival clauses, *om* + *te*-infinitival or *te*-infinitivals, transparent or semi-transparent *te*-infinitivals, etc. We will discuss the available options for a small sample of verbs.

II. Islandhood: the categorial status of om + te- *and* te-*infinitivals*

The discussion of *(om +) te*-infinitivals in Sections 5.2.1 and 5.2.2 ultimately led to the four hypotheses in (550), in which the notion of syntactic dependency refers to locally restricted phenomena including °NP-movement (such as subject raising), °binding of anaphors (such as the weak reflexive *zich*), and obligatory control; cf. Section 5.2.2.1, sub IV. Together, these hypotheses express that such dependencies can be established across the boundary of a *te*-infinitival but not across the boundary of an *om* + *te*-infinitival.

(550) a. Hypothesis I: *om* + *te*-infinitivals are CPs.
b. Hypothesis II: *te*-infinitivals are TPs.
c. Hypothesis III: CPs constitute islands for syntactic dependencies.
d. Hypothesis IV: TPs do not constitute islands for syntactic dependencies.

Although the proper formulation of the restrictions on obligatory control are still under debate, we have assumed that they are as given in (551); failure to meet any of the clauses in (551) is sufficient to conclude that we are dealing with non-obligatory control; we refer the reader to Section 5.2.1.3, sub III, for detailed discussion.

(551) Obligatory control requires the antecedent of PRO to:
- a. be overtly realized in the sentence containing PRO;
- b. be local (a co-argument of the infinitival clause containing PRO);
- c. be a °c-commanding nominal argument (subject or object);
- d. be unique (cannot be “split”).

Infinitival clauses in subject raising constructions do not have implied PRO-subjects but involve movement of their subject into the subject position of the matrix clause, where it is realized as a nominative noun phrase. The choice between obligatory control and subject raising seems to depend on the thematic properties of the matrix verb. Transitive verbs like *beweren* ‘to claim’ in (552a) are only compatible with a control analysis, as subject raising is excluded because the regular subject position of the matrix verb is already occupied by the external argument of this verb. Unaccusative verbs like *blijken* ‘to turn out’, on the other hand, allow subject raising because the landing site of subject raising is free; PRO is excluded given that there is no suitable controller available for it and the resulting construction would thus violate restriction (551a) on obligatory control.

(552) a. Jan$_i$ beweerde [$_{TP}$ PRO$_i$ dat boek te lezen]. [obligatory control]
Jan claimed that book to read
‘Jan claimed to be reading that book.’
b. Jan$_i$ bleek [$_{TP}$ t_i dat boek te lezen]. [subject raising]
Jan turned.out that book to read
‘Jan turned out to be reading that book.’

The hypotheses in (550) correctly predict that obligatory control and subject raising constructions cannot be *om* + *te*-infinitivals, as is clear from as is clear from the impossibility of adding the complementizer *om* to the examples in (552). Conversely, they predict that *om* + *te*-infinitivals cannot be used in obligatory control or subject raising constructions. That *om* + *te*-infinitivals do not involve obligatory control is clear from the acceptability contrast between the impersonal passive constructions in (553): example (553a) is allowed because the PRO-subject of the *om* + *te*-infinitival is not obligatorily controlled and, consequently, restriction (551a) is irrelevant; example (553b), on the other hand, is excluded because the PRO-subject of *te*-infinitival is obligatorily controlled but cannot find an overt antecedent, which results in a violation of (551a). That the contrast is indeed due to control is supported by the fact that obligatory subject control verbs like *beweren* can normally be passivized in non-control contexts: cf. *Dat werd vaak beweerd* ‘That was often claimed’.

(553) a. Er werd geprobeerd [$_{CP}$ (om) PRO$_{arb}$ dat boek te lezen].
there was tried COMP that book to read
‘It was tried to read that book.’
b. *Er werd beweerd [$_{TP}$ PRO$_{arb}$ dat boek te lezen].
there was claimed that book to read

That *om* + *te*- and *te*-infinitivals differ in that only the latter can be used in subject raising constructions is illustrated in (554); example (554a) is excluded because the CP-boundary turns the infinitival clause into an island for movement, and thus blocks subject raising of the noun phrase *Jan*; example (554b), on the other hand, is acceptable because the TP-boundary is not an island for movement and therefore allows subject raising.

(554) a. *Jan$_i$ werd geprobeerd [$_{CP}$ (om) t_i dat boek te lezen].
Jan was tried COMP that book to read
b. $^{\%}$Jan$_i$ werd beweerd [$_{TP}$ t_i dat boek te lezen].
Jan was claimed that book to read
'Jan was claimed to read that book.'

Observe that the four hypotheses in (550) do not yet explain why speakers give varying judgments on an example such as (554b); a possible explanation of this will be given in Subsection VII.

III. Transparent versus opaque te-*infinitivals*

The discussion of *(om +) te*-infinitivals in Sections 5.2.2.1 was simplified in that it abstracted away from a number of issues. For example, the discussion of control constructions was strictly confined to cases with infinitival clauses *in extraposed position*, that is, examples in which the full infinitival clause follows the matrix verb in clause-final position. Such constructions are characterized by the fact that they do not allow the °*infinitivus-pro-participio* (IPP) effect in the perfect tense—the matrix verb must be realized as a past participle. This is shown in (555a) for a non-obligatory control construction in which the verb *proberen* 'to try' selects an *om* + *te*-infinitival, and in (555b) for an obligatory control construction in which the verb *beweren* 'to claim' selects a *te*-infinitival; we italicize the infinitival clause and do not indicate the implied PRO-subject for ease of representation.

(555) a. Jan heeft geprobeerd/*proberen (*om*) *dat boek te kopen*. [extrap. + no IPP]
Jan has tried/try COMP that book to buy
'Jan has tried to buy that book.'
b. Jan heeft beweerd/*beweren *dat boek te kopen*. [extraposition + no IPP]
Jan has claimed/claim that book to buy
'Jan has claimed to buy that book.'

Section 5.2.2.2 has shown that subject raising constructions normally do not allow extraposition, but require that the infinitival clause be split by the matrix verb in clause-final position—they exhibit verb clustering. Furthermore, subject raising constructions normally exhibit the IPP-effect for those speakers that allow subject raising constructions in the perfect tense (which not all speakers do).

(556) a. dat *Jan dat boek* lijkt *te kopen*. [clause splitting]
that Jan that book appears to buy
'that Jan appears to buy that book.'
b. dat Jan dat boek heeft $^{\%}$lijken/*geleken te kopen. [IPP]
that Jan that book has appear/appeared to buy
'that Jan has appeared to buy that book.'

Observe that the qualification "normally" in the two sentences preceding (556) is needed because Section 5.2.2.2 has shown that the formal register does allow subject raising constructions with *te*-infinitivals in extraposed position; such constructions do not exhibit the IPP-effect either. We will return to this issue in Subsection VII.

The differences between examples like (555b) and (556) show that from a syntactic point of view it is not sufficient to distinguish between *(om +) te-* and *te*-infinitivals, but that the latter can be divided into at least the two subtypes in (557).

(557) • Types of *te*-infinitivals
a. Opaque: no clause splitting and no IPP
b. Transparent: clause splitting and IPP

This may seem a nice result given that (557) enables us to describe the data discussed so far by means of the two independently motivated binary parameters in Table (558): the distinction between CP and TP can be motivated by the distribution of the complementizer *om*, and the distinction between transparent and opaque infinitivals by the behavior of *te*-infinitivals with respect to clause splitting and IPP. The empty cell may follow from the general claim from the earlier theoretical literature that CP-boundaries block the movements required for deriving the split pattern.

(558) Subdivision of *(om +) te*-infinitival clauses (to be rejected):

	TRANSPARENT	OPAQUE
CP (*OM* + *TE*-INFINITIVAL)	—	non-obligatory control
TP (*TE*-INFINITIVAL)	subject raising	obligatory control

Unfortunately, however, the hypothesis in Table (558) that obligatory control holds in opaque *te*-infinitivals only is evidently incorrect. Consider the examples in (559) with the verb *durven* 'to dare'. The (a)-example shows that *durven* requires clause splitting; the object of the *te*-infinitival *te vertellen* must precede the finite verb *durft* 'dares' in clause-final position. The (b)-example shows that *durven* also triggers the IPP-effect; Evers (1975) and Den Besten & Edmondson (1983) both claim that perfect-tense constructions do not allow the past participle *gedurfd*, and a Google search (2/6/2013) on the string [*heeft gedurfd te*] indeed resulted in relatively few examples. The (c)-example is added to show that we are indeed dealing with a control structure: pronominalization of the *te*-infinitival does not affect the nominative subject of the construction as a whole, which therefore cannot originate as part of the infinitival clause but must originate as a separate argument of the matrix verb *durven.* Consequently, the external argument of the verb *vertellen* 'to tell' must be realized as PRO.

(559) a. dat Jan <de waarheid> niet durft <$^{*?}$de waarheid> te vertellen.
that Jan the truth not dares to tell
'that Jan doesn't dare to tell the truth.'
b. dat Jan de waarheid niet heeft durven/*gedurfd te vertellen.
that Jan the truth not has dare/dared to tell
'that Jan hasn't dared to tell the truth.'
c. Jan durft dat niet. / *Dat durft niet.
Jan dares that not that dares not

The examples in (559) thus show that the situation depicted in Table (558) is incorrect in that there are also transparent *te*-infinitivals involving obligatory control. We therefore get the more complex situation depicted in Table (545), repeated here as (560), in which the split pattern and the IPP-effect are taken as diagnostics for transparency. The problem with this classification is that it does not account for the earlier established fact that control *te*-infinitivals always involve obligatory control, and are therefore expected to be part of the set of transparent infinitival clauses.

(560) Transparency of infinitival clauses (version 1)

		SPLIT PATTERN	IPP-EFFECT
OPAQUE	*OM* + *TE*-INFINITIVALS	—	—
	CONTROL *TE*-INFINITIVALS (TYPE A)	—	—
TRANSPARENT	CONTROL *TE*-INFINITIVALS (TYPE B)	+	+
	SUBJECT RAISING *TE*-INFINITIVALS	+	+
	BARE INFINITIVALS	+	+

The following subsections will try to solve this paradox, but before we get to this, it is important to stress that the conclusion that *te*-infinitivals in extraposed position involve obligatory control *is* in full agreement with the four hypotheses in (550). The fact that control constructions with verbs like *durven* in (559) involve clause splitting and IPP shows that they are TPs, which, in turn, predicts that we are dealing with obligatory control constructions. That this prediction is correct seems supported by the fact that (559a) does not have a passive counterpart; a Google search (2/7/2013) on the (passive strings) [<*gedurfd*> *werd* <*gedurfd*> *te*] resulted in just a handful of potential cases with intransitive infinitives. In fact, there is reason to dismiss these as irrelevant given that the search strings [<*gedurfd*> *werd* <*gedurfd*> * *te*] resulted in a small number of cases with an extraposed infinitival clause preceded by the complementizer *om*; this makes it plausible that the passive cases with intransitive infinitives involve *om* + *te*-infinitivals with a phonetically empty complementizer. We therefore provisionally conclude that, as predicted, control constructions of the type in (559a) cannot be passivized.

IV. Semi-transparent te-*infinitivals: a mixed type*

Subsection III has shown that obligatory control *te*-infinitivals are traditionally divided into two categories: opaque and transparent infinitivals. Opaque infinitival clauses are in extraposed position, that is, follow the verbs in clause-final position, whereas transparent infinitival clauses participate in verb clustering, that is, they are split by the verbs in clause-final position. This is illustrated again by the primeless examples in (561), in which we have italicized the infinitival clause and underlined the relevant verbs; the primed examples illustrate the concomitant (lack of) IPP in the corresponding perfect-tense constructions.

(561) a. dat Jan ontkent *dat boek* te lezen. [no clause splitting]
that Jan denies that book to read
‘that Jan denies reading that book.’
a′. dat Jan heeft ontkend/*ontkennen dat boek te lezen. [no IPP]
that Jan has denied/deny that book to read
‘that Jan has denied reading that book.’
b. dat Jan *dat boek* niet durft *te lezen*. [clause splitting]
that Jan that book not dares to read
‘that Jan doesn’t dare to read that book.’
b′. dat Jan dat boek niet heeft durven/*gedurfd te lezen. [IPP]
that Jan that book not has dare/dared to read
‘that Jan hasn’t dared to read that book.’

It has long been assumed that the choice between extraposition and verb clustering is absolute, albeit that a large set of verbs seems to allow both options; see Bech (1955), Evers (1975), and much subsequent work. The primeless examples in (562) show that *beweren* ‘to claim’ is such a verb: it seems compatible both with extraposition and verb clustering. Later research has shown, however, that (561b) and (562b) cannot be treated on a par, given that the corresponding primed examples show that *durven* exhibits the IPP-effect in the perfect tense, whereas *beweren* does not; see Den Besten et al. (1988), Den Besten & Rutten (1989), Rutten (1991), Broekhuis et al. (1995), and references given there—for convenience, we will from now on refer to this collection of works as the Den Besten research group, as much of it was either initiated or supervised by Hans den Besten.

(562) a. dat Jan beweert *dat boek* *te lezen*. [no clause splitting]
that Jan claims that book to read
‘that Jan claims to read that book.’
a′. dat Jan heeft beweerd/*beweren dat boek te lezen. [no IPP]
that Jan has claimed/claim that book to read
‘that Jan has claimed to have read that book.’
b. dat Jan *dat boek* beweert *te lezen*. [clause splitting]
that Jan that book claims to read
‘that Jan claims to read that book.’
b′. dat Jan dat boek heeft beweerd/*beweren te lezen. [no IPP]
that Jan that book has claimed/claim to read
‘that Jan has claimed to have read that book.’

This array of facts led to the conclusion that besides the transparent and opaque *te*-infinitivals a third type of semi-transparent *te*-infinitivals must be recognized. The postulation of a more hybrid set of *te*-infinitivals requires that the classification of infinitival clauses given in (560) should be revised as in (563). However, it still does not solve the problem that we have to postulate a set of opaque *te*-infinitivals despite the fact that these clearly involve obligatory control.

(563) Transparency of infinitival clauses (version 2)

		SPLIT PATTERN	IPP-EFFECT
OPAQUE	*OM* + *TE*-INFINITIVALS	—	—
	CONTROL *TE*-INFINITIVALS (TYPE A)	—	—
SEMI-TRANSPARENT	CONTROL *TE*-INFINITIVALS (TYPE B)	+	—
TRANSPARENT	CONTROL *TE*-INFINITIVALS (TYPE C)	+	+
	SUBJECT RAISING *TE*-INFINITIVALS	+	+
	BARE INFINITIVALS	+	+

V. Clause splitting of (semi-)transparent te-*infinitivals*

Subsection IV has shown that according to the traditionally assumed diagnostics of clause splitting and IPP, there are three types of *te*-infinitivals: opaque, semi-transparent and transparent. It should be pointed out, however, that it not the case that verbs always select one specific type of *te*-infinitival. The examples in (564), for instance, suggest that the verb *proberen* ‘to try’ is compatible with all three types.

(564) a. dat Jan *dat boek* heeft proberen *te lezen*. [transparent]
that Jan that book has try to read
‘that Jan has tried to read that book.’
b. dat Jan *dat boek* heeft geprobeerd *te lezen*. [semi-transparent]
that Jan that book has tried to read
c. dat Jan heeft geprobeerd *dat boek* *te lezen*. [opaque]
that Jan has tried that book to read

At this point we want to make two brief remarks. The first is that it has not been established in the literature so far that the three variants differ in meaning or information-structural properties (but see Subsection IX); the translation given in (564a) seems adequate for all cases. The second is that the preceding subsections analyzed (564c) as an *om* + *te*-infinitival given that it seems to allow the addition of the complementizer *om*; whether this is indeed an option is not directly relevant for the discussion in this subsection, but we return to this issue in Subsection VII.

At first sight, the examples in (564a&b) seem similar in that clause splitting leads to verb clustering. This similarity may just be apparent, however, given that the infinitival clauses are small in size; they contain just one phonetically realized constituent apart from the *te*-infinitive, the direct object *het boek* ‘the book’, and clause splitting therefore inevitably leads to “clustering”, that is, adjacency of the verbs. In order to see whether clause splitting leads to verb clustering in the technical sense of an IMPERMEABLE SERIES OF VERBS, we should consider *te*-infinitivals that are larger in size; (565) shows the result of this for infinitival clauses headed by the ditransitive verb *geven*. The two (a)-examples show that in the case of transparent *te*-infinitivals, splitting of the *te*-infinitival inexorably leads to verb clustering: placing the direct object *een kus* ‘a kiss’ in between the verbs is impossible. The two (b)-examples, which may both be considered slightly marked by some Dutch speakers, show that in the case of semi-transparent *te*-infinitivals the verbs may group together, but that it is also possible to interrupt the sequence of verbs by placing the direct object left-adjacent to the *te*-infinitive. The acceptability contrast between the two primed examples thus suggests that transparent and semi-transparent *te*-infinitivals differ in that only the former involve verb clustering in the technical sense given above.

(565) a. dat Jan *het meisje een kus* heeft proberen *te geven*.
that Jan the girl a kiss has try to give
‘that Jan has tried to kiss the girl.’
a′. *dat Jan *het meisje* heeft proberen *een kus te geven*.
b. dat Jan *het meisje een kus* geprobeerd heeft *te geven*.
that Jan the girl a kiss tried has to give
‘that Jan has tried to kiss the girl.’
b′. dat Jan *het meisje* geprobeerd heeft *een kus te geven*.

The same is demonstrated by the examples in (566), in which the *te*-infinitivals contain the phrasal expression *in ontvangst nemen* ‘to take delivery’, in which the PP *in ontvangst* probably functions as a °complementive. The (a)-examples show that this PP must precede the matrix verb *proberen* in the case of transparent *te*-infinitivals, while the (b)-examples show that it can be interposed between the verbs in the case of semi-transparent *te*-infinitivals; the marked status of (566b) in fact shows that placement of the complementive PP in front of the verbs in clause-final position is actually dispreferred in the latter case.

(566) a. dat Jan *dat boek in ontvangst* heeft proberen *te nemen*.
that Jan that book in acceptance has try to take
‘that Jan has tried to take delivery of the book.’
a′. *dat Jan *dat boek* heeft proberen *in ontvangst te nemen*.
b. ?dat Jan *dat boek in ontvangst* geprobeerd heeft *te nemen*.
that Jan that book in acceptance tried has to take
‘that Jan has tried to take delivery of the book.’
b′. dat Jan *dat boek* geprobeerd heeft *in ontvangst te nemen*.

The contrast between the primed examples in (565) and (566) shows that clause splitting of transparent and semi-transparent *te*-infinitivals cannot be considered the result of the same operation. Given that clause splitting of transparent *te*-infinitivals invariably leads to verb clusters in the technical sense, the Den Besten research group concluded that in this case clause splitting is the result of a head movement operation traditionally called verb raising. Since clause splitting of semi-transparent *te*-infinitivals does not necessarily lead to verb clustering, the group concluded that we are dealing with some sort of extraposition.

VI. Semi-transparent and opaque te-*infinitivals are similar*

The Den Besten research group argued that semi-transparent *te*-infinitivals are just like the opaque ones in that they are in extraposed position, that is, in the position following the clause-final verbs. Semi-infinitival constructions are special, however, in that at least one of the constituents of the *te*-infinitival is extracted from it and moved into a position preceding the clause-final verbs. The structures in (567) show that on this analysis the only difference between the semi-transparent and opaque *te*-infinitivals in (564b&c) is whether or not the object *dat boek* ‘that book’ has been extracted from the extraposed clause and placed into a position preceding the matrix verb *geprobeerd*.

(567) a. dat Jan dat boek$_i$ heeft geprobeerd [PRO t_i te lezen]. [semi-transparent]
that Jan that book has tried to read
b. dat Jan heeft geprobeerd [PRO dat boek te lezen]. [opaque]
that Jan has tried that book to read

It is crucial to note that extraction of the direct object is not obligatory in the case of semi-transparent *te*-infinitivals, as is clear from the fact illustrated in (565) that verb clustering is not obligatory if the *te*-infinitive is ditransitive; the analyses of the relevant examples are given in (568a&b). This suggests that the “opaque” *te*-infinitival in (568c) is essentially the same as the semi-transparent ones, apart from the fact that both objects remain inside the *te*-infinitival.

(568) a. dat Jan het meisje$_i$ een kus$_j$ geprobeerd heeft [PRO t_i t_j te geven].
that Jan the girl a kiss tried has to give
b. dat Jan het meisje$_i$ geprobeerd heeft [PRO t_i een kus te geven].
that Jan the girl tried has a kiss to give
c. dat Jan geprobeerd heeft [PRO het meisje een kus te geven].
that Jan tried has the girl a kiss to give

The same holds for other cases in which the *te*-infinitival contains a larger number of constituents, as in (566), the analyses of which are given in (569a&b). This suggests again that the “opaque” *te*-infinitival in (568c) is essentially the same as the semi-transparent ones, apart from the fact the direct object also remains within the *te*-infinitival.

(569) a. ?dat Jan dat boek$_i$ in ontvangst$_j$ heeft geprobeerd [PRO t_i t_j te nemen].
that Jan that book in acceptance has tried to take
b. dat Jan dat boek$_i$ heeft geprobeerd [PRO t_i in ontvangst te nemen].
that Jan that book has tried in acceptance to take
c. dat Jan heeft geprobeerd [PRO het boek in ontvangst te nemen].
that Jan has tried the book in acceptance to take

The Den Besten research group suggests that the fact that (569a) is often evaluated as marked compared to (569b&c) can be used to support the movement analysis, given that movement of complementives like *in ontvangst* is normally only possible if it targets the sentence-initial position, that is, if it undergoes *wh*-movement or topicalization; see the discussion of (574) for an alternative suggestion.

The analysis of the Den Besten research group therefore suggests that the distinction between opaque and semi-transparent *te*-infinitivals can be dismissed in favor of the claim that the alleged opacity of *te*-infinitivals in extraposed position simply follows from the optionality of the movement that derives the split pattern. This is actually expected on the basis of the hypotheses I-IV, repeated here as (570), as these explicitly state that there are no opaque *te*-infinitivals; only *om* + *te*-infinitivals are of that type.

(570) a. Hypothesis I: *om* + *te*-infinitivals are CPs.
b. Hypothesis II: *te*-infinitivals are TPs.
c. Hypothesis III: CPs constitute islands for syntactic dependencies.
d. Hypothesis IV: TPs do not constitute islands for syntactic dependencies.

Later, we will look at some potential counterexamples to the claim that there are no opaque *te*-infinitivals in Subsection VIII, but for the moment we simply adopt it as an idealization. This makes it possible to replace Table (563) by the simpler one in (571), in which we have also indicated whether the split pattern arises as a result of leftward movement of one or more constituents of the *te*-infinitival or as a result of whatever operation is responsible for verb clustering.

(571) Transparency of infinitival clauses (final version)

		SPLIT PATTERN	IPP-EFFECT
OPAQUE (CP)	*OM* + *TE*-INFINITIVALS	—	—
SEMI-TRANSPARENT (TP)	CONTROL *TE*-INFINITIVALS (TYPE A)	leftward mvt	—
TRANSPARENT (TP OR VP)	CONTROL *TE*-INFINITIVALS (TYPE B)	verb cluster	+
	SUBJECT RAISING *TE*-INFINITIVALS	verb cluster	+
	BARE INFINITIVALS	verb cluster	+

The analysis of the Den Besten research group discussed above crucially claims that *te*-infinitivals are transparent for movement. Since this movement is not possible from *om* + *te*-infinitivals, it seems reasonable to conclude that the movement involved is of a locally restricted type (although the discussion below will show that it differs from A-movement of the sort we find in passive and subject raising constructions in that it can also affect non-nominal phrases). This means that we can now also account for the fact that *te*- and *om* +*te*-infinitivals differ in their control properties; the former allow but the latter block the locally restricted °syntactic dependency of obligatory control.

The term semi-transparent *te*-infinitival can clearly be justified by pointing out that such infinitival clauses are transparent for certain locally restricted dependencies, like obligatory control and the movements that derive the split pattern, but not for others, such as the movements that derive verb clustering in the technical sense given earlier. It should be noted, however, that the Den Besten research group also noted that extraction from *te*-infinitivals in extraposed position is often considered marked by some speakers and that the acceptability judgments on the resulting surface forms depend on various factors. Many speakers consider present perfect-tense examples such as (572b) marked compared to simple present examples such as (572a), which we indicated by the percentage sign—note in passing that the placement of the participle before or after the finite verb in clause-final position does not seem to affect the acceptability of (572b). Example (572c) is added to show that this acceptability contrast cannot be explained by assuming that *besluiten* ‘to decide’ selects a transparent *te*-infinitival as its complement, given that this would wrongly predict that substituting an infinitive for the participle in (572b) gives rise to a fully acceptable result.

(572) a. dat Jan dat huis besluit te kopen.
that Jan that house decides to buy
‘that Jan decides to buy that house.’
b. %dat Jan dat huis <besloten> heeft <besloten> te kopen.
that Jan that house decided has to buy
‘that Jan has decided to buy that house.’
c. *dat Jan dat huis heeft besluiten te kopen.
that Jan that house has decide to buy

The relative markedness of (572b) shows that the term semi-transparent *te*-infinitival is also quite apt because boundaries of such clauses seem less easy to cross than those of transparent *te*-infinitivals. More evidence in favor of this conclusion is provided by the fact that the acceptability judgments also depend on the nature of the element that is moved. Examples (573a&b) show again that it is easily possible for most speakers to extract nominal objects from *te*-infinitivals in extraposed position; while the primeless (b)-example illustrates that extraction of the indirect object is independent of extraction of the direct object, the primed (b)-examples show that (as usual) the direct object cannot be moved across the indirect object. Example (573c) shows that extraction of PP-complements is also possible. The examples in (573) are, of course, also acceptable if the objects occur after the verb *besloot* ‘decided’, which we have indicated by means of angled brackets.

(573) a. dat Jan <dat huis> besloot <dat huis> te kopen. [direct object]
that Jan that house decided to buy
‘that Jan decided to buy that house.’
b. dat Jan <Marie> besloot <Marie> dat boek te geven. [indirect object]
that Jan Marie decided that book to give
‘that Jan decided to give Marie that book.’
b′. dat Jan Marie <dat boek> besloot <dat boek> te geven.
that Jan Marie that book decided to give
‘that Jan decided to give Marie that book.’
b″. dat Jan <*dat boek> besloot Marie <dat boek> te geven.
that Jan that book decided Marie to give
‘that Jan decided to give Marie that book.’
c. dat Jan <op vader> besloot <op vader> te wachten. [prepositional object]
that Jan for father decided to wait
‘that Jan decided to wait for father.’

Examples like (574a&b) with an extracted complementive or a particle, on the other hand, are often considered marked, and examples such as (574c) with an adverbial phrase even seem to be excluded for many speakers. The primed examples show that the markedness of the split patterns is even more conspicuous in the corresponding perfect-tense examples. All cases become acceptable by placing the complementive, particle or adverbial phrase to the immediate left of the *te*-infinitive.

(574) a. $^{?}$dat Jan het hek donkerblauw besloot te schilderen. [complementive]
that Jan the gate dark.blue decided to paint
‘that Jan decided to paint the gate dark blue.’
a′. $^{??}$dat Jan het hek donkerblauw besloten heeft te schilderen.
that Jan the gate dark.blue decided has to paint
b. $^{?}$dat Jan Marie op besloot te bellen. [particle]
that Jan Marie up decided to call
‘that Jan decided to call Marie up.’
b′ $^{??}$dat Jan Marie op besloten heeft te bellen.
that Jan Marie up decided has to call
‘that Jan has decided to call Marie up.’
c. $^{??}$dat Jan dat boek nauwkeurig besloot te lezen. [adverbial phrase]
that Jan that book meticulously decided to read
‘that Jan decided to read that book meticulously.’
c′. $^{*?}$dat Jan dat boek nauwkeurig besloten heeft te lezen.
that Jan that book meticulously decided has to read
‘that Jan decided to read that book meticulously.’

The contrast between complements and non-complements in the examples in (573) and (574) is familiar from other “island” contexts, and again justifies the conclusion that *te*-infinitivals in extraposed position are not fully transparent for movement. However, given that *om* + *te*-infinitivals block the proposed movements entirely, we conclude that *te*-infinitivals are not completely opaque either. Consequently, the term semi-transparency seems the most suitable one for describing the factual situation.

VII. Support for the movement analysis: subject raising

Subsection VI has shown that extraction from semi-transparent (that is, extraposed) *te*-infinitivals often leads to a slightly marked result. This subsection shows that this not only holds for control constructions, which have been the focus of our attention so far, but also for subject raising constructions. Section 5.2.2.2, sub II, has shown that subject raising constructions are normally transparent in the sense that they involve verb clustering and IPP (for those speakers that allow subject raising in perfect-tense constructions). This is illustrated again in (575).

(575) a. dat Jan *de boeken naar Utrecht* schijnt *te sturen*.
that Jan the books to Utrecht seems to send
‘that Jan seems to send the books to Utrecht.’
b. dat Jan de boeken naar Utrecht heeft $^{\%}$schijnen/*geschenen te sturen.
that Jan the books to Utrecht has seem/seemed to send
‘that Jan has seemed to send the books to Utrecht.’

In the formal register, however, subject raising constructions often do not have the format of the normally used construction in that extraposition of *te*-infinitivals is quite common. We illustrate this in (576a) by means of the verb *blijken*, which seems to occur relatively frequently with extraposed infinitival copular clauses; (576b) shows that such subject raising constructions do not exhibit the IPP-effect. Of course, the fact that these constructions do not occur in informal speech may be a reason to simply put them aside, but it is nevertheless useful to note that they are not unexpected given the claim that semi-transparent *te*-infinitivals are transparent for movement.

(576) a. dat deze conclusie$_i$ blijkt [$_{TP}$ t_i juist te zijn].
that this conclusion turns.out correct to be
‘that this conclusion turns out to be correct.’
b. dat deze conclusie$_i$ is gebleken [$_{TP}$ t_i juist te zijn].
that this conclusion is turned.out correct to be
‘that this conclusion has turned out to be correct.’

The claim that *te*-infinitivals in extraposed position are transparent for subject raising also accounts for the existence of the passive subject raising construction discussed in Section 5.2.2.2, sub III; we repeat the core data in (577). Example (577b) first shows that the PRO-subject of the infinitival complement of *beweren* must satisfy restriction (551a) on obligatory control; impersonal passivization is excluded given that PRO must have an overtly realized controller. Example (577c) shows, however, that passivization is possible if the subject of the infinitival clause is raised to the subject position of the °matrix clause where it is assigned nominative case. The important thing to note is that the markedness of the resulting structure fits in nicely with the observation from Subsection VI that extraction from extraposed *te*-infinitivals widely leads to a marked result—judgments on examples such as (577c) seem to come close to those on the perfect-tense constructions in (572b).

(577) a. dat Jan$_i$ beweert [$_{TP}$ PRO$_i$ dat boek te lezen].
that Jan claims that book to read
‘that Jan claims to be reading that book.’
b. *dat er wordt beweerd [$_{TP}$ PRO$_?$ dat boek te lezen].
that there is claimed that book to read
c. $^{\%}$Jan$_i$ wordt beweerd [$_{TP}$ t_i dat boek te lezen].
Jan is claimed that book to read
‘Jan is claimed to be reading that book.’

The analysis suggested for the subject raising constructions above seems in line with the analysis suggested by the Den Besten research group for semi-transparent control constructions discussed in the previous subsections. Unfortunately, however, there is a complication which needs to be dealt with. Consider the set of examples in (578); the question marks indicate that it is not a priori clear whether we are dealing with a CP or a TP.

(578) a. dat Jan$_i$ probeert [$_?$ PRO$_i$ dat boek te lezen].
that Jan tries that book to read
‘that Jan is trying to read that book.’
b. dat er wordt geprobeerd [$_?$ PRO$_?$ dat boek te lezen].
that there is tried that book to read
‘that it is tried to read that book.’
c. *Jan$_i$ wordt geprobeerd [$_?$ t_i dat boek te lezen].
Jan is tried that book to read

In our earlier discussion, we accounted for the paradigm by claiming that the complement of *proberen* is an *om* + *te*-infinitival with an empty complementizer. If so, impersonal passivization of the matrix clause, as in (578b), is predicted to be possible given that PRO is not obligatorily controlled and can therefore be controlled by the implicit agent of the matrix verb. The subject raising construction in (578c), on the other hand, is predicted to be impossible given that *om* + *te*-infinitivals block extraction.

(579) a. dat er wordt geprobeerd [$_{CP}$ Ø [$_{TP}$ PRO$_{arb}$ dat boek te lezen]].
that there is tried COMP that book to read
'that it is tried to read that book.'
b. *Jan$_{i}$ wordt geprobeerd [$_{CP}$ Ø [$_{TP}$ t_{i} dat boek te lezen]].
Jan is tried COMP that book to read

We have seen, however, that *proberen* may also occur with a semi-transparent *te*-infinitival. This predicts that PRO is obligatorily controlled, as a result of which impersonal passivization is excluded because PRO cannot be controlled by the implicit agent of the matrix verb. Subject raising, on the other hand, is wrongly predicted to be possible given that *te*-infinitivals do allow extraction.

(580) a. *dat er wordt geprobeerd [$_{TP}$ PRO$_{arb}$ dat boek te lezen].
that there is tried that book to read
b. $^{\$}Jan_{i}$ wordt geprobeerd [$_{TP}$ t_{i} dat boek te lezen].
Jan is tried that book to read
'Jan is tried to read that book.'

Of course, it may be the case that *proberen* can select either a CP or a TP, which would predict that both (579a) and (580b) are grammatical. This raises the question why only the former is acceptable. It is clear that this cannot be due to syntax proper as the two structures can be generated without any problem; for this reason we did not mark the unacceptability of (580b) by an asterisk, but by a dollar sign. Consequently, we have to assume that we are dealing with some kind of syntactic °blocking; speakers simply do not opt for a marked structure when an unmarked structure is available. We leave the question as to whether this line of reasoning is tenable to future research. If not, it is clear that the pattern in (578), which is typical for verbs that can select either an *om* + *te*- or a *te*-infinitival, constitutes a problem for the attempt to extend the line of inquiry initiated by the Den Besten research group to the patterns discussed in this subsection.

VIII.Additional restrictions on transparency of argument clauses

The previous subsections only discussed direct object clauses, and this is not without reason given that the syntactic function of *te*-infinitivals seems to have an effect on their transparency for movement. Evers (1975:39ff) and Den Besten et al. (1988), for example, have noted that *te*-infinitivals functioning as subject, nominal part of a PP-complement, or °logical SUBJECT of a particle (that is, a complementive) resist clause splitting categorically; cf. the primeless examples in (581). The corresponding perfect-tense constructions in the primed examples furthermore show that constructions with such argument clauses do not exhibit the IPP-effect.

(581) a. dat het hem <**het boek*> berouwt <*het boek*> *gekocht te hebben*. [subject]
that it him the book regrets bought to have
‘that he regrets it that he has bought the book.’
a′. Het heeft hem berouwd/*berouwen *het boek gekocht te hebben*.
it has him regretted/regret the book bought to have
‘He has regretted it that he has bought the book.’
b. dat Jan ertoe <**het boek*> neigt <*het boek*> *te kopen*. [prepositional object]
that Jan to.it the book inclines to buy
‘that Jan is inclined to buy the book.’
b′. Jan is ertoe geneigd/*neigen *het boek te kopen*.
Jan is to.it inclined/incline the book to buy
‘Jan has been inclined to buy the book.’
c. dat Peter Marie <$^{??}$*dat boek*> opdraagt <*dat boek*> *te kopen*. [SUBJECT]
that Peter Marie that book prt.-ordered to buy
‘that Peter orders Marie to buy that book.’
c′. Peter heeft Marie opgedragen/*opdragen *dat boek te kopen*.
Peter has Marie prt.-ordered/prt.-order that book to buy
‘Peter has ordered Marie to buy that book.’

It seems ill-advised, however, to take the examples in (581) as counterexamples to our classification in Table (571). In order to show this, we will compare the examples in (581) with similar examples involving *wh*-movement, but first observe that *wh*-extraction is possible from the direct object clauses in (582).

(582) a. Welk boek$_i$ dacht Peter [$_{CP}$ dat Marie t_i wou kopen]?
which book thought Peter that Marie wanted buy
‘Which book did Peter think that Mary wanted to buy?’
b. Welk boek$_i$ beloofde Peter [$_{CP}$ dat hij t_i zou kopen]?
which book promised Peter that he would buy
‘Which book did Peter promise that he would buy?’

This shows that finite direct object clauses are transparent for *wh*-movement (despite being opaque for other types of movement); see Section 11.3.1. The examples in (583) indicate, however, that not all finite argument clauses allow this type of extraction. Observe that we used the same type of verbs as in (581) in order to keep the examples parallel, to the extent that this is possible.

(583) a. Het spijt hem [$_{CP}$ dat hij het boek gekocht heeft]. [subject]
it regrets him that he the book bought has
‘He regrets it that he has bought the book.’
a′. *Welk boek$_i$ spijt het hem [$_{CP}$ dat hij t_i gekocht heeft]?
which book regrets it him that he bought has
b. Jan verlangt ernaar [$_{CP}$ dat hij het boek kan kopen]. [prep. object]
Jan longs for.it that he the book is.able buy
‘Jan longs to be able to buy the book.’
b′. *Welk boek$_i$ verlangt Jan ernaar [$_{CP}$ dat hij t_i kan kopen]?
which book longs Jan for.it that he is.able buy

c. Jan heeft toegezegd [$_{CP}$ dat hij het boek voor Marie koopt]. [SUBJECT]
Jan has prt.-promised that he the book for Marie buys
‘Jan has promised to buy the book for Marie.’

c′. $^{??}$Welk boek$_i$ heeft Jan toegezegd [$_{CP}$ dat hij t_i voor Marie koopt]?
which book has Jan prt.-promised that he for Marie buys

The fact that we find the same effects in (581) and (583) for different types of movement suggests that “transparency of a phrase of type P for movement type M” is not an absolute property of P; there may be other factors involved. From this it follows, for example, that being a *te*-infinitival is a *necessary* but not a *sufficient* property for exhibiting clause splitting. The opacity of the clause types in (581) and (583) is a well-known fact from the formal linguistic literature, and it is often assumed that transparency of some phrase P requires that the additional conditions in (584a&b) be satisfied.

(584) Transparency of a phrase P requires:
a. that P is an internal argument of the matrix verb and;
b. that P is realized as a direct object.

Let us now consider how (584) accounts for the opacity of the embedded clauses in (581) and (583). The (a)-examples, in which the clauses function as the subject of a NOM-DAT verb, perhaps satisfy clause (584a) but they clearly violate clause (584b). Observe that we used the modifier *perhaps* in the previous sentence because the examples contain the °anticipatory pronoun *het* ‘it’, which may function as the true syntactic argument of the verb, the extraposed “subject” clause merely being a right-dislocated °adjunct that provides further information as a kind of afterthought. That this may be the correct way of looking at these examples is suggested by the fact that direct object clauses also become opaque if they are introduced by an anticipatory pronoun. The examples in (585) illustrate this for clause splitting and *wh*-movement from a clausal complement of the verb *beweren* ‘to claim’. Although the use of the anticipatory pronoun *het* is marked in the sense that it is restricted to specific (e.g., factive) contexts, it is clear that insertion of the pronoun has a dramatically negative effect on the acceptability of clause splitting and *wh*-extraction. Note that alternative placements of the anticipatory pronoun (e.g., in a position following the moved phrase *dat boek*) does not improve clause splitting in (585a).

(585) a. dat Jan het <**dat boek*> beweerde <*dat boek*> *te willen kopen*.
that Jan it that book claimed to want buy
‘that Jan claimed he wanted to buy that book.’

b. Welk boek$_i$ beweerde Jan (*het) [dat hij t_i wilde kopen]?
which book claimed Jan it that he wanted buy
‘Which book did Jan claim he wanted to buy?’

In (586) we show essentially the same for the verb *proberen*, but since this verb does not take finite complement clauses, we illustrate the restriction on *wh*-movement by means of extraction from an infinitival clause.

(586) a. dat Jan het <**dat boek*> heeft geprobeerd <*dat boek*> *te kopen*.
that Jan it that book has tried to buy
'that Jan has tried to buy that book.'

b. Welk boek$_i$ probeerde Jan (*het) [PRO t_i te kopen]?
which book tried Jan it to buy
'Which book did Jan try to buy?'

The embedded clauses in the (b)-examples in (581) and (583) clearly violate both clauses in (584) and in addition they involve the anticipatory pronouns *erop*/*ertoe*; as expected, both clause splitting and *wh*-movement are impossible. The embedded clauses in the (c)-examples in (581) and (583) do seem to satisfy clause (584b) but they are not internal arguments of the matrix verbs because they are introduced as logical SUBJECTs of the particles; both clause splitting and *wh*-movement indeed give rise to a degraded result, although many speakers report that they consider the deviance less severe than in the (a)- and (b)-examples.

To conclude this discussion, we want to have another look at the formulation of the additional restrictions on the transparency of argument clauses, especially clause (584b), which claims that the argument clause not only has to be an internal argument of the verb but also function as a direct object. It is easy to check the validity of this claim by means of passivization of obligatory object control constructions. The examples in (587) first show that such constructions can be passivized due to the fact that passivization does not affect the control relation because PRO has an overt controller in both constructions, the indirect object *Marie*/*haar*.

(587) a. dat Jan Marie/haar$_i$ verzocht [PRO$_i$ het boek te kopen].
that Jan Marie/her requested the book to buy
'that Jan requested Marie/her to buy the book.'

b. dat Marie/haar$_i$ werd verzocht [PRO$_i$ het boek te kopen].
that Marie/her was requested the book to buy
'that Marie/she was requested to buy the book.'

Example (588a) further shows that obligatory object control constructions allow clause splitting: that we are dealing with a semi-transparent construction is clear from the fact that the perfect-tense construction does not exhibit the IPP-effect. Observe that speakers generally tend to evaluate clause-splitting as less acceptable with double object verbs.

(588) a. $^{(?)}$dat Jan Marie/haar *het boek* verzocht *te kopen*.
that Jan Marie/her the book requested to buy
'that Jan asked Marie/her to buy the book.'

b. $^{(?)}$dat Jan Marie/haar *het boek* heeft verzocht/*verzoeken *te kopen*.
that Jan Marie/her the book has requested/request to buy
'that Jan has asked Marie/her to buy the book.'

The crucial question is whether clause splitting is possible in the corresponding passive construction in (589a). Broekhuis et al. (1995:113) claimed that passive constructions of this type are grammatical, and it is certainly true that they are much better than examples such as (581a). Regardless of whether (589a) is grammatical or whether we should assign it some intermediate status, we have to answer the question what causes the observed difference in acceptability between the two examples. The most conspicuous difference is that whereas (581a) is introduced by the anticipatory pronoun *het* 'it', (589a) is not—in fact, example (589b) shows that adding an anticipatory pronoun to (589a) also makes clause splitting impossible.

(589) a. dat Marie/haar <$^{??}$*het boek*> werd verzocht <*het boek*> *te kopen*.
that Marie/her the book was requested to buy
'that Marie/she was requested to buy the book.'
b. dat het Marie/haar <**het boek*> werd verzocht <*het boek*> *te kopen*.
that it Marie/her the book was requested to buy
'that it was requested of Marie/her to buy the book.'

This suggests that the difference in acceptability between (581a) and (589a) is a reflection of a so-called argument/adjunct asymmetry; adjunct clauses are invariably islands for syntactic dependencies whereas argument clauses are not. This, in turn, suggests that we can simplify (584) for *te*-infinitivals as in (590) by dropping the clause concerning syntactic function (and probably the same holds for other clause types as well), where "argument" clauses introduced by an anticipatory pronoun are now considered to be a special type of adjunct clauses.

(590) *Te*-infinitival clauses that are internal arguments of a verb are (semi-)transparent.

It is important to note that we do not want (590) to mean that there are no additional restrictions on the (semi-)transparency of *te*-infinitivals; for example, it may be necessary for the infinitival clauses to be located in their base position in order to avoid the so-called °freezing effect. We leave the identification of such additional restrictions to future research.

IX. On the distinction between transparent and semi-transparent te-*infinitivals*

The discussion in Subsection VIII has made it clear that the difference between non-transparent and semi-transparent *te*-infinitivals not only reflects the categorial distinction between CP and TP, but also depends on properties of the wider syntactic context in which these clauses are used, such as their syntactic function or the presence of an anticipatory pronominal element. We are thus left with the distinction between semi-transparent and transparent *te*-infinitivals, which we referred to as Type A and B in Table (571). If we wish to maintain our earlier conclusion that these are of the same category, TP, we have to raise the question in what respect they are different. Bennis & Hoekstra (1989c:141ff.) put forward the more general claim that infinitival clauses allowing verb raising (in traditional terms) differ from extraposed infinitival clauses in that the temporal interpretation of the former, but not the latter, is dependent on the temporal interpretation of the matrix clause. Applied more specifically to *te*-infinitivals of type A & B, this implies that the former, but not the latter, constitute an independent temporal domain. That something like this is indeed the case is shown by the examples in (591a&b), adapted from Pardoen (1986), which show that independent temporal modification of *te*-infinitivals is only possible if the infinitival clause is in extraposed position. Whether independent temporal modification is also possible with split *te*-infinitivals is not discussed in the literature and is also difficult to establish with certainty given that examples such as (591a′) are clearly marked compared to (591a).

(591) a. Ik heb gisteren geprobeerd *die jongen* (*vandaag*) *te ontmoeten*. [type A]
I have yesterday tried that boy today to meet
‘I tried yesterday to meet that boy today.’
a′. $^{?}$Ik heb *die jongen* gisteren geprobeerd (*vandaag*) *te ontmoeten*. [type A]
I have that boy yesterday tried today to meet
‘I tried yesterday to meet that boy today.’
b. Ik heb *die jongen* gisteren (**vandaag*) proberen *te ontmoeten*. [type B]
I have that boy yesterday today try to meet

Given that the marked status of (591a′) may be due to the fact that splitting the non-verbal constituents of the infinitival clause always gives rise to a somewhat marked result, we may perhaps assume (591a′) to be grammatical. If so, we have to conclude that split *te*-infinitivals can receive an independent temporal interpretation, just like their non-split counterparts.

We provide a second set of examples with the verb *weigeren* ‘to refuse’ in (592), which give rise to more or less the same acceptability judgments. Note in passing that some speakers may also feel less comfortable with example (592b) if the adverbial phrase *morgen* is omitted; a Google search on the search string [*heeft weigeren/geweigerd te*] reveals that such examples with IPP are much less frequent than examples in which *weigeren* has its past participle form. However, the fact that a similar minimal pair is independently given by Haeseryn et al. (1997:1037) suggests that such examples are acceptable for many speakers.

(592) a. Marie had gisteren geweigerd *die jongen* (*morgen*) *te helpen*. [type A]
Marie had yesterday refused that boy tomorrow to help
‘Mary had refused yesterday to help that boy tomorrow.’
a′. Marie had *die jongen* gisteren geweigerd ($^{?}$*morgen*) *te helpen*. [type A]
Marie had that boy yesterday refused tomorrow to help
b. Marie had *die jongen* gisteren (**morgen*) weigeren *te helpen*. [type B]
Marie had that boy yesterday tomorrow refuse to help

We should keep in mind, however, that our acceptability evaluation of the primed examples in (591) and (592) is not very sharp and that our provisional claim with respect to their grammaticality must therefore be treated with caution; it is clearly imperative to investigate the similarities and differences between the transparent and semi-transparent *te*-infinitivals in more detail before drawing any firm conclusions about their syntactic status and/or semantic interpretation.

X. Selection restrictions on infinitival clauses imposed by the matrix verb

The previous subsections have shown that we have to distinguish between the three types of *(om +) te*-infinitivals in Table (571), repeated here as (593). This table leaves out semi-transparent infinitivals in subject raising constructions as these seem restricted to the formal register (as the relics of earlier stages of the language).

(593) Transparency of infinitival clauses (final version)

		SPLIT PATTERN	IPP-EFFECT
OPAQUE (CP)	*OM* + *TE*-INFINITIVALS	—	—
SEMI-TRANSPARENT (TP)	CONTROL *TE*-INFINITIVALS (TYPE A)	leftward mvt	—
TRANSPARENT (TP OR VP)	CONTROL *TE*-INFINITIVALS (TYPE B)	verb cluster	+
	SUBJECT RAISING *TE*-INFINITIVALS	verb cluster	+
	BARE INFINITIVALS	verb cluster	+

Concerning the opposition between extraposition and verb clustering, it seems that the opaque and semi-transparent infinitival clauses must be opposed to the transparent ones in that they must be in extraposed position. The availability of the IPP-effect can be used as a diagnostic; the IPP-effect is both necessary and sufficient to conclude that we are dealing with verb clustering—it is never found in extraposition constructions. The presence of the complementizer *om* can be used to distinguish between opaque and (semi-)transparent infinitivals: the presence of *om* is sufficient but not necessary to conclude that we are dealing with opaque infinitival clauses. Finally, recall from Subsection VIII that semi-transparent *te*-infinitivals only allow the split pattern if they satisfy a number of additional conditions: for example, they minimally should be internal arguments of the matrix verb. The same condition in fact holds for verb clustering.

Many verbs are compatible with more than one type of infinitival clause. A good example is the verb *proberen* 'to try', which also featured prominently in the previous subsections. The examples in (594) show that this verb is compatible with opaque, semi-transparent as well as transparent *te*-infinitivals.

(594) a. dat Jan heeft geprobeerd (*om*) *dat boek* *te lezen*. [opaque]
that Jan has tried COMP that book to read
'that Jan has tried to read that book.'
b. dat Jan *dat boek* heeft geprobeerd *te lezen*. [semi-transparent]
that Jan that book has tried to read
c. dat Jan *dat boek* heeft proberen *te lezen*. [transparent]
that Jan that book has try to read

The fact that these three examples are virtually equivalent (leaving aside the differences discussed in Subsection IX) raises the question as to why the examples in (594) can occur side by side in the current language. One answer might be that this is due to diachronic development of the language, to the extent that there is a tendency of making infinitival complements smaller in size, perhaps as a concomitant effect of a tendency of matrix verbs to lose their independent status as main verbs. This has been argued quite explicitly for the modal (subject raising) verbs *blijken* 'to turn out', *lijken* 'to appear' and *schijnen* 'to seem', which can still take extraposed (hence semi-transparent) clauses in the formal register, but not in colloquial speech; see Haegeman (2006) and Vliegen (2010) for discussion. The same line of thinking might also be supported by the fact that some semi-aspectual verbs, such as *zitten* 'to sit' in (595), seem to take *te*-infinitivals in the simple present/past tense but (preferably) bare infinitivals in the perfect tense; see Section 6.3.1 for more discussion. The infinitival clauses in (595) have been italicized and the number sign # indicates that using *te* in (595b) is not impossible but restricted to specific contexts; the relevant point here is the contrast between the two examples if *te* is omitted.

(595) a. dat Jan *een boek* zit (**te*) *lezen.*
that Jan a book sits to read
'that Jan is reading a book.'
b. dat Jan *een boek* heeft zitten $^{\#}$(*te*) *lezen.*
that Jan a book has sit to read
'that Jan has been reading a book.'

The diachronic development suggested above seems quite plausible for "semi-lexical" verbs like modal *blijken, lijken* and *schijnen* as well as aspectual *zitten*, but we will leave it open here whether it can also be successfully applied to lexical verbs like *proberen* 'to try'.

We conclude this section by providing the selection restrictions of the sample of verbs in Table 2. The data set has been garnered from Evers (1975), Den Besten et al. (1988), Den Besten & Rutten (1989), Rutten (1991), Van Haaften (1991), Broekhuis et al. (1995), Ter Beek (2008), and Zwart (2011). A number of things must be said beforehand about the information in this table. First, the classifications provided in the works mentioned above were developed at different stages in the development of the theory and/or for different purposes and, consequently, cannot always be straightforwardly transposed to Table 2. Second, it seems that there is substantial inter-speaker variation: it may therefore be the case that some Dutch readers find that they allow fewer, or more, options than indicated in the table. In this context, we should also point out that in some cases we did not rigidly follow the judgments given in the publications mentioned above because the authors sometimes provided contradictory judgments or sharpened their views over time (the latter holds especially for the views expressed in the various publications by the Den Besten research group). We had to supplement the data occasionally by means of introspection or information provided by Google searches. Third, we restrict ourselves to (di-)transitive verbs with object clauses, given that we have seen that semi-transparent *te*-infinitivals do not normally exhibit the split pattern if they have the syntactic function of subject, correspond to complements of prepositional objects, or function as logical SUBJECTs of complementives (including verbal particles, which–as we have seen–give rise to an intermediate status). We also exclude verbs that obligatorily introduce their object clause by means of the anticipatory pronoun *het* 'it', but we do include subject raising verbs. Fourth, speakers often prefer one of the options indicated; we did not indicate this since the literature does not provide any reliable information about this. Finally, we do not include bare infinitives in our inventory as these are always transparent; we refer the reader to Section 5.2.3 for discussion.

Table 2 shows that it is possible to group the verbs in several classes according to whether they select opaque, semi-transparent and/or transparent *te*-infinitivals, but it is not clear whether it is also possible to find a semantic correlate of this formal classification. Classes I and II have in common that the verbs are able to select both opaque and semi-transparent infinitivals. It does not seem possible to distinguish the two classes semantically as they both include control verbs of various types and they both include implicative verbs (which assert or deny the proposition expressed by the *te*-infinitival) and °irrealis verbs (which leave open whether the proposition expressed by the *te*-infinitival is/will become true). Note in passing that it is hard to classify *vergeten* 'to forget', given that the past participle and infinitive of this verb are homophonous. [For reasons of presentation the text continues after the table]

Table 2: Selection restrictions imposed by (di-)transitive verbs on infinitival object clauses

	VERB	TRANSLATION	OPAQUE	SEMI-TRANSPARENT	TRANSPARENT
I	beginnen	to start	+	+	+
	durven	to dare	+	+	+
	helpen	to help	+	+	+
	hopen	to hope	+	+	+
	leren	to learn/teach	+	+	+
	pogen	to try	+	+	+
	proberen	to try	+	+	+
	trachten	to try	+	+	+
	wagen	to dare	+	+	+
	weigeren	to refuse	+	+	+
	wensen	to wish	+	+	+
II	adviseren	to advise	+	+	—
	begeren	to desire	+	+	—
	beloven [+agens]	to promise	+	+	—
	beogen	to aim at	+	+	—
	besluiten	to decide	+	+	—
	bevelen	to order	+	+	—
	dreigen [+agens]	to threaten	+	+	—
	dwingen	to force	+	+	—
	eisen	to demand	+	+	—
	gebieden	to command	+	+	—
	verbieden	to forbid	+	+	—
	vergeten	to forget	+	+	?
	vermijden	to avoid	+	+	—
	verlangen	to desire	+	+	—
	verleren	to forget how to	+	+	—
	verplichten	to oblige	+	+	—
	verzoeken	to request	+	+	—
	verwachten	to expect	+	+	—
	verzuimen	to fail	+	+	—
	vragen	to ask/request	+	+	—
	vrezen	to fear	+	+	—

	VERB	TRANSLATION	OPAQUE	SEMI-TRANSPARENT	TRANSPARENT
III	antwoorden	to answer	—	+ (no split)	—
	beweren	to claim	—	+	—
	denken	to think	—	+	—/+
	fluisteren	to whisper	—	+ (no split)	—
	garanderen	to guarantee	—	+	—
	geloven	to believe	—	+	—
	menen	to suppose	—	+	+
	schreeuwen	to yell	—	+ (no split)	—
	schrijven	to write	—	+ (no split)	—
	verklaren	to state	—	+	—
	vertellen	to tell	—	+	—
	verwijten	to blame	—	+	—
	verzekeren	to guarantee	—	+	—
	zeggen	to say	—	+	—
IV	beloven [-agens]	to promise	—	—	+
	blijken	to turn out	—	—	+
	dreigen [-agens]	to threaten	—	—	+
	lijken	to seem	—	—	+
	schijnen	to appear	—	—	+
V	behoren/horen	ought to	—	—	+
	dienen	to have to	—	—	+
	(niet) hoeven	need not	—	—	+
	plegen	to be used to	—	—	+
	weten	to know how	—	—	+

Class III consists of verbs selecting semi-transparent *te*-infinitivals only and are often propositional in nature. If these verbs imply a specific mode of expression, like *fluisteren* ‘to whisper’, they do not allow the split pattern; this shows again that there may be additional restrictions on the transparency of *te*-infinitivals. Note further that the verb *denken* allows a transparent complement only when it is used with the same meaning as *menen* ‘to suppose’. Verbs that only select transparent *te*-infinitivals fall into two groups, given here as IV and V. Class IV consists of subject raising verbs, which are all modal in nature. The members of Class V are obligatory control verbs, but likewise seem to express some sort of modal meaning.

5.2.3. Bare infinitivals

This section discusses main verbs that may take bare infinitival clauses as their complement, such as the modal verb *moeten* ‘must’ or the perception verb *zien* ‘to see’ in (596); the bare infinitival complements of these verbs are given in italics. That the italicized phrases function as complements of the verbs *moeten* and *zien* is clear from the fact illustrated in the primed examples that they can be pronominalized.

(596) a. Jan moet *dat boek lezen*.
Jan must that book read
'Jan must read that book.'
a′. Jan moet dat.
Jan must that
'Jan must do that.'
b. Ik zag *Jan dat boek lezen*.
I saw Jan that book read
'I saw Jan read that book.'
b′. Ik zag dat.
I saw that
'I saw that.'

The constructions given in the primeless examples in (596) exhibit monoclausal behavior. First, the fact illustrated in the primeless examples in (597) that the verbs *moeten* and *zien* are able to split their infinitival complement if they are in clause-final position shows that there is °verb clustering: the percentage sign indicates that permeation of the clause-final verb cluster is possible in certain southern varieties of Dutch only. Second, the primed examples show that these constructions exhibit the °*infinitivus-pro-participio* effect in the perfect tense.

(597) a. dat Jan <dat boek> moet <$^{\%}$dat boek> lezen.
that Jan that book must read
'that Jan had to read that book.'
a′. dat Jan dat boek heeft moeten/*gemoeten lezen.
that Jan that book has must$_{inf}$/must$_{part}$ read
'that Jan has had to read that book.'
b. dat ik Jan <dat boek> zie <$^{\%}$dat boek> lezen.
that I Jan that book see read
'that I see Jan read that book.'
b′. dat ik Jan dat boek heb zien/*gezien lezen.
that I Jan that book have see/seen read
'that I've seen Jan read that book.'

Although all of this may seem relatively straightforward, it is not always immediately clear whether or not a specific verb actually takes a bare infinitival clause as its complement. The reason for this is that bare infinitives do not always °head an infinitival clause but can also be used as heads of BARE-INF nominalizations. The examples in (598) show that this holds especially if the infinitive is °monadic or takes an indefinite nominal complement; BARE-INF nominalizations with definite nominal complements are normally less felicitous. We refer the reader to Sections N1.3.1 and N2.2.3 for a detailed discussion of nominalization.

(598) a. Praten is vermoeiend.
talk is tiring
'Talking is tiring.'
b. Boeken/Een boek lezen is altijd leuk.
books/a book read is always nice
'Reading books/a book is always nice.'
c. $^{??}$De boeken/het boek lezen is altijd leuk.
the books/the book read is always nice
'Reading the books/the book is always nice.'

As a result of these two uses of bare infinitives, it may sometimes be impossible to tell at face value whether a certain main verb takes a bare infinitival clause or a BARE-INF nominalization as its complement. Section 5.2.3.1 will therefore start by discussing constructions with the verb *leren* 'to learn/teach', which may be ambiguous if they contain a bare infinitive, and argue that verbal and nominal bare infinitives differ systematically as indicated in Table (599); these properties can therefore be used as tests to determine the categorial status of bare infinitives.

(599) The verbal and nominal use of bare infinitives

		INFINITIVAL CLAUSE	NOMINALIZATION
I	IS PART OF THE VERBAL COMPLEX	+	—
II	PRECEDES/FOLLOWS THE GOVERNING VERB	normally follows	precedes
III	TRIGGERS IPP-EFFECT	+	—
IV	ALLOWS FOCUS MOVEMENT	—	+
V	MAY FOLLOW NEGATIVE ADVERB *NIET* 'NOT'	+	—
VI	CAN BE PRECEDED BY THE ARTICLE *GEEN* 'NO'	—	+

After having established the characteristic properties of bare infinitival complement clauses, we will continue with the discussion of a number of subclasses of verbs that (potentially) may take a bare infinitival clause as their complement. Apart from *leren* in (600a), this section will also discuss the verb classes in (600b-e).

(600) a. The verb *leren* 'to learn/teach'
b. Modal verbs: *moeten* 'must', *kunnen* 'may', *willen* 'to want', etc.
c. Perception verbs: *zien* 'to see', *horen* 'to hear', *voelen* 'to feel', etc.
d. Verbs of causation/permission: *laten* 'to make/let', *doen* 'to make'
e. The verbs *hebben* 'to have' and *krijgen* 'to get'

5.2.3.1. The verb leren *'to teach/learn'*

Bare infinitives can be used as heads of both bare infinitival clauses and BARE-INF nominalizations. Consequently, it is normally not possible to tell immediately whether constructions in which a main verb is combined with a bare infinitival involve nominal or clausal complementation. This is illustrated in the examples in (601) with the verb *leren* 'to learn/teach'; since the primeless examples show that this verb may take a nominal complement, *scheikunde* 'chemistry', it is an open question as to whether the bare infinitive *zwemmen* 'swim' in the primed examples is nominal or verbal in nature; we indicated this by marking the infinitive with a question mark. In what follows, we will argue that the primed examples in (601) are in fact ambiguous, as is also suggested by the translations, and in doing so we will develop a number of tests that can be used to distinguish the two readings.

(601) a. Jan leert scheikunde.
Jan learns chemistry
'Jan is learning chemistry.'

a′. Jan leert zwemmen$_?$.
Jan learns swim
'Jan is learning swimming/to swim.'

b. Els leert Jan scheikunde.
Els teaches Jan chemistry
'Els is teaching Jan chemistry.'

b′. Els leert Jan zwemmen$_?$.
Els teaches Jan swim
'Els is teaching Jan swimming/to swim.'

I. The bare infinitive is (not) part of the verb sequence

If the primed examples in (601) are really ambiguous between a nominal and a verbal reading of the bare infinitive *zwemmen*, we expect this to come out in the word order of the clause. Since constructions with bare infinitival complement clauses exhibit monoclausal behavior, we expect °verb clustering: the verb *leren* may precede the bare infinitive in embedded clauses and separate it from its dependents (arguments and modifiers). The fact that the verb *leren* can indeed split the strings *goed zwemmen* 'swim well' and *computers repareren* 'repair computers' in (602) thus shows that we are dealing with clausal infinitival complements in these examples, which is indicated by marking the bare infinitive with the label "V".

(602) a. dat Jan *goed* leert *zwemmen*$_{\text{V}}$.
that Jan well learns swim
'that Jan is learning to swim well.'
a′. dat Marie Jan *goed* leert *zwemmen*$_{\text{V}}$.
that Marie Jan well teaches swim
'that Marie is teaching Jan to swim well.'
b. dat Jan *computers* leert *repareren*$_{\text{V}}$.
that Jan computers learns repair
'that Jan is learning to repair computers.'
b′. dat Els Jan *computers* leert *repareren*$_{\text{V}}$.
that Els Jan computers teaches repair
'that Els is teaching Jan to repair computers.'

II. The bare infinitive follows/precedes the governing verb

The verbal status of the bare infinitives in the examples from the previous subsection also appears from the word order of the clause-final verbal sequence. Because noun phrases cannot follow the verbs in clause-final position, the fact that the bare infinitive follows the clause-final finite verb *leren* in (602) is already sufficient for concluding that we are not dealing with BARE-INF nominalizations but with bare infinitival complement clauses. This word order generalization is especially useful when the verb has no dependent, as in the cases in (603); the bare infinitives following the clause-final finite verb *leren* must be verbal.

(603) a. dat Jan <zwemmen$_{?}$> leert <zwemmen$_{\text{V}}$>.
that Jan swim learns
b. dat Marie Jan <zwemmen$_{?}$> leert <zwemmen$_{\text{V}}$>.
that Marie Jan swim teaches

Since BARE-INF nominalizations must precede their governing verb in clause-final position, it seems reasonable to assume that the bare infinitives preceding *leren* are nominal. Nevertheless, we marked them with a question mark because although clause-final verb clusters of the form V_{finite} - $\text{V}_{\text{infinitive}}$ normally surface with the finite verb preceding the infinitive, most speakers also allow the inverse order under certain conditions (we will discuss an unambiguous case of this in Section 7.3, sub IC).

Although in the case of clause-final verb clusters consisting of *no more than two* verbs precedence of the bare infinitive is only a necessary and not a sufficient condition for concluding that we are dealing with BARE-INF nominalization, the word order of clause-final verbal sequences can still be used as a diagnostic with verb clusters consisting of *more than two* verbs, because in such cases most speakers of Standard Dutch do require verbal bare infinitives to follow their governing verb. The fact that the bare infinitive *zwemmen* may precede the verb *leren* in examples such as (604) thus shows that bare infinitivals can indeed be BARE-INF nominalizations in the complement of *leren*, as is indicated by the index N on the preverbal occurrence of *zwemmen*.

(604) a. dat Jan <zwemmen$_N$> wil leren <zwemmen$_V$>.
that Jan swim wants learn
b. dat Marie Jan <zwemmen$_N$> wil leren <zwemmen$_V$>.
that Marie Jan swim wants teach

III. The bare infinitive triggers/does not trigger the IPP-effect

The structural ambiguity of the bare infinitives in the primed examples of (601) is also clear from the contrast with respect to the IPP-effect in the perfect-tense examples in (605): if *leren* takes a bare infinitival clausal complement, we expect the IPP-effect to arise, but not if it takes a BARE-INF nominalization. The primeless examples show that when the bare infinitive *zwemmen* follows *leren*, IPP does indeed arise, and we can therefore conclude that the infinitive is verbal in this case. The primed examples, on the other hand, show that when the bare infinitive *zwemmen* precedes *leren*, IPP cannot arise, and we therefore conclude that it is nominal in this case.

(605) a. dat Jan heeft willen leren/*geleerd zwemmen$_V$.
that Jan has want learn/learned swim
'that Jan has wanted to learn to swim.'
a′. dat Jan zwemmen$_N$ heeft geleerd/*leren.
that Jan swim has learned/learn
'that Jan has learned swimming.'
b. dat Marie Jan heeft leren/*geleerd zwemmen$_V$.
that Marie Jan has teach/taught swim
'that Marie has taught Jan to swim.'
b′. dat Marie Jan zwemmen$_N$ geleerd/*leren heeft.
that Marie Jan swim taught/teach has
'that Marie has taught Jan swimming.'

In the examples in (605) the difference with respect to the IPP-effect was illustrated by means of the intransitive verb *zwemmen* 'to swim'. The same difference occurs, however, with transitive verbs with a bare nominal object like *auto rijden* 'to drive (a car)'. The (a)-example in (606) shows that the infinitive may either precede or follow its governing verb, while the (b)-examples bear out that this affects the occurrence of IPP.

(606) a. dat Jan auto <rijden$_{N}$> wil leren <rijden$_{V}$>.
that Jan car drive want learn
‘that Jan wants to learn driving/to drive a car.’
b. dat Jan auto heeft leren/*geleerd rijden$_{V}$.
that Jan car has learn/learned drive
‘that Jan has learned to drive a car.’
b′. dat Jan auto rijden$_{N}$ heeft geleerd/*leren.
that Jan car drive has learned/learn
‘that Jan has learned driving.’

Examples such as (606b′) are especially felicitous with BARE-INF nominalizations if the object-noun combinations are fixed collocations referring to some conventional activity: *aardappels schillen* ‘to peel potatoes’, *paard rijden* ‘to ride on horseback’, *piano spelen* ‘to play the piano’, etc. Less conventional combinations like *computers repareren* ‘to repair computers’ in (607) seem acceptable in BARE-INF nominalizations, although some speakers may find them somewhat marked.

(607) a. dat Jan computers <$^{?}$repareren$_{N}$> wil leren <repareren$_{V}$>.
that Jan computers repair want learn
‘that Jan wants to learn repairing/to repair computers.’
b. dat Jan computers heeft leren/*geleerd repareren$_{V}$.
that Jan computers has learn/learned repair
‘that Jan has learned to repair computers.’
b′. dat Jan computers repareren$_{N}$ heeft $^{?}$geleerd/*leren.
that Jan computers repair has learned/learn
‘that Jan has learned repairing computers.’

IV. The bare infinitive allows/does not allow focus movement

That infinitives preceding a clause-final verbal sequence of two (or more) verbs are nominal is also clear from the fact that they do not have to be adjacent to the clause-final verbal sequence; the examples in (608) show that like other nominal objects they may scramble to a more leftward position. Observe that examples like these require the infinitive to be assigned contrastive °focus accent, and that even then the (b)-example may be considered somewhat marked by some speakers.

(608) a. dat Jan ZWEMMEN waarschijnlijk wel nooit zal leren.
that Jan swim probably PRT never will learn
‘that Jan will probably never learn swimming.’
b. $^{(?)}$dat Marie Jan ZWEMMEN waarschijnlijk wel nooit zal leren.
that Marie Jan swim probably PRT never will teach
‘that Marie will probably never teach Jan swimming.’

Example (609a) shows the same thing by means of verbs with a bare nominal object like *auto rijden* ‘to drive’. The (b)-examples are added to show that the nominal complement of the bare infinitive can be scrambled on its own by focus movement if the infinitive heads a bare infinitival clause, but that this is impossible if it heads a noun phrase. This is consistent with the fact that the nominal complements are never extracted from BARE-INF nominalizations.

(609) a. dat Jan AUTO rijden$_N$ waarschijnlijk wel nooit zal leren.
that Jan car drive probably PRT never will learn
'that Jan will probably never learn driving.'
b. dat Jan AUTO waarschijnlijk wel nooit zal leren rijden$_V$.
that Jan car probably PRT never will learn drive
'that Jan will probably never learn to drive.'
b′. *dat Jan AUTO waarschijnlijk wel nooit rijden$_N$ zal leren.
that Jan car probably PRT never drive will learn
'that Jan will probably never learn driving.'

That less conventional combinations like *computers repareren* 'to repair computers' are acceptable but marked in BARE-INF nominalizations is also clear from the fact that focus movement in $^?$*dat Jan COMPUTERS repareren waarschijnlijk wel nooit zal leren* 'that Jan will probably never learn to repair computers' may be considered degraded by some speakers.

V. The bare infinitive can follow sentence negation/be preceded by geen *'no'*

A final argument for assuming that bare infinitives preceding clause-final verbal sequences of two or more verbs are nominal is that they cannot follow sentential negation expressed by the negative adverb *niet* 'not'; as in the case of other indefinite noun phrases, negation must be expressed by means of the negative article *geen* 'no'. The contrast between the primeless and primed examples in (610) thus confirms that infinitives preceding a clause-final verbal sequence of two (or more) verbs are nominal in nature.

(610) a. dat zijn dochter door geldgebrek niet kan leren zwemmen$_V$.
that his daughter by lack.of.money not can learn swim
'that his daughter can't learn to swim because of lack of money.'
a′. dat zijn dochter door geldgebrek geen/*niet zwemmen$_N$ kan leren.
that his daughter by lack.of.money no/not swim can learn
'that his daughter can't learn swimming because of lack of money.'
b. dat hij zijn dochter door geldgebrek niet kan leren zwemmen$_V$.
that he his daughter by lack.of.money not can teach swim
'that he can't teach his daughter to swim because of lack of money.'
b′. dat hij zijn·dochter door geldgebrek geen/*niet zwemmen$_N$ kan leren.
that he his daughter by lack.of.money no/not swim can learn
'that he can't teach his daughter swimming because of lack of money.'

The examples in (611) illustrate the same contrast by means of perfect-tense constructions.

(611) a. dat zijn dochter door geldgebrek niet heeft leren zwemmen$_V$.
that his daughter by lack.of.money not has learn swim
'that his daughter hasn't learned to swim because of lack of money.'
a′. dat zijn dochter door geldgebrek geen/*niet zwemmen$_N$ heeft geleerd.
that his daughter by lack.of.money no/not swim has learned
'that his daughter hasn't learned swimming because of lack of money.'

b. dat hij zijn dochter door geldgebrek niet heeft leren zwemmen$_V$.
that he his daughter by lack.of.money not has teach swim
‘that he hasn’t taught his daughter to swim because of lack of money.’
b′. dat hij zijn dochter door geldgebrek geen/*niet zwemmen$_N$ heeft geleerd.
that he his daughter by lack.of.money no/not swim has taught
‘that he hasn’t taught his daughter swimming because of lack of money.’

The negation facts are less telling with transitive constructions such as *auto rijden* ‘to drive’ since the indefinite object *auto* in the verbal construction cannot follow the negative adverb *niet* ‘not’ either, and can likewise be preceded by the negative article *geen* ‘no’. So, at face value, the two perfect-tense constructions in (612) seem to behave in an identical fashion in this case. We should keep in mind, however, that the article *geen* is the determiner of the noun phrase *geen auto* in (612a) but of the BARE-INF nominalization *geen auto rijden* in (612b).

(612) a. dat Jan geen/*niet auto heeft leren rijden$_V$.
that Jan no/not car has learn drive
‘that Jan hasn’t learned to drive a car.’
b. dat Jan geen/*niet auto rijden$_N$ heeft geleerd.
that Jan no/not car drive has learned
‘that Jan hasn’t learned driving a car.’

VI. Conclusion

The discussion so far has established six differences between constructions with a bare infinitival clausal complement and a nominal complement in the form of a BARE-INF nominalization. These were already announced in Table (599), which is therefore simply repeated here as (613).

(613) The verbal and nominal use of bare infinitives

		INFINITIVAL CLAUSE	NOMINALIZATION
I	IS PART OF THE VERBAL COMPLEX	+	—
II	PRECEDES/FOLLOWS THE GOVERNING VERB	normally follows	precedes
III	TRIGGERS IPP-EFFECT	+	—
IV	ALLOWS FOCUS MOVEMENT	—	+
V	MAY FOLLOW NEGATIVE ADVERB *NIET* ‘NOT’	+	—
VI	CAN BE PRECEDED BY THE ARTICLE *GEEN* ‘NO’	—	+

The findings in Table (613) are important because they may help us in determining whether a given bare infinitive does or does not belong to the verbal complex. The discussion in this section suggests at least that bare infinitives preceding their governing verb are nominalizations if the bare infinitive is part of a verbal complex of two or more verbs. If correct, this will simplify the description of the word order of the verbal complex considerably; we will return to this in Chapter 7.

5.2.3.2. Modal verbs

This section discusses modal verbs like *willen* ‘want’, *moeten* ‘must’ and *kunnen* ‘may’, which take a bare infinitival complement. It is a matter of debate whether modal verbs taking a bare infinitival complement should be classified as main or non-main verbs. Section 4.5, sub II, has discussed in greater detail why we diverge from most descriptive grammars in analyzing these modal verbs as main verbs, and in Subsection I we will briefly repeat some of these reasons.

Since bare infinitives can be used as heads of both bare infinitival clauses and BARE-INF nominalizations, it is impossible to tell without further investigation whether constructions such as (614a) involve nominal or clausal complementation. At least, this holds for Dutch since (614b) shows that, contrary to their English counterparts, modal verbs like *willen*, *moeten* and *kunnen* can also take non-clausal complements.

(614) a. Jan wil *een ijsje* *kopen*.
Jan wants.to an ice.cream buy
'Jan wants to buy an ice cream.'
b. Jan wil *een ijsje*.
Jan wants an ice.cream
'Jan wants to have an ice cream.'

Subsection II therefore reviews the reasons for assuming that these modal verbs take bare infinitival complement clauses, and will also discuss whether these modal verbs can be complemented by BARE-INF nominalizations. Subsection III continues by providing a discussion of a number of semantic and syntactic properties of the modal verbs under discussion, which adopts as its point of departure the semantic classification of modality provided by Palmer (2001), with one non-trivial addition based on observations found in Klooster (1986) and Barbiers (1995).

I. Modal verbs are main verbs

The main reason for treating modal verbs like *willen* 'want', *moeten* 'must' and *kunnen* 'may' as main verbs here is that they allow pronominalization of their complement; this is shown in the primed examples in (615).

(615) a. Jan moet *dat boek* *lezen*.
Jan has.to that book read
'Jan has to read that book.'
a′. Jan moet *dat*.
Jan must that
'Jan has to do that.'
b. Jan wil *een ijsje* *kopen*.
Jan wants.to an ice.cream buy
'Jan wants to buy an ice cream.'
b′. Jan wil *dat*.
Jan wants that
'Jan wants to do that.'

That modal verbs can function as main verbs is also clear from the fact illustrated in (616) and (617) that it is possible for these verbs to select non-clausal complements; in (616) the complement is nominal in nature and in (617) it has the form of an adjectival/adpositional °complementive. We refer the reader to Section 4.5, sub II, for arguments showing that examples like these do *not* involve a bare infinitival complement with some phonetically empty verb corresponding to the verbs *have*, *get*, *do*, etc. in the English translations.

(616) a. Jan wil een ijsje kopen.
Jan wants.to an ice.cream buy
'Jan wants to buy an ice cream.'
a′. Jan wil een ijsje.
Jan wants an ice.cream
'Jan wants to have an ice cream.'
b. Jan moet zijn medicijnen innemen.
Jan must his medicines in-take
'Jan must take his medicines.'
b′. Jan moet zijn medicijnen nog.
Jan must his medicines still
'Jan should take his medicines.'
c. Jan kan alles doen.
Jan can everything do
'Jan can do anything.'
c′. Jan kan alles.
Jan can everything
'Jan can do anything.'

(617) a. Deze fles moet leeg.
this bottle must empty
'This bottle must be emptied.'
b. Die lampen moeten uit.
those lamps must off
'Those lights must be switched off.'
c. Die boeken kunnen in de vuilnisbak.
those books may into the dustbin
'Those books may be thrown into the dustbin.'

The standard assumption that (pronominal) noun phrases must be assigned a °thematic role (that is, be semantically licensed) by the verb, in tandem with our claim that non-main verbs are not able to do so, leads to the conclusion that modal verbs like *moeten* and *willen* are main verbs; see Section 4.5 for more detailed discussion.

II. Modal verbs take bare infinitival complement clauses

The previous subsection has shown that modal verbs like *willen* 'want', *moeten* 'must' and *kunnen* 'may' may take nominal complements. Since bare infinitives can be used as heads of both bare infinitival clauses and BARE-INF nominalizations, it is therefore not *a priori* clear whether the primeless examples in (616) involve clausal or nominal complementation. This subsection therefore applies the tests developed in Section 5.2.3.1, repeated here as (618), in order to establish that modal verbs may indeed take bare infinitival complement clauses.

(618) The verbal and nominal use of bare infinitives

		INFINITIVAL CLAUSE	NOMINALIZATION
I	IS PART OF THE VERBAL COMPLEX	+	—
II	PRECEDES/FOLLOWS THE GOVERNING VERB	normally follows	precedes
III	TRIGGERS IPP-EFFECT	+	—
IV	ALLOWS FOCUS MOVEMENT	—	+
V	MAY FOLLOW NEGATIVE ADVERB *NIET* 'NOT'	+	—
VI	CAN BE PRECEDED BY THE ARTICLE *GEEN* 'NO'	—	+

In the examples in (619) the first two tests are applied to examples with *willen* 'want'. First, these examples show that the bare infinitives can be construed as part of the °verbal complex, as is clear from the fact that, in clause-final position, *willen* is able to separate them from their dependents, respectively, the direct object *een ijsje* ‘an ice cream’ and the adverbial modifier *hard* ‘loudly’. Second, they show that the bare infinitives may follow the modal *willen* in clause-final position. From this we may conclude that the modal verbs are indeed able to take bare infinitival complement clauses.

(619) a. dat Jan *een ijsje* <kopen$_{?}$> wil <kopen$_{V}$>.
that Jan an ice.cream buy wants
‘that Jan wants to buy an ice cream.’
b. dat Jan *hard* <gillen$_{?}$> wilde <gillen$_{V}$>.
that Jan loudly scream wanted
‘that Jan wanted to scream loudly.’

We marked the bare infinitives preceding the modal verbs in (619) with a question mark, since it remains to be seen whether they are indeed nominal in nature. If so, they should be able to also precede clause-final verbal sequences consisting of two or more verbs. The examples in (620) show, however, that this gives rise to a severely degraded result.

(620) a. dat Jan *een ijsje* <$^{*?}$kopen$_{N}$> zou willen <kopen$_{V}$>.
that Jan an ice.cream buy would want
‘that Jan would like to buy an ice cream.’
b. dat Jan *hard* <$^{*?}$gillen$_{N}$> zou willen <gillen$_{V}$>.
that Jan loudly scream would want
‘that Jan would like to scream loudly.’

The examples in (620) suggest that modal verbs do not comfortably take BARE-INF nominalizations as their complement. This conclusion is also supported by the fact that the IPP-effect is obligatory (test III); the modal verb must surface as an infinitive in the perfect-tense constructions in the primeless examples in (621). The status of the primed examples is comparable to the status of the examples in (620) with the infinitive preceding the verbs in clause-final position.

(621) a. dat Jan een ijsje had willen/*gewild kopen$_{V}$.
that Jan an ice.cream had want/wanted buy
‘that Jan had wanted to buy an ice cream.’
a′. $^{*?}$dat Jan een ijsje kopen$_{N}$ had gewild.
that Jan an ice.cream buy had wanted
b. dat Jan hard had willen/*gewild gillen$_{V}$.
that Jan loudly had want/wanted scream
‘that Jan had wanted to scream loudly.’
b′. $^{*?}$dat Jan hard gillen$_{N}$ had gewild.
that Jan loudly scream had wanted

If modal verbs indeed resist BARE-INF nominalizations as complements, we expect focus movement to be excluded (test IV). The examples in (622) show that it is not clear whether this is borne out; the examples are marked but it seems too strong a claim to say that they are unacceptable. Note that the perfect-tense constructions in the primed examples would become completely ungrammatical if we replace the past participle *gewild* by the infinitive *willen*.

(622) a. ?dat Jan een IJSJE kopen$_N$ waarschijnlijk wel zou willen.
that Jan an ice.cream buy probably PRT would want
'that Jan would probably like to buy an ice cream.'
a′. ?dat Jan een IJSJE kopen$_N$ waarschijnlijk wel had gewild.
that Jan an ice.cream buy probably PRT had wanted
b. ?dat Jan hard GILLEN$_N$ waarschijnlijk wel zou willen.
that Jan loudly scream probably PRT would want
'that Jan would probably like to scream loudly.'
b′. ?dat Jan hard SCHREEUWEN$_N$ waarschijnlijk wel had gewild.
that Jan loudly scream probably PRT had wanted

The two negation tests again suggest that modal verbs do not easily take BARE-INF nominalizations as their complement; the fact that the bare infinitive *zingen* cannot be preceded by the negative article *geen* 'no' in (623b) suggests that it must be interpreted as verbal.

(623) a. dat Jan niet wil zingen.
that Jan not wants sing
'that Jan doesn't want to sing.'
b. dat Jan niet/*geen zingen wil.
that Jan not/no sing wants
'that Jan doesn't want to sing.'

The examples above have shown that modal infinitives normally do not take BARE-INF nominalizations as their complement. Possible exceptions are cases such as (622), in which the bare infinitive is not adjacent to the verb sequence in clause-final position as the result of focus movement. The same thing may in fact hold for cases in which the infinitive is topicalized, as is can be inferred from the fact that the IPP-effect does not apply in the perfect-tense constructions in the primed examples of (624). We will return to this issue in Section 11.3.3, sub C.

(624) a. Een ijsje kopen zou Jan wel willen.
an ice.cream buy would Jan PRT want
a′. Een ijsje kopen had Jan wel gewild/*willen.
an ice.cream buy had Jan PRT wanted/want
b. Hard gillen zou Jan wel willen.
loudly scream would Jan PRT want
b′. Hard gillen has Jan wel gewild/*willen.
loudly scream had Jan PRT wanted/want

III. Types of modality

Palmer (2001) provides a semantic classification of modality based on cross-linguistic research. Following his classification, we can divide the Dutch modal verbs taking a bare infinitival complement as in (625). As Palmer also noted for modality markers in other languages, Dutch modal verbs are often ambiguous: the verbs *moeten* 'must/be obliged', *kunnen* 'may/be able' and *zullen* 'will/shall', for example, can be used to express propositional or event modality. Observe that the modal verbs given in (625) are just the ones that are prototypically associated with the type of modality in question; they may, however, also have less prototypical uses, which we will discuss as we go along.

(625) • Classification of modal verbs taking a bare infinitival (after Palmer 2001)
  a. Propositional modality:
    (i) Epistemic: a. Deductive: *moeten* 'must'
      b. Speculative: *kunnen* 'may'
      c. Assumptive: *zullen* 'will'
    (ii) Evidential: a. reported: —
      b. Sensory: —
  b. Event modality:
    (i) Deontic: a. Permissive: *mogen* 'may/be allowed'
      b. Obligative: *moeten* 'must/be obliged'
      c. Commisive: *zullen* 'shall'
    (ii) Dynamic: a. Ability: *kunnen* 'can/be able'
      b. Volitive: *willen* 'will/want'

The schema in (625) shows that modal verbs taking a bare infinitival clause cannot be used to express evidential modality. The discussion of the different types of modality below will show that this does not necessarily mean that there are no specialized verbs that can have such a function, but only that they do not belong to (or are normally not considered part of) the set of verbs under discussion here; we return to this in Subsection A2.

The examples in (626) and (627) below illustrate the basic distinction between propositional and event modality. In (626a), the modal verbs express propositional modality in the sense that they provide the speaker's evaluation of the factual status of the proposition BE AT HOME (Marie). This is clear from the fact that examples like these are frequently paraphrased in the linguistic literature as in (626b), where the modal predicate V_{mod} *wel zo zijn* 'V be the case' in the main clause is clearly predicated of the embedded finite clause that functions as the °logical SUBJECT of the main clause (via the anticipatory subject pronoun *het* 'it', which is indicated by subscripts).

(626) a. Marie moet/kan/zal nu wel thuis zijn. [propositional modality]
Marie must/may/will now PRT at.home be
'Marie must/may/will be at home now.'
b. Het$_i$ moet/kan/zal wel zo zijn [dat Marie nu thuis is]$_i$.
it must/may/will PRT the.case be that Marie now at.home is
'It must/may/will be the case that Marie is at home now.'

In (627a), the modal verbs express event modality. The speaker is not so much interested in the factual status of the proposition READ (Marie, the book), which is typically not (yet) actualized at speech time, but in the *moving force* that is involved in the potential realization of the °eventuality. This is clear from the fact that examples like these are generally paraphrased as in (627b), in which the predicate in the main clause is not predicated of the embedded finite clause but of the agent of the proposition expressed by the embedded clause (which is indicated by coindexing of the subject of the main clause and the implied PRO-subject of the embedded clause).

(627) a. Marie moet/mag/zal het boek binnenkort lezen. [event modality]
Marie must/may/will the book soon read
'Marie must/may/shall read the book soon.'
b. Marie$_i$ is verplicht/in staat [om PRO$_i$ het boek binnenkort te lezen].
Marie is obliged/IN able COMP the book soon to read
'Marie is obliged/able to read the book soon.'

Further subdivisions of these two main types of modality will be discussed in the following subsections. Subsection A on propositional modality is relatively brief because the semantics of epistemic modality is also extensively discussed in Section 1.5.2 and evidential modality is normally (tacitly and perhaps wrongly) assumed not to be expressed by modal verbs in Dutch. Subsection B on event modality shows that Palmer's distinction between dynamic and deontic modality is not adequate enough, and that deontic modality in fact refers to two different types of modality with different semantic and syntactic properties. This will lead to a revision of the classification in (625) as in (628). Subsection C concludes by providing a binary feature analysis of these four types of modality.

(628) • Revised classification of modal verbs taking a bare infinitival
a. Epistemic (propositional modality type I)
b. Directed deontic (event modality type Ia)
c. Non-directed deontic (event modality type Ib)
d Dynamic (event modality type II)

A. Propositional modality

Propositional modality is related to the speaker's evaluation of the factual status of the proposition expressed by the projection of the main verb embedded under the modal verb. According to Palmer (2001), judgments may be of two different kinds: there are epistemic and evidential judgments, which are concerned with, respectively, the truth value of the proposition and the evidence that is available for the truth of the proposition.

1. Epistemic modality

If modal verbs are used to express epistemic judgments, they indicate the likelihood of the actual occurrence of a specific eventuality. Although we will not address this issue here, the notion of ACTUAL OCCURRENCE should be understood as "actual occurrence within the present/past tense interval"; see Section 1.5.2 for detailed discussion. This subsection focuses on the fact that Palmer distinguishes three types of epistemic judgments, which he refers to as speculative, deductive and assumptive, and which are prototypically expressed in Dutch by, respectively, *kunnen* 'may', *moeten* 'must' and *zullen* 'will'.

(629) a. Marie kan nu thuis zijn. [speculative]
Marie may now at.home be
b. Marie moet nu thuis zijn. [deductive]
Marie must now at.home be
c. Marie zal nu thuis zijn. [assumptive]
Marie will now at.home be

By uttering sentences such as (629a-c), the speaker provides three different epistemic judgments about (his commitment to the truth of) the proposition BE AT HOME (*Marie*), as expressed by the lexical projection of the embedded main verb embedded under the modal verb. The use of *kunnen* 'may' in (629a) presents the proposition as *a possible* conclusion: the speaker is uncertain whether the proposition is true, but on the basis of the information available to him he is not able to exclude it. The use of *moeten* 'must' in (629b) presents the proposition as *the only possible* conclusion: on the basis of the information available the speaker concludes that the proposition is true. The use of *zullen* 'will' in (629c) presents the proposition as *a reasonable* conclusion on the basis of the available evidence. The type of evidence on which the speaker's evaluation is based is not important; it may consist of any information available to the speaker, including experience and generally accepted knowledge as in *Het is vier uur*; *Marie kan/moet/zal nu thuis zijn* 'It is four o'clock; Marie may/must/will be at home now'.

It is not immediately clear whether the three subtypes of epistemic modality in (629) are exhaustive. The slightly different constructions with *mogen* and *willen* in (630), for example, may be instantiations of epistemic modality but also have some additional meaning aspects (which may partly be attributed to the particles *dan* and *nog wel eens*). For example, the clause with the verb *mogen* in the first conjunct of (630a) is assumptive in that it indicates that the speaker accepts that the proposition *Jan is smart* is true, but the central meaning aspect of the sentence as a whole is concessive and somewhat depreciatory in nature; the second conjunct asserts the main message that Jan is not very clever with his hand; see also Haeseryn (1997:1618). Similarly, the construction with the verb *willen* in (630b) seems speculative in nature but the main message of the construction as a whole is that the lamp has the tendency to topple over.

(630) a. Jan mag dan erg slim zijn, maar hij is niet handig.
Jan may PRT very smart be but he is not deft
'Jan may well be very smart, but he isn't clever with his hands.'
b. Die lamp wil nog wel eens omvallen.
that lamp wants PRT PRT occasionally prt.-fall
'That lamp has the tendency to topple over.'

Let us return to the judgments concerning the truth of the proposition BE AT HOME (*Marie*). It is clear from the paraphrases of (629) in (631) that the truth value of the embedded proposition is being evaluated epistemically: in the paraphrases the epistemic judgment and the proposition are expressed by different clauses; the latter is now expressed as a finite embedded clause that functions as the logical subject of the epistemic predicate in the main clause.

(631) a. Het$_i$ kan zo zijn [dat Marie nu thuis is]$_i$.
it may the.case be that Marie now at.home is
‘It may be the case that Marie is at home now.’
b. Het$_i$ moet zo zijn [dat Marie nu thuis is]$_i$.
it must the.case be that Marie now at.home is
‘It must be the case that Marie is at home now.’
c. Het$_i$ zal zo zijn [dat Marie nu thuis is]$_i$.
it will the.case be that Marie now at.home is
‘It will be the case that Marie is at home now.’

That we are dealing with special cases of epistemic modality in (630) might be supported by the fact that these examples can be given similar paraphrases as the examples in (629), as is shown by the examples in (632).

(632) a. Het$_i$ mag dan zo zijn [dat Jan erg slim is]$_i$,
it may PRT the.case be that Jan very smart is
maar hij is niet handig.
but he is not deft
‘It may well be that Jan is very smart, but he isn’t clever with his hands.’
b. Het$_i$ wil nog wel eens zo zijn [dat die lamp omvalt]$_i$.
it wants prt prt occasionally the.case be that that lamp prt.-fall
‘That lamp has the tendency to topple over.’

Note in passing that we have used the predicate *V$_{mod}$ wel zo zijn* ‘V well be the case’ in (631) and (632), but that the modal verb *kunnen* ‘may’ can also function autonomously as the epistemic predicate: cf. *Het kan dat Marie nu thuis is* ‘It may be that Marie is at home now’. This autonomous use seems less common with *moeten*, *mogen* and *willen*, and virtually impossible with *zullen*.

That epistemic modal verbs are predicated of a propositional complement is also clear from the (b)-examples in (633); the modal verbs are predicated of the demonstrative pronoun *dat* ‘that’, which is interpreted as referring to the proposition expressed by *Marie is nu thuis* ‘Marie is at home now’.

(633) a. Wat denk je: is Marie nu thuis?
what think you is Marie now at.home
‘What do you think: Is Marie at home at this moment?’
b. Ja, dat kan/moet wel.
yes, that may/must PRT
‘Yes, that may/must be so.’
b′. Ja, dat zal wel.
yes, that will PRT
‘Yes, that will be so.’

The (b)-examples in (633) also unambiguously show that epistemic modal verbs are °monadic; they take just a single propositional argument. This implies that the °nominative subject *Marie* in (629) cannot be selected by the modal verb. This, in turn, implies that this noun phrase is licensed by the main verb embedded under the modal verb and that it is subsequently promoted to the subject position of the entire clause. This so-called SUBJECT RAISING analysis is schematically given in (634) for the verb *moeten*; we will see in Subsection B that epistemic modal verbs crucially differ in this respect from modal verbs expressing dynamic and directed (but not non-directed) deontic modality.

(634) • Epistemic modality (Subject Raising)
a. —— moet $[_{\text{VP}}$ Marie nu wel thuis zijn]
b. Marie$_i$ moet $[_{\text{VP}}$ t_i nu wel thuis zijn].

That the nominative subject of the clause is selected by the embedded main verb is also supported by the fact that the subject of the clause can be part of an idiomatic construction such as (635a). If the subject was selected by the modal verb, the availability of this idiomatic reading would be quite surprising because an idiom is stored as a unit in the lexicon.

(635) a. De beer is los.
the boar is loose
'The fat's in the fire.'
b. De beer moet/kan/zal nu wel los zijn.
the boar must/may/will now PRT loose be
'The fat must/may/will be in the fire by now.'

2. Evidential (reported and sensory) modality

Evidentiality does not pertain to the truth of the proposition, but to the evidence that supports it. Palmer (2001; Section 2.2) distinguishes two types of evidence. The first type involves reported evidence, and includes evidence based on second and third-hand reports, hearsay, etc. Dutch does not seem to have special modal verbs to express this type of evidential modality with, perhaps, one exception: the past-tense form of *zullen* 'will' can be used to express that the speaker does not commit himself to the proposition but bases himself on some source of the information, which generally remains unidentified but which can, in principle, be made explicit by means of an adverbial *volgens*-PP.

(636) a. Hij zou steenrijk zijn.
he would immensely.rich be
'He's said to be immensely rich.'
b. Hij zou volgens Peter/welingelichte kringen steenrijk zijn.
he would according.to Peter/informed circles immensely.rich be
'According to Peter/informed circles, he's immensely rich.'

Note in passing that the options in Dutch are more limited than in German, which can use the present as well as the past tense of the verb *sollen* and also of the verb *wollen* 'will' to express evidential modality of this type; see Palmer (2001; Section 2.2.2) and Erb (2001:82) for discussion and examples. It should also be stated that the fact that Dutch does not have specialized modal verbs to express evidentiality of this kind does not mean that it has no means to express it: verbs of communication like *zeggen* 'to say' are, of course, capable of performing this function.

Palmer refers to the second type of evidential modality as sensory, and this pertains to evidence obtained by means of the senses. It may be claimed that this type of modality is expressed in Dutch by means of the perception verbs when they take a bare infinitival clause. Example (637a), for example, expresses that the speaker has direct, auditory, evidence that the proposition *Jan vertrok* 'Jan has left' is true. In this respect (637a) crucially differs from (637b), which indicates that the speaker does not have any direct evidence to support the truth of the proposition *Jan vertrok* 'Jan has left'; he may have heard something from which he concludes that the proposition is true, or he may have been told so by some other person.

(637) a. Ik hoorde [Jan vertrekken].
I heard Jan leave
b. Ik hoorde [dat Jan vertrok].
I heard that Jan left

There are several facts supporting the idea that perception verbs may function as markers of evidential/sensory modality. First, perception verbs are like the unequivocal modals *moeten, kunnen and zullen* in that they take bare infinitivals as their complement, albeit that these infinitival complements may contain an (optional) overt subject. Secondly, it seems that the verbs *zien* 'to see' and *horen* 'to hear' are the ones that most frequently occur with a bare infinitival, which is in line with the fact that, cross-linguistically, sensory evidential modality is also most frequently expressed by markers pertaining to visual and auditory stimuli. Thirdly, it may account for the acceptability of examples like (638b&c) with the verb *vinden* 'consider': like constructions with perception verbs, the *vinden*-construction takes a bare infinitival complement typically referring to an eventuality that eventuality that can be perceived by means of the senses, while expressing further that the truth assignment to the proposition denoted by the bare infinitival clause is based on the (subjective) sensory perception of the subject of the clause.

(638) a. Ik vind [Els goed dansen en zingen], (maar hij niet). [vision/hearing]
I consider Els well dance and sing but he not
'I think that Els is dancing and singing well (but he doesn't).'
b. Els vindt [die soep lekker ruiken/smaken] (maar ik niet). [smell/taste]
Els considers that soup nicely smell/taste but I not
'Els thinks that the soup smells/tastes nice (but I don't).'
c. Ik vind [die trui naar prikken] (maar hij niet). [touch]
I consider that sweater unpleasantly prickle but he not
'I think that this sweater is unpleasantly prickly (but he doesn't).'

By assuming that Dutch has a set of modal verbs expressing sensory evidentiality, we avoid the need of postulating a separate class of verbs consisting of the verb *vinden* 'to consider' only which has properties virtually identical to those of the class of perception verbs (one noticeable difference being that the subject of the bare infinitival complement clause of *vinden* cannot be omitted). However, given that the perception verbs are normally not treated as a subtype of modal verbs, we will not pursue this option here, but discuss them in their own right in Section 5.2.3.3.

Finally, it is to be noted that Dutch verbs like *blijken* 'to turn out', *lijken* 'to appear', and *schijnen* 'to seem' in (639) are evidential in the sense that they can be used to indicate whether there is direct evidence in favor of the truth of the proposition, whether there are identifiable individuals that can be held responsible for the truth of the proposition, or whether we are dealing with hearsay/rumors; see

Vliegen (2011). Since *blijken*, *lijken* and *schijnen* do not select bare infinitival complements they are not discussed here but in Section 5.2.2.2.

(639) a. Uit deze feiten blijkt [dat Jan de dader is]. [direct evidence]
from these facts turns.out that Jan the perpetrator is
'These facts clearly show that Jan is the perpetrator.'
b. Het lijkt mij/haar [dat Jan de dader is]. [identifiable source]
it appears me/her that Jan the perpetrator is
'It appears to the me/her that Jan is the perpetrator.'
c. Het schijnt [dat Jan de dader is]. [hearsay/rumors]
it seems that Jan the perpetrator is
'It seems that Jan is the perpetrator.'

B. Event modality

Event modality is concerned with the moving force involved in the (potential) realization of the eventuality denoted by the lexical projection of the main verb embedded under the modal verb. The moving force may be *internal* to the person referred to by the subject of the full construction (ability or volition): Palmer refers to this type as dynamic modality, but a more telling name might be dispositional modality. The moving force may also be *external* to the person referred to by the subject of the full construction (obligation or permission), in which case we are dealing with deontic modality. In both these cases the moving force is directed towards the subject of the sentence. Klooster (1986) and Barbiers (1995) have shown, however, that there is a second type of deontic modality in which the moving force is not directed towards the subject at all; in order to distinguish these two types of deontic modality we will make a distinction between directed and non-directed deontic modality, where (NON-)DIRECTED should be interpreted as "(not) directed towards the subject of the sentence". We thus distinguish the three types of event modality illustrated in (640), which will be discussed in some more detail in the following subsections.

(640) a. Jan wil Marie bezoeken. [dynamic/dispositional modality]
Jan wants Marie visit
'Jan wants to visit Marie.'
b. Jan moet van zijn vader het hek verven. [directed deontic]
Jan has.to of his father the gate pain
'Jan has to paint the gate; his father asked him to do so.'
c. Jan moet meer hulp krijgen. [non-directed deontic]
Jan has.to more help get
'Jan has to receive more help.'

1. Dynamic/dispositional modality

Dynamic/dispositional modality describes some moving force internal to the nominative subject of the construction as a whole that favors the realization of the potential event denoted by the main verb embedded under the modal verb. Two verbs that are prototypically used in this modal function are *kunnen* 'to be able' and *willen* 'to want', which express ability and volition, respectively.

(641) a. Jan kan dat boek lezen. [ability]
Jan is.able that book read
'Jan can read that book'
b. Jan wil dat boek lezen. [volition]
Jan wants that book read
'Jan wants to read that book.'

That the modal verbs in (641) function as main verbs is quite clear, as we have seen earlier, from the fact illustrated in (642) that the bare infinitival clause can be pronominalized. These examples also show that the subject of the sentence is not part of the infinitival clause, which shows that dynamic/dispositional verbs differ from epistemic modal verbs in that they are not monadic but dyadic predicates.

(642) a. Jan kan dat.
Jan is.able that
'Jan can do that.'
b. Jan wil dat.
Jan wants that
'Jan wants to do that.'

In order to account for the fact that the nominative subject of the construction as a whole is also construed as the subject of the infinitival clause, Klooster (1986) proposed a °control analysis of constructions of this type: the external argument of the modal verb functions as the controller of the implied subject °PRO of the embedded infinitival clause. This is schematically represented in (643), in which coindexing indicates coreference.

(643) • Dynamic/dispositional modality (Control)
a. Jan_i kan [PRO_i dat boek lezen].
Jan is.able that book read
b. Jan_i wil [PRO_i dat boek lezen].
Jan wants that book read

The modal verbs *moeten* 'must' and *zullen* 'will' can also be used to express dynamic/dispositional modality, in which case they express, respectively, a strong will/desire and determination. The primeless examples in (644) show that this use of *moeten* and *zullen* is rather special in that it normally requires the modal verb to have emphatic accent.

(644) a. Jan MOET dat boek lezen. [strong will/desire]
Jan must that book read
'Jan definitely must read that book.'
b. Jan ZAL dat boek lezen. [determination]
Jan will that book read
'Jan will read that book (nothing will stop him).'

The examples in (645) show that this use of *moeten* and *zullen* is also special in that pronominalization of the bare infinitival clause gives rise to a less felicitous result. The degraded status of (645a) under the intended reading can perhaps be accounted for by appealing to the fact that the directed deontic (obligation) reading of this example is simply the more prominent one, but a similar account is not available for the degraded status of (645b).

(645) a. #Jan moet dat.
Jan must that
b. *?Jan zal dat.
Jan will that

The modal verb *zullen* often occurs in coordinated structures with the other dynamic/dispositional modal verbs in order to express determination in addition to ability, volition, desire, etc; especially the combination *moet en zal* is very frequent, and has the fixed meaning “nothing will stop me from ...”. All examples in (646) are taken from the internet and require the modal verbs to have emphatic accent. Pronominalization of the bare infinitival clause is not illustrated here but again gives degraded results in these cases.

(646) a. Ik KAN en ZAL doen wat ik wil.
I am.able and will do whatever I like
‘I’m able to do whatever I want, and I’ll definitely do so.’
b. Amerika WIL en ZAL Julian Assange veroordelen.
US wants and will Julian Assange convict
‘The US wants to convict Julian Assange, and will definitely do so.’
c. Ik MOET en ZAL goed leren zingen.
I must and will well learn sing
‘Nothing will stop me from learning to sing well.’

The modal verb *mogen*, which is normally used as a deontic verb, can occasionally be found with a dynamic/dispositional function as well if it is accompanied by the adverbial phrase *graag* ‘gladly’.

(647) Ik mag graag wandelen.
I like.to gladly walk
‘I like to walk.’

2. *Directed deontic modality*

Directed deontic modality differs from dynamic/dispositional modality in that the moving force is not internal, but external to the subject of the sentence. Two verbs that are prototypically used with this modal function are *moeten* ‘to be obliged’ and *mogen* ‘to be allowed’, which express obligation and permission, respectively. Note that when the external force is some person in authority, it can be made explicit by means of an adverbial *van*-PP.

(648) a. Jan moet dat boek lezen van zijn vader. [obligation]
Jan must that book read of his father
‘Jan has to read that book (his father asked him to do so).’
b. Jan mag dat boek lezen van zijn vader. [permission]
Jan may that book read of his father
‘Jan may read that book (he has his father’s permission).’

The external force may also be impersonal (laws and other regulations), in which case the force can be expressed by means of a *volgens*-PP.

(649) a. Volgens de regels moet de voorzitter de vergadering openen.
according.to the rules must the chairman the meeting open
'According to the rules, the chairman must open the meeting.'
b. Volgens gewoonte mag de vader de bruid weggeven.
according.to custom may the father the bride away-give
'According to custom, the father may give away the bride.'

That the modal verbs in (648) function as main verbs is clear from the fact that the bare infinitival clause lends itself to pronominalization quite easily. The examples in (650) show that the subject of the sentence is not part of the infinitival clause, from which we may conclude that modal verbs expressing directed deontic modality are similar to modal verbs expressing dynamic/dispositional modality in that they are not monadic but dyadic predicates.

(650) a. Jan moet dat van zijn vader.
Jan must that of his father
'Jan has to do that; his father asked him to do so.'
b. Jan mag dat van zijn vader.
Jan may that of his father
'Jan may do that; he has his father's permission.'

Pronominalization is perhaps somewhat marked in the case of examples such as (649); it seems preferred to substitute the verb phrase *doen* + *dat* 'to do that' for the infinitival clause. It should be noted, however, that negative clauses with the deontic modal *mogen* 'to be allowed' are very normal without the verb *doen*: *Volgens de regels mag hij dat niet (doen)* 'According to the rules, he is not allowed to do that'.

(651) a. Volgens de regels moet de voorzitter dat $^{?}$(doen).
according.to the rules must the chairman that do
'According to the rules the chairman must do that.'
b. Volgens gewoonte mag de vader dat $^{?}$(doen).
according.to custom may the father that do
'According to custom the father may do that.'

The fact that the nominative subject of the construction as a whole is not affected by pronominalization indicates that directed deontic constructions are like dynamic/dispositional modal constructions in that they are amenable to a control analysis. This is shown in (652).

(652) • Directed deontic modality (Control)
a. Jan$_i$ moet [PRO$_i$ dat boek lezen].
Jan must that book read
b. Jan$_i$ mag [PRO$_i$ dat boek lezen].
Jan may that book read

The verb *zullen* can also be used to express directed deontic modality if the speaker wants to express that he is committed to the actualization of the proposition denoted by the lexical projection of the main verb; by using an example such as (653) the speaker indicates that he has the authority to instruct the technical department and is hence able to promise that everything will be fixed. For the same reason, examples such as (653b) are felt as rude (or even as a threat) given that the speaker indicates that he has the authority to boss the addressee about (and to take certain measures if he does not obey).

(653) a. Onze technische dienst zal alles in orde brengen.
our technical department will everything in order bring
'Our technical department will fix everything.'
b. Je zal vanmiddag alles in orde brengen.
you will this.afternoon everything in order bring
'You shall fix everything this afternoon.'

Although the verb *willen* 'want' cannot be used to express directed deontic modality, Barbiers (1995) suggests that the verb *kunnen* 'can' in examples such as (654a) is able to do so, and indeed examples like these can be construed as a speech act of granting permission. It is, however, not so clear whether we are really dealing with directed deontic modality, since Palmer (2001:77) notes that examples such as (654b) may simply express that there is nothing to stop Jan from leaving and suggests that we are dealing with dynamic/dispositional (ability) modality here. A similar interpretation may be possible for (654a) if we assume that the speaker indicates by using this sentence that in his view that all preconditions for Jan's leaving are fulfilled.

(654) a. Jan kan vertrekken.
Jan may leave
'Jan is able to leave (the speaker lifts any prohibition).'
b. Jan kan ontsnappen.
Jan can escape
'Jan is able to escape (there is no external impediment).'

The discussion of the examples in (654) shows that it is not always easy to determine the type of modality that we are dealing with, but we will see in the next subsection that there may be reason for assuming that *kunnen* can indeed be used as a directed deontic modal.

3. Non-Directed deontic modality

This subsection discusses a type of modal construction that was first discussed in Klooster (1986) and called non-directed modality in Barbiers (1995). In order to introduce this type of event modality, we will begin with a brief digression on passivization of clauses expressing event modality. First, consider example (655a), which expresses dynamic/dispositional modality: the agent *het meisje* 'the girl' has the wish to stroke the cat. The passive counterpart of this example in (655b) likewise expresses dynamic/dispositional modality, although now it is the patient *de* *kat* 'the cat' that wants to be stroked. In both cases, however, the moving force is internal to the nominative subject of the construction as a whole.

(655) a. Het meisje wil de kat aaien. [subject-oriented modality]
the girl wants the cat stroke
'The girl wants to stroke the cat.'
b. De kat wil door het meisje geaaid worden. [subject-oriented modality]
the cat wants by the girl stroked be
'The cat wants to be stroked by the girl.'

That we are dealing with regular dynamic/dispositional modality in the passive construction in (655b) is also supported by the fact illustrated in (656) that the modal verb remains dyadic under passivization; pronominalization of the infinitival clauses does not affect the nominative subject regardless of the voice of the embedded clause. This shows that the nominative subject cannot originate in the embedded infinitival clause but must be selected by the modal verb itself; we are dealing with control structures in both the active and the passive case.

(656) a. Het meisje wil dat. [modal is dyadic]
the girl wants that
b. De kat wil dat. [modal is dyadic]
the cat wants that

That the nominative subject of the construction as a whole is selected by *willen* is also supported by the examples in (657), which show that the subject of the passive construction must have volition. If not, the construction is semantically incoherent.

(657) a. Jan wil het hek verven.
Jan wants the gate paint
'Jan wants to pain the gate.'
b. $^{\$}$Het hek wil geverfd worden.
the gate wants painted be

Things are quite different in the case of directed deontic constructions. This is immediately clear from the fact that examples such as (658a) can readily be passivized, with the result that the nominative subject of the passive construction is an inanimate entity without control over the proposition expressed by the infinitival clause; the fact that (658b) is nevertheless semantically coherent shows that the obligation expressed by the modal verb *moeten* cannot be directed towards the subject of the clause but must be directed towards the implicit agent of the infinitival verb *verven* 'to paint'.

(658) a. Jan moet het hek verven van zijn vader. [subject-oriented modality]
Jan must the gate paint of his father
'Jan must paint the gate (his father asked him to do that).'
b. Het hek moet geverfd worden van zijn vader. [no subject-oriented modality]
the gate must painted be of his father
'The gate must be painted (his father requested it).'

Barbiers (1995) refers to examples in (658a) and (658b) as, respectively, directed and non-directed deontic modality, where (NON-)DIRECTED should be interpreted as “(not) directed towards the subject of the sentence”. The examples in (659) show that the active and passive constructions in (658) differ not only with respect to the directional force of the modal, but also as regards pronominalization of the embedded infinitival clause; whereas the nominative subject of the active construction is not affected by pronominalization, the nominative subject of the passive construction is.

(659) a. Jan moet dat van zijn vader. [modal is dyadic]
Jan must that of his father
‘Jan must do that (his father asked him to do that).’
b. Dat moet van zijn vader. [modal is monadic]
that must of his father
‘That gate must be done (his father requested it).’

As is already indicated by the comments in straight brackets in (656) and (659), dynamic/dispositional and deontic constructions differ with respect to the origin of the nominative subject of the construction as a whole. In dynamic/dispositional constructions the subject originates as an argument of the modal verb, regardless of whether the embedded infinitival clause is in the active or the passive voice; the schematic representations in (660a&a′) show that we are dealing with control structures in both cases. In deontic constructions, on the other hand, the origin of the nominative subject depends on the voice of the embedded infinitival clause: if the infinitival clause is active, the subject is an argument of the modal verb, but if it is passive, the subject originates as an internal argument of the infinitive; the schematic representations in (660b&b′) show that we are dealing with a control structure in the former and with a subject raising structure in the latter case. In short, non-directed deontic modality is special in that it patterns with epistemic modality in requiring a subject raising analysis.

(660) a. NP$_{\mathrm{i}}$ V$_{\mathrm{dispositional}}$ [... PRO$_{\mathrm{i}}$ ... V$_{\mathrm{inf}}$] [dynamic/dispositional]
a′. NP$_{\mathrm{i}}$ V$_{\mathrm{dispositional}}$ [... PRO$_{\mathrm{i}}$ ... V$_{\mathrm{part}}$ worden] [dynamic/dispositional]
b. NP$_{\mathrm{i}}$ V$_{\mathrm{deontic}}$ [... PRO$_{\mathrm{i}}$ V$_{\mathrm{inf}}$] [directed deontic]
b′. NP$_{\mathrm{i}}$ V$_{\mathrm{deontic}}$ [... t_{i} ... V$_{\mathrm{part}}$ worden] [non-directed deontic]

The discussion above provides us with a test to answer the question raised at the end of the previous subsection as to whether the verb *kunnen* can be used to express directed deontic modality. If so, we expect that example (661a) can be passivized, and that the resulting construction need not involve subject-oriented modality. This seems to be borne out, as example (661b) must be interpreted in such a way that the ability is ascribed to the implicit agent of the infinitival verb, and not to the inanimate subject *dat boek* ‘that book’. That (661a) and (661b) are, respectively, directed and non-directed deontic is also supported by the fact that pronominalization of the infinitival verbs affects the nominative subject of the construction as a whole in the latter case only; this shows that *kunnen* is dyadic in (661a) but monadic in (661b).

(661) a. Jan kan dat boek nu ophalen. [subject-oriented modality]
Jan can that book now prt.-fetch
‘Jan may fetch that book now (there is nothing to prevent it).’
a′. Jan kan dat nu / #Dat kan nu. [verb is dyadic]
Jan can that now / that can now
b. Dat boek kan nu opgehaald worden. [no subject-oriented modality]
that book can now prt.-fetched be
‘That book can now be fetched (there is nothing to prevent it).’
b′. Dat kan nu /*Dat boek kan dat nu. [verb is monadic]
that can now / that book can that now

The fact that the moving force in non-directed deontic constructions is directed towards some entity other than the nominative subject also means that this type of modality differs from the other types of event modality in that the nominative subject need not be able to control the eventuality expressed by the infinitival clause. The examples in (662) show that, as a result, the infinitival clause can be a copular construction, or headed by an °unaccusative/°undative verb; all examples are taken from the internet.

(662) a. Gebruik van geweld moet proportioneel zijn. [copular]
use of violence must proportional be
‘Use of force must be proportional.’
a′. Die boete mag van mij wel wat hoger zijn.
that fine may of me prt a.bit higher be
‘As far as I’m concerned, that fine can be a bit higher.’
b. Ingevroren vlees moet langzaam ontdooien. [unaccusative]
frozen meat must slowly defrost
‘Frozen meat must be defrosted slowly.’
b′. Stoofvlees mag langzaam sudderen (zonder dat u ernaar om kijkt).
stew may slowly simmer without that you to.it after look
‘Stew may simmer slowly (without you having to look after it).’
c. Het interieur moet nog een verfje krijgen. [undative]
the interior must still a layer.of.paint get
‘The interior must still be painted.’
c′. De muziek mag nooit de overhand krijgen (of de kijker irriteren).
the music may never the upper.hand get or the viewer annoy
‘The music should never get the upper hand (or annoy the viewer).’

C. A binary feature analysis of modal verbs

The previous subsections discussed several types of modality that can be expressed by means of modal verbs taking a bare infinitival complement. Putting aside the option of analyzing perception verbs as verbs expressing evidential (sensory) modality, we concluded that there are four basic verb types, expressing, respectively, epistemic, dynamic/dispositional, directed deontic and non-directed deontic modality. Table (663) aims at providing a classification of these four types of modality by referring to the type of moving force involved. The feature [±EXTERNAL] indicates whether or not there is an external moving force; if not, the moving force may be internal or be absent. The feature [±SUBJECT-ORIENTED], which is adopted from Barbiers (1995), indicates whether the moving force is directed towards the nominative subject of the construction as a whole; if not, the moving force may be directed towards some other (implicit) entity or be absent.

(663) Moving force and modality

	[–SUBJECT-ORIENTED]	[+SUBJECT-ORIENTED]
[–EXTERNAL]	epistemic	dynamic/dispositional
[+EXTERNAL]	non-directed deontic	directed deontic

The semantic classification in (663) is supported by syntactic/semantic evidence. First, the previous subsections have already shown that the feature [±SUBJECT-ORIENTED] affects the °adicity of the modal verb, and thus determines whether we are dealing with control or subject raising constructions: epistemic and non-directed modal verbs are monadic and trigger subject raising; dynamic/dispositional and directed deontic modal verbs are dyadic and involve control. Second, the feature [±EXTERNAL] reflects the fact that the two types of deontic modal verb license an adverbial *van*- or *volgens*-phrase which indicates the source of the moving force; such phrases are not possible (with the same meaning) in the case of epistemic and dynamic/dispositional modal verbs. Finally, the union of the [+SUBJECT-ORIENTED] and [+EXTERNAL] modal verbs also forms a natural class in the sense that they normally involve a polarity transition (Barbiers 1995): the truth value of the proposition expressed by the infinitival clause can potentially be changed from false to true. This is illustrated in the examples in (664) which all involve the adverbial phrase of time *nu* 'now'. The epistemic constructions in (664a) do not involve a polarity transition; they express the speaker's evaluation of the likelihood that the proposition expressed by the infinitival clause is true at the moment of speech. The remaining examples, on the other hand, all strongly suggest a truth transition: the proposition expressed by the infinitival clause is false at the moment of speech, but can be made true in the non-actualized part of the present-tense interval.

(664) a. Jan moet/kan/zal nu het boek wel lezen. [epistemic]
Jan must/may/will now the book prt read
'Jan must/may/will read the book now.'
b. Jan moet/kan/wil het boek nu lezen. [dynamic/dispositional]
Jan must/is.able/wants the book now read
'Jan must/can/wants to read the book now.'
c. Jan moet/mag het boek nu lezen. [directed deontic]
Jan must/is.allowed the book now read
'Jan must/is allowed to read the book now.'
d. Dat boek moet/mag nu gelezen worden. [non-directed deontic]
that book must/is.allowed now read be
'The book must/may be read now.'

This difference also accounts for the contrast between the examples in (665); the adverbial phrase *gisteren* 'yesterday' situates the eventuality expressed by the infinitival clause in the actualized part of the present-tense interval, which causes the perfect-tense construction in (665a) to be interpreted as epistemically only. The adverbial phrase *morgen* ‘tomorrow’ in (665b) situates the eventuality expressed by the infinitival clause in the non-actualized part of the present-tense interval, which causes the example to be four-ways ambiguous (where the preferred reading depends on contextual factors).

(665) a. Jan moet dat boek gisteren hebben gelezen. [epistemic]
Jan must that book yesterday have read
‘Jan must have read that book yesterday.’
b. Jan moet dat boek morgen hebben gelezen. [four-ways ambiguous]
Jan must that book tomorrow have read
‘Jan must have read that book by tomorrow.’

For completeness’ sake, note that Barbiers characterized the different modal types by appealing directly to the binary feature [±POLARITY TRANSITION]. This seems less suited given that non-epistemic modal verbs only imply polarity transitions if the embedded verb is non-stative; cf. Erb (2001:81ff.). A speaker can readily express his assessment of Marie’s dancing skills by means of (666a) at the very moment that he is watching her dancing. Similarly, the context of (666b) makes clear that the speaker is already waiting at the moment he utters the sentence *Ik moet hier wachten*. An example such as (666c) can readily be used when the speaker gives the addressee information about the switches of a specific machine. The fact that the occurrence of a polarity transition also depends on the infinitive makes it less suitable as a defining property of the basic modal types we have distinguished.

(666) a. Marie kan goed dansen. [dynamic/dispositional]
Marie can well dance
‘Marie dances well.’
b. Waarom sta je daar? Ik moet hier wachten. [directed deontic]
why stand you there I must here wait
‘What are you standing here for? I’m supposed to wait here.’
c. Deze schakelaar moet altijd zo staan. [non-directed deontic]
this switch must always like.that stand
‘This switch must always be in this position.’

5.2.3.3. Perception verbs

Perception verbs like *zien* ‘to see’ and *horen* ‘to hear’ can select a finite or a bare infinitival complement clause. Examples showing this are given in (667), in which the complement clauses are given in italics. Subsection I starts by pointing out some differences in meaning between the two types of construction.

(667) a. Jan zag *dat Marie/zij aan haar dissertatie werkte*. [finite]
Jan saw that Marie/she on her dissertation worked
‘Jan saw that Marie/she was working on her PhD thesis.’
a′. Jan zag *Marie/haar aan haar dissertatie werken*. [bare infinitival]
Jan saw Marie/her on her dissertation work
‘Jan saw Marie/her working on her PhD thesis.’

b. Marie hoorde *dat Peter/hij in de keuken werkte.* [finite]
Marie heard that Peter/he in the kitchen worked
‘Marie heard that Peter/he was working in the kitchen.’

b′. Marie hoorde *Peter/hem in de keuken werken.* [bare infinitival]
Marie heard Peter/him in the kitchen work
‘Marie heard Peter/him working in the kitchen.’

In some grammars, the perception verbs are taken to be non-main verbs when they select a bare infinitival clause; Subsection II will discuss our reasons for assuming that they are main verbs, just like when they take a finite clause. The primed examples in (667) are different from most other cases in which a main verb takes a bare infinitival clause in that the subject of the infinitival clause appears as the accusative object of the construction as a whole, which is known as the *accusativus-cum-infinitivo* (AcI) effect. Subsection III will show that this fact makes an analysis of the phrases headed by the bare infinitive as BARE-INF nominalizations very unlikely since the subjects of the input verb of such nominalizations are normally left implicit or expressed by means of a *van*- or a *door*-PP; they are never expressed by means of a noun phrase. However, since example (668) shows that the subject of the bare infinitival clause can be omitted under certain conditions as well, we still have to appeal to the tests in Table (599) from Section 5.2.3 in order to establish whether we are dealing with verbal or nominal complements in cases like these.

(668) Ik hoorde (*de kinderen*) *een liedje zingen.*
I heard the children a song sing
‘I heard (the children) sing a song.’

The discussion continues in Subsection IV with a more detailed discussion of the behavior and distribution of the subject of the bare infinitival verb as well as the AcI-effect. Subsection V concludes the discussion with a number of smaller remarks.

I. Meaning: direct involuntary sensory perception

Example (667) above shows that perception verbs like *zien* ‘to see’ and *horen* ‘to hear’ can select finite or bare infinitival complement clauses. This subsection discusses an important semantic difference between the two types of clauses: whereas constructions with a bare infinitival complement clause normally imply that the subject of the perception verb is a witness of the °eventuality denoted by the infinitival clause, constructions with a finite complement clause leave this issue open.

Section 5.1.2.1, sub II, has shown that we should distinguish two groups of perception verbs: verbs of involuntary and verbs of voluntary perception. The difference is especially clear in the domain of vision and hearing: *zien* ‘to see’ and *horen* ‘to hear’ are used for involuntary perception, whereas *kijken* ‘to look’ and *luisteren* ‘to listen’ are used for the active use of vision and hearing. The two verb types differ markedly in how they handle complementation by means of a finite clause; whereas verbs of involuntary perception normally take declarative finite clauses as their complement, verbs of voluntary perception normally take interrogative clauses. Since Section 5.1.2.1, sub II, has also shown that the verbs *proeven* ‘to taste’, *ruiken* ‘to smell’ and *voelen* ‘to feel’ can be used in both contexts, we may conclude that these verbs are homophonous.

(669) a. Marie zag/*keek [dat de zon opkwam].
Marie saw/looked that the sun prt.-rose
'Marie saw that the sun was rising.'
a′. Marie keek/*zag [of de zon opkwam].
Marie looked/saw whether the sun prt.-rose
'Marie looked whether the sun was rising.'
b. Jan hoorde/*luisterde [dat de deur klapperde].
Jan heard/listened that the door rattle
'Jan heard that the door was rattling.'
b′. Jan luisterde/*hoorde [of de deur klapperde].
Jan listened/heard whether the door rattle
'Jan listened whether the door was rattling.'

The examples in (670) show that the two types of perception verb differ in yet another way: whereas the verbs of involuntary perception may occur in °AcI-constructions, the verbs of voluntary perception cannot. For convenience, the bare infinitival clauses are given in straight brackets and their subjects in italics; in order to avoid confusion it should be noted that the brackets are used here to indicate that the strings form semantic units and are not intended to imply that these strings are also syntactic units: we will see in Subsection III that these strings may be discontinuous if the finite verb is in clause-final position.

(670) a. Marie zag/*keek [*de zon* opkomen].
Marie saw/looked the sun prt.-rise
'Marie saw the sun rise.'
b. Jan hoorde/*luisterde [*de deur* klapperen].
Jan heard/listened the door rattle
'Jan heard the door rattle.'

The primeless acceptable examples in (669) differ semantically from the acceptable ones in (670) in that only the latter imply that the subject of the perception verb actually witnessed the eventuality expressed by the infinitival clause. This can be demonstrated by means of the contrast in (671): (671b) is awkward as it is incompatible with our knowledge of the world, since we know that the rising of the sun cannot be perceived auditorily; (671a), on the other hand, is perfectly acceptable because Marie may have had some *indirect* auditory evidence for assuming that the sun was rising—she may have been told so or she may have heard that the birds started singing.

(671) a. Marie hoorde [dat de zon opkwam].
Marie heard that the sun prt.-rose
'Marie heard that the sun was rising.'
b. $Marie hoorde [de zon opkomen].
Marie heard the sun prt.-rise

Since the AcI-constructions express that the subjects of the perception verbs have direct sensory evidence for assuming that the proposition expressed by the bare infinitival clause is true, it is tempting to interpret AcI-constructions of this type as evidential sensory modal constructions in the sense of Palmer's (2001) classification of modal constructions, which was introduced in Section 5.2.3.2, sub III. A semantic argument in favor of this might be built on Palmer's claim that cross-linguistically there are normally no more than three different markers for expressing sensory evidentiality: one for seeing, one for hearing, and one functioning as a multi-purpose marker. This seems consistent with the fact that especially the verbs *proeven* 'to taste' and *ruiken* 'to smell' are rare in Dutch AcI-constructions; although the primeless examples in (672) are perfectly acceptable, their AcI-counterparts are marked and certainly not very frequent; see Haeseryn et al. (1997: 1014) for the same observation.

(672) a. Ik proef [dat het snoepje van smaak verandert].
I taste that the candy of flavor changes
'I'm tasting that the candy is changing its flavor.'
a′. $^{??}$Ik proef [het snoepje van smaak veranderen].
I taste the candy of flavor change
b. Ik ruik [dat de aardappelen aanbranden].
I smell that the potatoes prt-burn
'I smell that the potatoes are getting burnt.'
b′. $^{??}$Ik ruik [de aardappelen aanbranden].
I smell the potatoes prt-burn

AcI-constructions with the perception *voelen* 'to feel' seem to have an intermediate status; although they are not very frequent, examples such as (673) are impeccable and are easy to find on the internet.

(673) a. Ik voel [mijn vingers tintelen].
I feel my fingers tingle
b. Ik voelde [het glas uit mijn vingers glijden].
I felt the glass from my fingers slip
'I felt the glass slip from my fingers.'

While examples with verbs *proeven* 'to taste', *ruiken* 'to smell' and *voelen* 'to feel' are not common, Dutch seems to have a multi-purpose verb that may be found in AcI-constructions to express sensory perception, namely the verb *vinden* 'to think/consider'. The examples in (674) show that this verb can be used in the context of all types of sensory stimuli. Observe that *vinden* differs from the perception verbs in that it normally also expresses some sort of subjective evaluation by the subject of *vinden*; Marie has a high opinion of Jan's dancing skills, she likes the taste/smell of the soup, but dislikes the feel of the sweater on her skin.

(674) a. Marie vindt [Jan goed dansen en zingen]. [vision/hearing]
Marie thinks Jan well dance and sing
'Marie thinks that Jan is dancing and singing well.'
b. Marie vindt [die soep lekker ruiken/smaken]. [smell/taste]
Marie thinks that soup nice smell/taste
'Marie thinks that the soup smells/taste nice.'
c. Marie vindt [die trui naar prikken]. [touch]
Marie thinks that sweater unpleasantly prickle
'Marie thinks that that sweater is unpleasantly itchy.'

It is important in this connection to stress that eventualities that cannot be directly perceived by means of the senses cannot be used in AcI-constructions with *vinden*. This is illustrated in the examples in (675); since the truth of the states of Peter knowing a great deal and Jan being a nice person cannot be directly perceived by the senses, the examples in (675) are unsuitable. We added example (675b′) to show that the requirement that the eventuality be directly perceived by the senses holds for bare infinitival constructions only; if *vinden* takes a °complementive, the resulting construction simply expresses a subjective evaluation.

(675) a. *Marie vindt [Peter veel weten].
Marie thinks Peter much know
Intended reading ‘Marie thinks that Peter knows much.’
b. *Marie vindt [Peter aardig zijn].
Marie thinks Peter kind be
Intended reading: ‘Marie considers Peter to be kind.’
b′. Marie vindt [Peter intelligent/aardig].
Marie considers Peter intelligent/kind

Section 5.2.3.2, sub III, has shown that many modal verbs selecting a bare infinitival complement clause can be used in several modal functions. If verbs of involuntary perception are indeed modal in nature, we expect to see something similar with these verbs; this seems to be confirmed by the perception verb *zien* ‘to see’. A special interpretation of the infinitival construction containing *zien* ‘to see’ is what Van der Leek (1988) refers to as the illusory reading: example (676a) does not express that Jan is observing some eventuality but that he surmises that Peter will go to London soon; along the same lines, example (676b) expresses that Jan does not expect that Els will leave soon. It thus seems that in these uses the verb *zien* ‘to see’ expresses some kind of epistemic modality.

(676) a. Jan ziet Peter binnenkort naar Londen gaan.
Jan sees Peter soon to London go
‘Jan envisages that Peter will go to London soon.’
b. Jan ziet Els niet snel vertrekken.
Jan sees Els not soon leave
‘Jan can’t quite see Els leaving soon.’

Note in passing that it is not clear whether the negation in (676b) is part of the infinitival or the °matrix clause given that subject of the embedded infinitival clause, the noun phrase *Els*, may have been scrambled across it. In principle, pronominalization should be able to clarify whether negation can be construed with the perception verb, but unfortunately it seems that (for some as yet unknown reason) pronominalization does not yield a satisfactory result: the example #*Jan ziet dat (niet)* does not readily allow the intended epistemic reading.

II. Perception verbs are main verbs

Based on the assumption that clauses can have at most one main verb, Haeseryn et al. (1997:946-7) claim that perception verbs function as non-main verbs in AcI-constructions. This leads to the conclusion that perception verbs are homophonous:

they are main verbs if they take a noun phrase or a finite clause as their object, but non-main verbs if they take a bare infinitival clause. Given that the core meaning of the perception verbs is similar in all these cases, this conclusion is a little suspicious. Our definition that main verbs are verbs with an argument structure, on the other hand, treats all cases in a uniform way.

First, the examples in (677) show that bare infinitival complement clauses selected by perception verbs can be pronominalized. The standard assumption that (pronominal) noun phrases must be assigned a °thematic role (that is, be semantically licensed) by the verb, in tandem with our claim that non-main verbs are incapable of doing this, leads to the conclusion that perception verbs are also main verbs in AcI-constructions. The coindexing indicates that the pronoun *dat* has the same interpretation as the infinitival clause within brackets.

(677) a. Marie/zij zag [de zon opkomen]$_i$ en Jan/hij zag dat$_i$ ook.
Marie/she saw the sun prt.-rise and Jan/he saw that too
'Marie/she saw the sun rise, and Jan/he saw that too.'
b. Jan/hij hoorde [de deur klapperen]$_i$ en Els/zij hoorde dat$_i$ ook.
Jan/he heard the door rattle and Els/she heard that too
'Jan/he heard the door rattle and Els/she heard that too.'

On top of this, it is clear that the °nominative subjects of the constructions in (677) are not introduced as arguments of the bare infinitives but of the perception verbs. This again shows that perception verbs take arguments, and are therefore main verbs by definition.

III. Perception verbs take bare infinitival complement clauses

Bare infinitives can be used as heads of both bare infinitival clauses and BARE-INF nominalizations. As a result, it is not always possible to tell immediately whether constructions in which a main verb takes a bare infinitival involve nominal or clausal complementation. This subsection argues on the basis of the tests developed in Section 5.2.3.1, repeated here as (678), that perception verbs can actually take bare infinitival complement clauses.

(678) The verbal and nominal use of bare infinitives

		INFINITIVAL CLAUSE	NOMINALIZATION
I	IS PART OF THE VERBAL COMPLEX	+	—
II	PRECEDES/FOLLOWS THE GOVERNING VERB	normally follows	precedes
III	TRIGGERS IPP-EFFECT	+	—
IV	ALLOWS FOCUS MOVEMENT	—	+
V	MAY FOLLOW NEGATIVE ADVERB *NIET* 'NOT'	+	—
VI	CAN BE PRECEDED BY THE ARTICLE *GEEN* 'NO'	—	+

We can distinguish two different cases, which will be discussed in two separate subsections: cases such as (679a) in which the subject of the bare infinitival is expressed by means of an accusative noun phrase and cases such as (679b) in which the subject is left implicit.

(679) a. Ik hoorde *de kinderen een liedje zingen*.
I heard the children a song sing
‘I heard the children sing a song.’
b. Ik hoorde *een liedje zingen*.
I heard a song sing

A. Phrases in which the subject of the bare infinitival is expressed

An overtly expressed subject of the bare infinitive makes it very unlikely that we are dealing with a BARE-INF nominalization. The reason is that in nominalizations the subject of the input verb is never expressed by means of a prenominal noun phrase: it is either left implicit or it is expressed by a postnominal *van*- or *door*-PP. We illustrate this in (680) by means of nominalizations of an intransitive, a transitive and an unaccusative verb. Note that we used DET-INF nominalizations in the primeless examples because BARE-INF nominalizations greatly favor their nominal argument in prenominal position; we refer the reader to section N1.3.1.2.3 for a detailed discussion of the position and form of the arguments of the two types of nominalization.

(680) a. [Het lachen (van kinderen)] klinkt vrolijk. [intransitive]
the laughing of children sounds merrily
‘The laughing of children sounds merry.’
a′. *[(Het) kinderen lachen] klinkt vrolijk.
the children laugh sounds merry
b. [Het dieren verzorgen (door kinderen)] is erg educatief. [transitive]
the animals look.after by children is quite educational
‘Caring for animals by children is highly educational.’
b′. *[(Het) kinderen dieren verzorgen] is erg educatief.
the children animals look.after is quite educational
c. [Het vallen (van bladeren)] gebeurt in de herfst. [unaccusative]
the fall of leaves happens in the autumn
‘The falling of leaves happens in autumn.’
c′. *[(Het) bladeren vallen] gebeurt in de herfst.
the leaves fall happens in the autumn

The crucial thing for our present purpose is that the primed examples in (680) are unacceptable, regardless of whether or not the determiner *het* ‘the’ is present, whereas the AcI-constructions in (681) are fully acceptable.

(681) a. Jan zag [de kinderen lachen].
Jan saw the children laugh
b. Jan zag [de kinderen de dieren verzorgen].
Jan saw the children the animals look.after
‘Jan saw the children care for the animals.’
c. Jan zag [de bladeren vallen].
Jan saw the leaves fall

The fact that the subject of the input verbs of the nominalizations in (680) cannot be expressed by means of a noun phrase in prenominal position makes it very unlikely that the bracketed phrases in (681) are BARE-INF nominalizations; we can safely conclude that we are dealing with bare infinitival complement clauses. That this is the correct analysis is also clear from the fact that the bare infinitivals allow splitting: the bare infinitives preferably follow the perception verbs in clause-final position and are thus normally separated from their nominal arguments, which must precede the clause-final °verb cluster as a whole (test I and II in Table (678)).

(682) a. dat Jan *de kinderen* zag *lachen*.
that Jan the children saw laugh
'that Jan saw the children laugh.'
b. dat Jan *de kinderen de dieren* zag *verzorgen*.
that Jan the children the animals saw look.after
'that Jan saw the children looking after the animals.'
c. dat Jan *de bladeren* zag *vallen*.
that Jan the leaves saw fall
'that Jan saw the leaves fall.'

More support for assuming that we are dealing with bare infinitival complement clauses is that the presence of the bare infinitive triggers the IPP-effect (test III); in perfect-tense constructions such as (683), the perception verbs cannot surface as past participles but must occur in their infinitival form instead. The fact that the bare infinitives cannot precede the perception verb also shows that it is impossible to construe a bare infinitives as the °head of a BARE-INF nominalization (test II); cf. *Jan heeft die film gezien* 'Jan has seen that movie'.

(683) a. Jan heeft de kinderen zien/*gezien lachen.
Jan has the children see/seen laugh
'Jan has seen the children laugh.'
a′. *Jan heeft de kinderen lachen zien/gezien.
Jan has the children laugh see/seen
b. Jan heeft de kinderen de dieren zien/*gezien verzorgen.
Jan has the children the animals see/seen look.after
'Jan has seen the children look after the animals.'
b′. *Jan heeft de kinderen de dieren verzorgen zien/gezien.
Jan has the children the animals look.after see/seen
c. Jan heeft de bladeren zien/*gezien vallen.
Jan has the leaves see/seen fall
'Jan has seen the leaves fall.'
c′. *Jan heeft de bladeren vallen zien/gezien.
Jan has the leaves fall see/seen

Although these facts establish fairly firmly that the phrases between brackets in the AcI-constructions in (681) cannot be BARE-INF nominalizations, we will nevertheless apply the remaining tests for the sake of completeness. First, the primeless examples in (684) show that the bare infinitives can follow the negative adverb *niet* but cannot be preceded by the negative article *geen* 'no'; tests V and VI thus confirm that we are dealing with bare infinitivals.

(684) a. dat Jan de kinderen niet/*geen lachen zag.
that Jan the children not/no laugh saw
'that Jan didn't see the children laugh.'
b. dat Jan de kinderen de dieren niet/*geen verzorgen zag.
that Jan the children the animals not/no look.after saw
'that Jan didn't see the children look after the animals.'
c. dat Jan de bladeren niet/*geen vallen zag.
that Jan the leaves not/no fall saw
'that Jan didn't see the leaves fall.'

Second, the examples in (685) show that although the bare infinitives may precede the perception verbs in clause-final position, they cannot be moved further leftward by means of focus movement despite the fact that the intended meaning of these examples is completely plausible: "that Jan liked to see ....."; test IV thus confirms again that the bracketed phrases are not nominal but verbal in nature.

(685) a. *dat Jan [de kinderen lachen] graag zag.
that Jan the children laugh gladly saw
b. *dat Jan [de kinderen de dieren verzorgen] graag zag.
that Jan the children the animals look.after gladly saw
c. *dat Jan [de bladeren vallen] graag zag.
that Jan the leaves fall gladly saw

In short, we have ample evidence for concluding that the presence of a noun phrase corresponding to the subject of the bare infinitival is incompatible with analyses according to which the perception verb *zien* in (681) is complemented by a BARE-INF nominalization—instead we are dealing with bare infinitival object clauses.

B. Phrases in which the subject of the bare infinitival is left implicit

The subject of the embedded bare infinitival clause can be left implicit under certain conditions. Examples such as (686) suggest that the bare infinitive must be transitive; omitting the subject of °monadic (intransitive and unaccusative) verbs normally gives rise to a marked result

(686) a. Ik hoorde (*de kinderen*) *liedjes zingen*. [transitive]
I heard the children songs sing
'I heard the children sing a song/I heard the song being sung.'
b. Ik hoorde $^{??}$(*Peter*) *slapen*. [intransitive]
I heard Peter sleep
'I heard Peter sleep.'
c. Ik hoorde *(*de kinderen*) *stiekem vertrekken*. [unaccusative]
I heard the children sneakily leave
'I heard the children leave on the quiet.'

The degraded status of the examples in (686b&c) supports the conclusion from the previous subsection that perception verbs are incompatible with nominalizations as BARE-INF nominalizations are not sensitive to the °adicity of the input verb: the examples in (687) are all fully acceptable.

(687) a. *Liedjes zingen* is leuk. [transitive]
songs sing is fun
'Singing songs is fun.'
b. *Slapen* is noodzakelijk. [intransitive]
sleep is necessary
'Sleeping is necessary.'
c. *Stiekem vertrekken* is stout. [unaccusative]
sneakily leave is naughty
'Leaving surreptitiously is naughty.'

The examples in (688) show, however, that there is at least one exception to the general rule that the subject of monadic verbs cannot be left out in AcI-constructions; verbs expressing sound emission normally give rise to fully acceptable results.

(688) a. Ik hoorde *Peter snurken*$_{\text{V}}$.
I heard Peter snore
'I heard Peter snore.'
a′. Ik hoorde *snurken*$_{?}$.
I heard snore
'I heard snoring.'
b. Ik hoorde *iemand gillen*$_{\text{V}}$.
I heard someone scream
'I heard someone scream.'
b′. Ik hoorde *gillen*$_{?}$.
I heard scream
'I heard screaming.'
c. Ik hoorde *de machine brommen*$_{\text{V}}$.
I heard the machine buzz
'I heard the machine buzz.'
c′. Ik hoorde *brommen*$_{?}$.
I heard buzz
'I heard buzzing.'

Since we cannot *a priori* exclude an analysis according to which the primed examples involve BARE-INF nominalizations, we will investigate these cases in somewhat greater detail. Before we do so, it should be pointed out that the infinitival clause in example (686a), which is the one typically discussed in the descriptive and theoretical literature, likewise involves sound emission. This example may therefore belong to the same type as the examples in (688), which seems to be borne out by the fact that its pseudo-intransitive counterpart, *Ik hoorde zingen* (lit.: I heard sing), is acceptable; cf. Vanden Wyngaerd (1994:ch.3). For this reason, we will include example (686a) in our investigation below.

The tests from Table (678) should again be helpful in establishing whether the bare infinitive is nominal or verbal in nature, or whether it can be both. Let us first consider whether the infinitive can be verbal. If so, it should be part of the °verbal complex and hence be able to appear last in the clause-final verb cluster (test I and II). The examples in (689) show that this is indeed the case, regardless of whether the subject of the infinitive is overtly expressed or implicit. The fact illustrated in (689b) that the constituent headed by the bare infinitive can be split by the verb *horen* likewise shows that the bare infinitive is part of the verb cluster.

(689) a. dat ik (*Peter*) hoorde *snurken*$_{\text{V}}$.
that I Peter heard snore
'that I heard Peter snore/that I heard snoring.'
b. dat ik (*de kinderen*) *een liedje* hoorde *zingen*$_{\text{V}}$.
that I de children a song heard sing
'that I heard the children sing a song/that I heard a song being sung.'

Test III applies to the examples in (690). That the bare infinitive can be verbal in nature is shown by the fact, illustrated by the primeless examples, that it triggers the IPP-effect, again regardless of whether the subject of the infinitive is overtly expressed or implicit. The primed examples show, however, that the IPP-effect does not arise if the bare infinitive precedes the verbal sequence. This, as well as the fact that the subject must be omitted in that case, shows that the bare infinitive can also be nominal in nature.

(690) a. dat ik (*Peter*) heb horen/*gehoord *snurken*$_V$.
that I Peter have hear/heard snore
‘that I’ve heard Peter snore.’
a′. dat ik (**Peter*) *snurken*$_N$ heb gehoord.
that I Peter snore have heard
‘that I’ve heard snoring.’
b. dat ik (*de kinderen*) *een liedje* heb horen/*gehoord *zingen*$_V$.
that I the children a song have hear/heard sing
‘that I’ve heard the children sing a song.’
b′. dat ik (**de kinderen*) *een liedj*e *zingen*$_N$ heb gehoord.
that I the children a song sing have heard/hear
‘that I’ve heard singing of a song.’

That we are dealing with a nominalization is also clear from the fact illustrated in (691) that the phrase headed by the bare infinitive may undergo focus movement (test IV); again this requires that the subject be left implicit.

(691) a. dat ik (*Peter) snurken$_N$ niet graag hoor.
that I Peter snore not gladly hear
‘that I don’t like to hear snoring.’
b. dat ik (*de kinderen) liedjes zingen$_N$ graag hoor.
that I the children songs sing gladly hear
‘that I like to hear singing of songs.’

That the bare infinitives can be verbal or nominal is also supported by the fact that the bare infinitive in example (692) can be preceded by either the negative adverb *niet* ‘not’ or the negative article *geen* ‘no’ (tests V and VI). In the former case, the bare infinitive must be interpreted as verbal, as is also clear from the fact that its subject can be overtly expressed, whereas in the latter case it must be parsed as nominal, as is also clear from the fact that its subject must be left implicit.

(692) a. dat ik (Peter) niet snurken$_V$ hoor. [*snurken* is verbal]
that I Peter not snore hear
‘that I don’t hear Peter snore.’
b. dat ik <*Peter)> geen <*Peter> snurken$_N$ hoor. [*snurken* is nominal]
that I Peter no snore hear
‘that I hear no snoring.’

The discussion above has established that the perception verb *horen* may take a bare infinitival complement clause with an implicit subject. It is doubtful whether verbs like *zien* ‘to see’ or *vinden* ‘to consider’ also have this option. The examples in (693), for example, show that leaving the subject of the infinitival complement of *zien* implicit always gives rise to a degraded result. This suggests that leaving the subject implicit is only possible if the bare infinitive is selected by a verb of sound emission; cf. Petter (1998:145)

(693) a. Ik zag $^{??}$(een gewapende bende) een bank beroven. [transitive]
I saw an armed gang a bank rob
'I saw an armed gang rob a bank.'
b. Ik zag (*Peter) acteren. [intransitive]
I saw Peter act
c. Ik zag (*een kaars) doven. [unaccusative]
I saw a candle go.out

C. Conclusion

The two previous subsections have established that perception verbs can indeed take bare infinitival clauses as their complement. In fact, this seems to be the only viable analysis for constructions in which the subject of the bare infinitival is expressed by means of an accusative noun phrase—subjects of BARE-INF nominalizations are never expressed by means of nominal phrases. If the subject of the bare infinitival is left implicit, on the other hand, it would in principle be possible to analyze the projection of the bare infinitive as a BARE-INF nominalization. We investigated such constructions by means of the tests from Table (678) and found such structures to be ambiguous. However, we also saw that the ambiguity arises only with the verb *horen* 'to hear', that is, if the bare infinitive is selected by a verb of sound emission.

IV. The subject of the bare infinitival clause

This subsection discusses the subject of bare infinitival complement clauses in examples such as (694), in which we have marked the infinitival clauses with square brackets and italicized its presumed subject.

(694) a. Jan zag [*Marie/haar* aan haar dissertatie werken].
Jan saw Marie/her on her dissertation work
'Jan saw Marie work on her PhD thesis.'
b. Marie hoorde [*Peter/hem* in de keuken werken].
Marie heard Peter/him in the kitchen work
'Marie heard Peter work in the kitchen.'

Subsection A begins by showing that the accusative objects in (667) are not internal arguments of the perception verbs but external arguments of the infinitival verbs and thus function as the subject of the embedded infinitival clauses. The fact that these subjects appear with °accusative case is normally attributed to the fact that bare infinitival clauses of perception verbs are transparent for case-assignment, as a result of which the perception verbs are able to assign accusative case to them; this will be discussed in Subsection B. Subsection C returns to the fact mentioned in Subsection III that under certain conditions the subject of the infinitival clause can be omitted, and we will show that in such cases it can be alternatively expressed by means of an agentive *door*-phrase.

A. The direct object is not an internal argument of the perception verb

Subsection I claimed that the noun phrases *de zon* 'the sun' and *de deur* 'the door' in the AcI-constructions in the primed examples in (695) are subjects of the infinitival verbs. A first, not very strong, argument in favor of this claim is that these noun phrases also function as the subjects of the verbs *opkomen* and *klapperen* 'to rattle' in the finite complement clauses in the primeless examples.

(695) a. Marie zag [dat *de zon* opkwam]. a′. Marie zag [*de zon* opkomen].
Marie saw that the sun prt.-rose Marie saw the sun prt.-rise
'Marie saw that the sun was rising.' 'Marie saw the sun rise.'
b. Jan hoorde [dat *de deur* klapperde]. b′. Jan hoorde [*de deur* klapperen].
Jan heard that the door rattled Jan heard the door rattle
'Jan heard that the door rattled.' 'Jan heard the door rattle.'

A more conclusive argument is that the finite and infinitival clauses behave in a similar way under pronominalization: the pronoun *dat* can not only be used to pronominalize the finite clauses in the primeless examples but also the complete bracketed phrase in the primed examples. The fact that the noun phrases *de zon* and *de deur* are part of the pronominalized phrases unambiguously shows that they are part of the infinitival clause and are therefore not introduced as internal arguments of the perception verbs. This leaves us with the only option that they function as subjects of the bare infinitival clauses.

(696) a. Marie zag [dat *de zon* opkwam] en Peter zag dat ook.
Marie saw that the sun prt.-rose and Peter saw that too
a′. Marie zag [*de zon* opkomen] en Peter zag dat ook.
Marie saw the sun prt.-rise and Peter saw that too
b. Jan hoorde [dat *de deur* klapperde] en Els hoorde dat ook.
Jan heard that the door rattled and Els heard that too
b′. Jan hoorde [*de deur* klapperen] en Els hoorde dat ook.
Jan heard the door rattle and Els heard that too

That the accusative noun phrases in AcI-constructions are not internal arguments of the perception verbs is also clear from the fact that they can be pronominalized by means of the weak anaphor *zich*. The primeless examples in (697) first show that this is never possible if the accusative object is an internal argument of the verb; this is in accordance with the generalization from Section N5.2.1.5, sub III, that the weak reflexive *zich* cannot be bound by a co-argument. The coindexing in (697) indicates the intended °binding relation.

(697) a. Marie$_i$ zag Peter/zichzelf$_i$/*zich$_i$ (op televisie).
Marie saw Peter herself/REFL on television
b. Jan$_i$ hoorde Els/zichzelf$_i$/*zich$_i$ (op de radio).
Jan heard Els/himself/REFL on the radio

The examples in (698) show that the weak reflexive *zich* is possible in AcI-constructions with perception verbs. Note in passing that the weak reflexive often can be replaced by the complex reflexive *zichzelf* without a distinct difference in meaning.

(698) a. Marie ziet [Peter/zich/zichzelf in de spiegel kijken].
Marie saw Peter/REFL/herself in the mirror look
‘Marie saw Peter/herself look in the mirror.’
b. Jan hoorde [Els/zich/zichzelf zingen].
Jan heard Els/REFL/himself sing
‘Jan heard Els/himself sing.’
c. Jan voelde [zich/$^?$zichzelf in slaap sukkelen].
Jan felt REFL/himself in sleep plod
‘Jan felt himself doze off.’

Constructions like (698a&b) do not seem very frequent in speech and may feel somewhat forced, for the simple reason that people tend not to register their own actions by visual or auditory means. Examples such as (698c), on the other hand, are quite common, and the same thing holds for more special infinitival constructions with *zien* ‘to see’ such as (699) that express an illusory/epistemic reading. Note in passing that in examples like (698c) and (699) the use of weak reflexives seems preferred to the use of complex reflexives.

(699) a. Jan ziet zich/$^?$zichzelf binnenkort naar Londen gaan.
Jan sees REFL/himself soon to London go
‘Jan envisages himself going to London soon.’
b. Jan ziet zich/$^?$zichzelf niet snel vertrekken.
Jan sees REFL/himself not soon leave
‘Jan can’t quite see himself leaving soon.’

The fact that the weak reflexive is possible in examples like (698) and (699) is consistent with the generalization that weak reflexive *zich* cannot be bound by a co-argument if the reflexive functions as the subject of the bare infinitival; it would be highly surprising, however, if it functioned as an internal argument of the perception verbs.

B. Case-marking of the subject of the infinitival clause

Although it is generally assumed that the subject of the infinitival clause is assigned accusative case by the perception verb, this is not easy to establish in Dutch. Of course, it is clear that we are not dealing with nominative case: the form of the pronoun in example (700a) shows that the subject of the infinitival clause is assigned °objective case. And that we are dealing with °accusative (and not °dative) case might be supported by the fact that this case is indeed morphologically expressed in the German counterpart of this example in (700b); cf. Drosdowski (1995:739).

(700) a. Ik zag [Jan/hem dichterbij komen]. [Dutch]
I saw Jan/him closer come
‘I saw Jan/him come closer.’
b. Ich sah [(den) Johann/ihn$_{acc.}$ näher kommen]. [German]
I saw the Johann/him closer come

There is, however, little independent evidence for claiming that the accusative case is assigned by the perception verb. One way of establishing this would be by appealing to passivization: the fact that the accusative subject of the infinitival clause in the English example in (701a) is promoted to subject of the °matrix clause in the corresponding passive construction in (701b) can be seen as evidence in favor of “exceptional case marking” of the subject of the infinitival clause by the matrix verb *to expect*.

(701) a. John expects [Bill/him to read the book].
b. Bill/He$_i$ was expected [t$_i$ to read the book].

This kind of evidence is, however, not available in Dutch AcI-constructions: passivization of such examples is always impossible. The (a)-examples in (702) show this for a construction in which the infinitive is monadic (that is, intransitive or unaccusative), and the (b)-examples for a construction in which the infinitive is transitive; we have also shown for the latter case that varying the position of the object of the embedded infinitive does not affect the acceptability judgments.

(702) a. Jan zag [Marie/haar slapen/vertrekken].
Jan saw Marie/her sleep/leave
a′. *Marie/Zij was gezien slapen/vertrekken.
Marie/she was seen sleep/leave
b. Jan hoorde [Marie/haar een liedje zingen].
Jan heard Marie/her a song sing
‘Jan heard Marie/her sing a song.’
b′. *Marie/Zij was <een liedje> gehoord <een liedje> zingen.
Marie/she was a song heard sing

It seems quite a robust generalization for Dutch that “intermediate” verbs cannot appear as participles. This is clear from the so-called °infinitivus-pro-participio effect that we find in the perfect-tense counterpart of examples such as (703a).

(703) a. Jan wil je boek lezen.
Jan want your book read
‘Jan wants to read your book.’
b. Jan heeft je boek willen/*gewild lezen.
Jan has your book want/wanted read
‘Jan has wanted to read your book.’

The examples in (704) show, however, that this is probably not the reason for the unacceptability of the primed examples in (702): the result of passivization is also unacceptable if we replace the participles in these examples by infinitives.

(704) a. *Marie/zij was zien slapen/vertrekken.
Marie/she was see sleep/leave
b. *Marie/zij was <een liedje> horen <een liedje> zingen.
Marie/she was a song hear sing

The examples in (705) further show that impersonal passivization of constructions in which the subject of the bare infinitival clause is left implicit is also impossible. Note in passing that impersonal examples like *dat er snurken werd gehoord* ‘that someone heard snoring’ are fully acceptable; this could be used as an additional argument for the claim in Subsection III that examples like *dat Jan snurken hoorde* ‘that Jan heard snoring’ may involve a BARE-INF nominalization.

(705) a. dat Jan hoorde snurken.
that Jan heard snore
‘that Jan heard snore/snoring.’
a′. *dat er werd gehoord snurken.
that there was heard snore
b. dat Jan liedjes hoorde zingen.
that Jan songs heard sing
‘that Jan heard singing/songs being sung.’
b′. *dat er liedjes werd gehoord zingen.
that there songs was heard sing

The unacceptability of the primed examples in (705) shows that the unacceptability of the primed examples in (702) is not related to the promotion of the accusative object to subject, and that this cannot be used as an argument against the standard “exceptional case marking” approach to Dutch AcI-constructions. The unacceptability of passivization of AcI-constructions remains in itself somewhat mysterious; see Bennis & Hoekstra (1989b) for an attempt to account for this.

For completeness’ sake, we want to conclude by noting that the primed examples in (702) cannot be saved by substituting *te*-infinitives for the bare infinitives either. In this respect, Dutch sharply differs from English, which is otherwise similar to Dutch in that it does not allow passivization of the bare infinitival construction; see Burzio (1981:319) and Bennis & Hoekstra (1989b).

(706) a. *Marie/Zij was gezien (te) slapen/vertrekken.
Marie/she was seen to sleep/leave
a′. Marie was seen *(to) sleep/leave.
b. *Marie/Zij was <een liedje> gehoord <een liedje> (te) zingen.
Marie/she was a song heard to sing
b′. Marie was heard *(to) sing a song.

The discussion above thus shows that there is no clear-cut evidence that the subject of the bare infinitival clause is assigned case by the perception verb; the main reason for assuming this is that subjects of infinitival clauses cannot normally be assigned case by some element internal to infinitival clauses.

C. Suppression of the embedded subject

Although subjects of infinitival complement clauses of perception verbs can always be realized as nominal phrases, in some cases they do not have to be present. A typical example illustrating this is given in (707a). Since example (707b) shows that the omitted subject can be overtly expressed by means of an agentive *door*-phrase, De Geest (1972), Bennis & Hoekstra (1989b), and Bennis (2000) argue that non-realization of the subject is the result of a passive-like process. De Geest further supports this proposal by pointing out that (707b) has more or less the same reading as the somewhat awkward morphological passive example in (707c).

(707) a. Ik hoor [(Marie) een liedje zingen].
I hear Marie a song sing
‘I hear (Marie) sing a song.’
b. Ik hoor [een liedje zingen (door Marie)].
I hear a song sing by Marie
c. $^{?}$Ik hoor [een liedje gezongen worden].
I hear a song sung be

A potential problem with analyses of this sort is that they may lead to the expectation that subjects of infinitival clauses headed by intransitive verbs like *klagen* ‘to complain’ are also optional given that Dutch allows impersonal passivization: cf. *Er werd geklaagd over de kou* ‘People complained about the cold’ (lit: there was complained about the cold). Examples like (708a&b) suggest, however, that this expectation is not fulfilled: leaving out the subject of the infinitival clause seems to give rise to a degraded result. It is not very clear what this shows, however, as the morphological passive in (707c) is also unacceptable, as is clear from the fact that a Google search (4/10/2014) on the string [*V over * geklaagd worden*], in which V stands for various present- and past-tense forms of *horen*, did not produce in any results.

(708) a. Ik hoor [Marie over de kou klagen].
I hear Marie about the cold complain
b. $^{*?}$Ik hoor [over de kou klagen (door Marie)].
I hear about the cold complain by Marie
c. *Ik hoor [over de kou geklaagd worden (door Marie)].
I hear about the cold complained be by Marie

Furthermore, we have seen in Subsection III that the acceptability of omitting the subject also depends on the matrix verb: examples in the literature typically involve the perception verb *horen* ‘to hear’, and the examples in (709a&b) show that many speakers are less willing to accept similar examples with *zien*. This would of course be surprising if we were dealing with a productive syntactic process. It may be interesting to note in this connection that the infinitival morphological passive in (709c) is fully acceptable.

(709) a. Ik zag [$^{??}$(een gewapende bende) een bank beroven].
I saw an armed gang a bank rob
‘I saw an armed gang rob a bank.’
b. $^{??}$Ik zag [een bank beroven (door een gewapende bende)].
I saw a bank rob by an armed gang
c. Ik zag [een bank beroofd worden (door een gewapende bende)].
I saw a bank robbed be by an armed gang
‘I saw a bank being robbed by an armed gang.’

Since the differences noted above have hardly been investigated in the literature so far, it is clear that more research is needed before we can draw any firm conclusions: for example, it is not clear to us to what extent the tendencies noted above are systematic and/or shared by larger groups of speakers.

V. Some additional remarks on perception verbs

This subsection concludes the discussion of the perception verbs with two remarks related to their use in AcI-constructions. Some more remarks on the perception verbs can be found in Section 5.2.3.4, sub VI.

A. Aan het + Infinitive complement?

Haeseryn et al. (1997:1053ff.) note that perception verbs can be complemented by means of the progressive *aan het* + V_{inf} phrase. The primeless examples in (710) show that the °logical SUBJECT of the infinitive is realized in that case as an accusative object. Although Haeseryn et al. do not explicitly analyze the primeless examples as AcI-constructions, they do suggest such an analysis by relating the primeless examples to the primed examples, which clearly are cases of AcI-constructions.

(710) a. We hoorden Peter/hem aan het rommelen op zolder.
we heard Peter /him AAN HET mess.about in the.attic
‘We heard Peter/him rummaging about in the attic.’
a′. We hoorden Peter/hem rommelen op zolder.
we heard Peter /him mess.about in the.attic
‘We heard Peter/him rummaging about in the attic.’
b. Ik zag Marie/haar aan het schoffelen in de tuin.
I saw Marie/her AAN HET hoe in the garden
‘I saw Marie/her weeding the garden.’
b′. Ik zag Marie/haar schoffelen in de tuin.
I saw Marie/her hoe in the garden
‘I saw Marie/her weed the garden.’

The primed and primeless examples differ, however, in various ways. First, we notice that the two constructions may markedly differ in word order; in embedded clauses the *aan het* + V_{inf} phrase must precede the perception verb in clause-final position, whereas the bare infinitive normally follows it (although it can also precede it if the perception verb is finite, that is, in verb sequences of no more than two verbs).

(711) a. dat we Peter/hem <*hoorden> aan het rommelen <hoorden> op zolder.
that we Peter /him heard AAN HET mess.about in the.attic
a′. dat we Peter/hem < hoorden> rommelen <hoorden> op zolder.
that we Peter /him heard mess.about in the.attic
b. dat ik Marie/haar <*zag> aan het schoffelen <zag> in de tuin.
that I Marie/her saw AAN HET hoe in the garden
b′. dat ik Marie/haar <zag> schoffelen <zag> in de tuin.
that I Marie/her saw hoe in the garden

Second, the examples in (712) show that while the bare infinitives trigger the IPP-effect in perfect-tense constructions, the *aan het* + V_{inf} phrases do not. Note in passing that the bare infinitives *rommelen* en *schoffelen* in the primed examples must be last in the clause-final verbal sequences, which confirms that they are verbal.

(712) a. We hebben Peter/hem aan het rommelen gehoord/*horen op zolder.
we have Peter /him AAN HET mess.about heard/hear in the.attic
'We've heard Peter/him rummaging about in the attic.'
a′. We hebben Peter/hem horen/*gehoord rommelen op zolder.
we heard Peter /him hear/heard mess.about in the.attic
'We've heard Peter/him rummaging about in the attic.'
b. Ik heb Marie/haar aan het schoffelen gezien/*zien in de tuin.
I saw Marie/her AAN HET hoe seen/see in the garden
'I've seen Marie/her weeding the garden.'
b′. Ik heb Marie/haar zien/*gezien schoffelen in de tuin.
I have Marie/her see/seen hoe in the garden
'I've seen Marie/her weed the garden.'

The fact that the *aan het* + V_{inf} phrases do not trigger the IPP-effect strongly suggests that they are not verbal in nature. This is confirmed by the fact that they must precede the clause-final verbal sequence. Finally, the examples in (713) show that the *aan het* + V_{inf} phrases cannot be moved into a more leftward position in the °middle field of the clause. This strongly suggests that such phrases function as a °complementives, which is in accordance with the findings in the more general discussion of the progressive *aan het* + V_{inf} phrase in Section 1.5.3, sub I.

(713) a. Ik heb hem < zojuist> aan het rommelen <*zojuist> gehoord op zolder.
I have him just.now AAN HET mess.about heard in the.attic
'I've just heard him rummaging about in the attic.'
b. Ik heb haar < zojuist> aan het schoffelen gezien in de tuin.
I saw her just.now AAN HET hoe seen in the garden
'I've just seen Marie/her weeding the garden just now.'

B. Nominalization of AcI-constructions

Subsection III has argued that AcI-constructions like *Jan hoort kinderen/hen lachen* 'Jan hears children/them laugh' cannot be analyzed such that the perception verb takes a BARE-INF nominalization as its complement because the subject of the input verb (here: *kinderen*/*hen*) cannot be realized as a prenominal noun phrase in such nominalizations. What we did not discuss, however, is that the complete AcI-construction can be the input for BARE-INF and DET-INF nominalization; the singly-primed examples in (714) are cases of the former and the doubly-primed examples are cases of the latter.

(714) a. dat Jan [de kinderen hoort lachen].
that Jan the children hears laugh
'that Jan hears the children laugh.'
a′. [Kinderen horen lachen] is altijd een feest.
children hear laugh is always a party
'Hearing children laugh is always a joy.'
a″. [Het horen lachen van de kinderen] is altijd een feest.
the hear laugh of de children is always a party

b. dat Jan [de kinderen de dieren ziet verzorgen].
that Jan the children the animals sees look.after
‘that Jan sees the children look after the animals.’
b′. [Kinderen dieren zien verzorgen] is altijd een feest.
children animals see look.after is always a party
‘Seeing children look after animals is always a joy.’
b″. [Het zien verzorgen van de dieren door de kinderen] is altijd een feest.
the see look.after of the animals by the children is always a party
c. dat Jan [de bladeren ziet vallen].
that Jan the leaves sees fall
‘that Jan sees the leaves fall.’
c′. [Bladeren zien vallen] betekent dat de herfst begint.
leaves see fall means that the autumn starts
‘Seeing leaves fall is a sure sign that autumn has started.’
c″. [Het zien vallen van de bladeren] betekent dat de herfst begint.
the see fall of the leaves means that the autumn starts

Examples like these may prove very important in the final analysis of the nominalization process since they show that nominalization involves not only the °conversion of a simplex verb into a noun but may in fact take as its input a complex syntactic object, in this case the phrase consisting of the perception verb and the bare infinitive. This, in turn, may favor an approach in which BARE-INF and DET-INF nominalization are seen as processes that apply in syntax given that, under standard assumptions, syntactic objects like verbal complexes are not stored in the lexicon; if so, this disfavors any approach that claims that BARE-INF and DET-INF nominalization are morphological processes that take place in the lexicon. We leave this suggestion for future research.

5.2.3.4. Causative laten *‘to make/let’ and* doen *‘to make’*

The verbs *laten* ‘to make/let’ and *doen* ‘to make’ resemble perception verbs like *zien* ‘to see’ and *horen* ‘to hear’ in that they may occur in AcI-constructions: they take a bare infinitival complement, the subject of which can be realized as an accusative noun phrase. In the examples in (715) the bare infinitival clauses are given in square brackets, and their subjects in italics.

(715) a. Ik laat [*Marie*/*haar* je auto repareren].
I make/let Marie/her your car repair
‘I make/let Marie/her repair your car.’
b. Haar antwoord deed [*Peter*/*hem* alle hoop verliezen].
her reply made Peter/him all hope lose
‘Her reply made Peter/him lose all hope.’

This section is organized as follows. Subsection I starts with a brief discussion of the meaning contribution of the two verbs in question. After that, Subsection II argues that these verbs are main verbs as defined earlier and Subsection III shows that they form a °verbal complex with their bare infinitival complement in the sense that the resulting structure exhibits monoclausal behavior. Subsections IV and V will discuss, respectively, case assignment to the subject of the infinitival clause and the option of leaving the subject implicit. Subsection VI, finally, discusses a number of special constructions with the verb *laten* that seem related to the AcI-construction.

I. The meaning contribution of laten *and* doen

The verb *laten* is ambiguous in the sense that it can be causative "to make" or permissive "to let". If the subject of *laten* refers to a person, as in (716), we are normally concerned with a causer, that is, an agent able to perform some unspecified action with a specific effect. Under the causative interpretation of the examples in (716), the action performed by the causer causes the °eventuality referred to by the infinitival clause to come about. Under the permissive reading, the causer refrains from performing some action that might have prevented the eventuality referred to by the infinitival clause to take place. Following Haeseryn et al. (1997:1015ff.) we refer to cases such as (716) by means of the notion indirect causation.

(716) a. Jan$_{\text{Causer}}$ liet [Marie vertrekken].
Jan made/let Marie leave
b. Jan$_{\text{Causer}}$ liet [de luchtballon stijgen].
Jan made/let the air.balloon rise

If the subject of *laten* is inanimate, as in (717), we are normally concerned with a cause: such subjects do not perform some unspecified action but have as an immediate effect that the eventuality referred to by the bare infinitival clause arises; we are dealing with direct causation.

(717) a. Het geluid$_{\text{Cause}}$ liet [Jan schrikken].
the sound made Jan be.startled
'The sound made Jan jump.'
b. De zon$_{\text{Cause}}$ liet [de temperatuur snel oplopen].
the sun made the temperature quickly up-go
'The sun made the temperature rise quickly.'

Causer and cause subjects differ in that the permissive reading is generally only possible with the former. The contrast can be illustrated by means of the examples in (718); whereas (718a) normally has a permissive reading, example (718b) can only be interpreted as causative.

(718) a. Jan$_{\text{Causer}}$ laat [Marie van haar eten genieten].
Jan lets Marie of her food enjoy
'Jan is letting Marie enjoy her food.'
b. De juiste omgeving$_{\text{Cause}}$ laat [Marie van haar eten genieten].
the right environment makes Marie of her food enjoy
'The proper ambience makes Marie enjoy her food.'

Having a causer subject normally implies that the subject is able to consciously affect the eventuality expressed by the bare infinitival clause. This may account for the contrast between the examples in (719). Under normal circumstances, the psychological state of longing for holidays cannot easily be induced deliberately in a person. However, it is quite normal that such a state is simply triggered by something. Note that it is easy to remove the markedness of (719a) by adding an adverbial cause-PP: in *Jan laat Marie met zijn verhalen naar vakantie verlangen* 'Jan makes Marie long for holidays with his stories' it is Jan's stories that trigger the rise of the psychological state of yearning for holidays in Marie.

(719) a. $^{\$}Jan_{Causer}$ laat [Marie$_{Exp}$ naar vakantie verlangen].
Jan makes Marie for a.holiday long
b. De drukte op haar werk$_{Cause}$ laat [Marie$_{Exp}$ naar vakantie verlangen].
the busyness at her work makes Marie for a.holiday long
'The pressure in her job makes Marie long for a holiday.'

The examples in (720) show that AcI-constructions with *doen* are mostly used to express direct causation, although Haeseryn et al. (1997) note that speakers from Belgium are often more permissive here than speakers from the Netherlands.

(720) a. *Jan deed [Marie vertrekken].
Jan made Marie leave
a′. *Jan deed [de luchtballon stijgen].
Jan made the air.balloon rise
b. Het geluid deed Jan schrikken.
the sound made Jan be.startled
b′. De zon deed de temperatuur snel oplopen.
the sun made the temperature quickly up-go

Doen as a direct causation verb normally has a cause and not a causer subject. This is illustrated by the following pair from Haeseryn et al. (1997:1017); example (721a) expresses that the subject of the sentence triggers certain memories of the speaker's brother, whereas (721b) expresses that the psychiatrist consciously tries to make the speaker think of his brother (e.g., as part of a therapy).

(721) a. Die man doet me denken aan mijn oudste broer.
that man makes me think of my eldest brother
'that man reminds me of my eldest brother.'
b. De psychiater laat me denken aan mijn oudste broer.
the psychiatrist makes me think of my eldest brother
'The psychiatrist makes me think of my eldest brother.'

As a result of this semantic difference between AcI-constructions with *laten* and *doen*, we need not be surprised that the frequency of causative *doen* is much lower than that of causative *laten*. However, we have the impression that this is also due to the fact that *doen* is mainly found in more or less fixed expressions and in the more formal register; the idiomatic examples in (722) are selected from the list given in the digital Van Dale dictionary Dutch-English; for cases from the formal register, we refer the reader to the discussion in Haeseryn et al. (1997:1015ff).

(722) a. Dat bericht heeft de gezichten doen betrekken.
that message has the faces made become.cloudy
'That news clouded a few faces/caused some long faces.'
b. zich doen gelden
REFL make count
'to assert oneself, make oneself felt'
c. oud zeer doen herleven
old pain make revive
'to reopen old sores/wounds'
d. Hij deed van zich spreken.
he made of REFL speak
'He made his mark/a great stir.'
e. iemand paf doen staan
someone flabbergasted make stand
'to stagger someone, take someone's breath away, knock someone out'
f. een herinnering doen vervagen
a memory make fade
'to blur a memory'

It is not *a priori* clear whether the ambiguity between the causative and the permissive reading of *laten* justifies the postulation of two different verbs *laten*, which we will indicate in the glosses by using *to make* and *to let* (despite that these verbs in fact allow more interpretations), or whether we are simply dealing with a single verb with different context-dependent readings. The first option seems hard to substantiate as the behavior of *laten* does not seem to be affected by the specific reading associated with it. One possible difference is related to the fact illustrated in (723) that the subject of transitive bare infinitivals can normally be left implicit. At first sight, it seems that this greatly favors the causative reading.

(723) a. Jan liet Marie de muren schilderen.
Jan made/let Marie the walls paint
'Jan made/let Marie paint the walls'
b. Jan liet de muren schilderen.
Jan made the walls paint
'Jan made someone paint the walls/had the walls painted.'

It is, however, not clear what this proves. For one thing, it might simply be the case that this preference for the causative reading in (723b) is a by-product of the fact that the causative reading focuses more on the actualization of the eventuality denoted by the bare infinitival verb (here: the walls being painted) than on the question who is performing this eventuality, while the permissive reading by its very nature (granting permission to/not hampering someone) is focused on the agent(s) involved in this eventuality. Furthermore, since the speaker will normally not make someone steal his favorite book, examples such as (724b) show that subjects of bare infinitivals can sometimes be left implicit in permissive constructions as well; the effect of leaving the subject implicit is again that the focus of the construction is on the actualization of a specific state of affairs: the speaker's favorite book being stolen.

(724) a. Ik heb Marie mijn lievelingsboek laten stelen.
I have Marie my favorite.book let steal
'I've let (made?) Marie steal my favorite book.'
b. Ik heb mijn lievelingsboek laten stelen.
I have my favorite.book let steal
'I've let (someone) steal my favorite book.'

II. Laten *and* doen *are main verbs*

The causative/permissive verbs *laten* 'to make/let' and *doen* 'to make' behave like the perception verbs in that they are able to occur in AcI-constructions. As the examples in (725) show, this means that *laten* and *doen* are argument taking verbs; they are able to add a causer/cause argument to those selected by the embedded main verb, viz. the subject of the main clause (here *Marie* and *de zon* 'the sun'). This shows that we are dealing with a main verb by our definition.

(725) a. Jan leest het boek.
Jan reads the book
a′. Marie/Zij$_{\text{Causer}}$ laat [Jan het boek lezen].
Marie/she makes/lets Jan the book read
b. De temperatuur stijgt.
the temperature rises
b′. De zon$_{\text{Cause}}$ doet [de temperatuur stijgen].
the sun makes the temperature rise

The examples in (726) show, however, that *laten* and *doen* differ from the perception verbs in that they do not satisfy one of the core tests for distinguishing main verbs; the bare infinitival complement cannot be pronominalized. In this respect *laten* and *doen* rather behave like typical non-main verbs such as the aspectual verb *gaan*: cf. *Jan gaat wandelen* versus **Jan gaat dat*. The number sign "#" in (726b) indicates that this example is fully acceptable in contexts where the verb *doen* can be rendered by English *to do*.

(726) a. *Marie/zij laat het/dat.
Marie/she makes it/that
b. $^{\#}$De zon doet dat.
the sun does that

Note in passing that Dutch has the imperative form *Laat dat!* 'Stop that! 'Do not do that!'. The verb *laten* in this idiomatic form is not causative/permissive but rather obstructive, does not syntactically select an obstructor (the speaker is contextually defined as such) and does not allow a bare infinitival complement; cf. **Laat dat liedje zingen!* (intended meaning: "Do not sing that song!").

III. Laten *and* doen *take a bare infinitival complement clause*

The examples in (727) show that *laten*- and *doen*-constructions exhibit monoclausal behavior: the primeless examples show that the bare infinitives are part of the verbal complex and can be separated from their arguments, and the primed examples show that these constructions exhibit the IPP-effect in the perfect tense.

(727) a. dat Marie/zij *Peter het boek* laat *lezen*.
that Marie/she Peter the book makes read
‘that Marie/she makes/lets Peter read the book.’
a′. Marie/Zij heeft Peter het boek laten/*gelaten lezen.
Marie/she has Peter the book make/made read
‘Marie/she has made/let Peter read the book.’
b. dat de zon *de temperatuur* doet *stijgen*.
that the sun the temperature make rise
‘that the sun makes the temperature rise.’
b′. dat de zon de temperatuur heeft doen/*gedaan stijgen.
that the sun the temperature has make/made rise
‘that the sun has made the temperature rise.’

The question remains as to whether causative/permissive *laten* ‘to make/let’ and causative *doen* ‘to make’ can take a BARE-INF nominalization as their complement. Section 5.2.3.3, sub III, has shown that a phrase headed by a bare infinitive with an overt subject cannot be analyzed as a BARE-INF nominalization, for the simple reason that the subject of the input verbs of such nominalizations is normally left implicit or expressed by means of a *van*- or a *door*-PP. This leaves us with those constructions in which the subject is left implicit. Analyzing such constructions as involving BARE-INF nominalizations seems *a priori* implausible, given that *laten* and *doen* normally do not allow nominal complements at all, which was in fact already shown in Subsection II by the unacceptability of pronominalization in the examples in (726). That we are not dealing with BARE-INF nominalizations in such cases is also clear from the fact that the bare infinitives cannot precede the clause-final verbal sequences in examples such as (728), regardless of whether the subject is overtly realized or left implicit.

(728) a. dat Jan (Marie) het hek <*schilderen> zal laten <schilderen>.
that Jan Marie the gate paint will let
‘that Jan will let (Marie) paint the gate.’
b. dat deze slagzin (ons) aan het verleden <*denken> moet doen <denken>.
that this slogan us of the past think must do
‘that this slogan is supposed to make us think of the past.’

IV. The subject of the bare infinitival clause

Given that the verbs *laten* and *doen* are not able to take a nominal complement, it seems that we can *a priori* exclude the option that the direct object *Jan/hem* in (729a) is an internal argument of the verb; we can therefore safely conclude that it functions as the subject of the bare infinitival. The subject of the bare infinitival complement clause is generally taken to be marked with accusative case by the causative verb. That the case in question is accusative is difficult to establish on the basis of the Dutch example in (729a), but might be supported by the fact that this case shows up overtly in its German translation in (729b), taken from Drosdowski (1995:739).

(729) a. Zij lieten [Peter/hem vertrekken]. [Dutch]
they let Peter/him leave
b. Sie ließen [Peter/ihn$_{acc}$ gehen]. [German]
they let Peter/him go

As there is no case assigner in the embedded infinitival clause, it seems plausible to attribute case assignment to the verb *laten*, but there is again little independent evidence for this. One way of establishing this would be by means of passivization: the fact that the accusative subject of the infinitival clause in the English example in (730a) is promoted to subject of the °matrix clause in the corresponding passive construction in (730b) can be seen as evidence in favor of “exceptional case marking” of the subject of the infinitival clause by the matrix verb *to expect*.

(730) a. John expects [Bill/him to read the book].
b. Bill/He$_i$ was expected [t$_i$ to read the book].

This kind of evidence is, however, not available in Dutch AcI-constructions: passivization of such examples is always impossible. The (a)-examples in (731) show this for a construction in which the infinitive is °monadic (that is, intransitive or unaccusative), and the (b)-examples for a construction in which the infinitive is transitive; see Section 5.2.3.3, sub IVB, for a more extensive discussion of the impossibility of passivization in AcI-constructions.

(731) a. Jan liet [Marie/haar slapen/vertrekken].
Jan let Marie/her sleep/leave
a′. *Marie/Zij werd gelaten slapen/vertrekken.
Marie/she was let sleep/leave
b. Jan liet [Marie/haar het hek schilderen].
Jan made/let Marie/her the gate paint
b′. *Marie/Zij werd het hek gelaten schilderen.
Marie/she was the gate let paint

Given that the examples in (732) show that the verb *laten* can be passivized when it takes a °complementive, the unacceptability of the primed examples in (731) remain somewhat mysterious: see Bennis & Hoekstra (1989b) for an attempt to account for the unacceptability of the primed examples in (731), and Petter (1998:ch.4) for an alternative proposal.

(732) a. Marie liet het touw los.
Marie let the rope loose
‘Marie let go of the rope.’
b. Het touw werd los gelaten.
the rope was loose let

For completeness’ sake, note that Coopmans (1985) mentions that some (dialect?) speakers do allow constructions of the type *Het hek is laten schilderen*; examples like these are not relevant in the present context because that it is not the presumed subject of the infinitival clause (which is assumed to be assigned accusative case by the verb *laten*) that is promoted to the subject of the matrix clause, but the object (which, under standard assumptions, receives case from the infinitive). This construction is not widespread: a Google search on the string [*is laten V*] for the transitive verbs *wassen* ‘to wash’, *strijken* ‘to iron’ and *verven* ‘to paint’ did not yield any result, so we will not discuss it here.

The discussion above thus shows that there is no clear-cut evidence that the subject of the bare infinitival clause is assigned case by the verb *laten*; the main reason for assuming this is that subjects of infinitival clauses cannot normally be assigned case by some element internal to infinitival clauses.

V. Suppression of the embedded subject

The verb *laten* is like the perception verb *horen* ‘to hear’ in that it allows the subject of the bare infinitival to remain implicit. The examples in (733) show that, in order for this to be possible, the bare infinitival clause must be sufficiently “heavy” in the sense that the bare infinitival must have at least one argument that is overtly expressed; this means that while monadic (intransitive and unaccusative) verbs normally do not easily allow non-realization of their subjects, transitive and PO-verbs do. Non-realization of the subject of the infinitival clause is often easier with causative than with permissive *laten* for reasons indicated in Subsection I.

(733) a. Jan liet [$^{*?}$(Marie) hard lachen]. [intransitive]
Jan made Marie loud laugh
b. Jan liet [$^{*?}$(Marie) snel vertrekken]. [unaccusative]
Jan made Marie quickly leave
c. Jan liet [(de kinderen) het liedje zingen]. [transitive]
Jan made the children the song sing
d. Jan liet [(de fietsenmaker) naar zijn fiets kijken]. [PO-verb]
Jan made the bike.mender at his bicycle look
‘Jan made the bicycle repairman look at his bicycle.’

As in the case of *horen* ‘to hear’, it is sometimes possible to realize the subject of the bare infinitival by means of an agentive *door*-phrase. The examples in (734) show that this option is restricted to constructions allowing non-realization of the subject.

(734) a. *Jan liet [(door Marie) hard lachen]. [intransitive]
Jan made by Marie loudly laugh
b. *Jan liet [(door Marie) snel vertrekken]. [unaccusative]
Jan made by Marie quickly leave
c. Jan liet [(door de kinderen) het liedje zingen]. [transitive]
Jan made by the children the song sing
d. Jan liet [(door de fietsenmaker) naar zijn fiets kijken]. [PO-verb]
Jan made by the bike.mender at his bicycle look

Note, for completeness’ sake, that, contrary to what we see in AcI-constructions with *zien* ‘to see’, passivization of the infinitival clause is never possible. We did not show this for the unaccusative verb *vertrekken* ‘to leave’ given that it can never be passivized.

(735) a. Er werd (door Marie) hard gelachen. [intransitive]
there was by Marie loudly laughed
a′. *Jan liet [(door Marie) gelachen worden].
Jan made by Marie laughed be
b. Het liedje werd door de kinderen gezongen. [transitive]
the song was by the children sung
b′. *Jan liet [(door de kinderen) het liedje gezongen worden].
Jan made by the children the song sung be
c. Er werd (door de fietsenmaker) naar zijn fiets gekeken. [PO-verb]
there was by the bike.mender at his bicycle looked
c′. *Jan liet [(door de fietsenmaker) naar zijn fiets gekeken worden].
Jan made by the bike.mender at his bicycle looked be

As in the case of the perception verb *horen* ‘to hear’ the possibility of expressing the agent by means of a *door*-phrase may give rise to the idea that non-realization of the subject is the result of a passive-like process; cf. Section 5.2.3.3, sub IVC. Petter (1998:ch.4) objects to such an analysis in view of the fact that examples such as (736a) allow non-realization of the noun phrase despite the fact that the verb *weten* normally resists passivization: cf. *Marie weet het antwoord* ‘Marie knows the answer’ versus **Het antwoord wordt geweten*. She further notices that the omitted noun phrase cannot be replaced by an agentive *door*-PP but can be replaced by an *aan*-PP; this is shown by (736b). We refer the reader to Petter (1998:141-2) for the discussion of additional cross-linguistic evidence against the idea that we are dealing with a passive-like process.

(736) a. Jan laat (Marie) het antwoord morgen weten.
Jan makes Marie the answer tomorrow know
‘Jan will let (Marie) know the answer tomorrow.’
b. Jan laat het antwoord morgen aan/*door Marie weten.
Jan makes the answer tomorrow to/by Marie know
‘Jan will let his answer know to Marie tomorrow.’

The choice between the *door*- and *aan*-PP seems to be determined by the embedded infinitive: verbs like *zingen* ‘to sing’ in (737a) are only compatible with *door*-PPs, verbs like *zien* ‘to see’ in (737b) are only compatible with *aan*-PPs, and verbs like *lezen* ‘to read’ in (737c) have both options. To our knowledge, the properties that determine which verbs go with which PP-type have not yet been investigated, so we will leave this to future research. Example (737c″) show that the *door*- and *aan*-PPs are mutually exclusive, even with verbs allowing both types; changing the word order does not improve the result.

(737) a. Jan laat Marie een liedje zingen.
Jan makes Marie a song sing
‘Jan makes/has Marie sing a song.’
a′. Jan laat een liedje zingen <door/*aan Marie>
Jan lets a song sing by/to Marie

b. Jan laat Marie de brief zien.
Jan lets Marie the letter see
‘Jan is showing Marie the letter.’
b′. Jan laat de brief zien aan/*door Marie.
Jan lets the letter see to/by Marie
c. Jan laat Marie de brief lezen.
Jan makes Marie the letter read
‘Jan makes/lets Marie read the letter.’
c′. Jan laat de brief lezen door/aan Marie.
Jan makes the letter read by/to Marie
c″. Jan laat de brief door Marie lezen aan Peter.
Jan makes the letter by Marie read to Peter

The data above suggest that there are at least two types of causative/permissive constructions. The first type is similar to the perception verbs: it takes a bare infinitival complement with an overt subject which can be replaced by a *door*-phrase. The nature of the second type is less clear but may involve a °dative noun phrase which can be replaced by a periphrastic noun phrase. Petter suggests that the dative phrase does not originate as the subject of the bare infinitival complement (which should therefore be analyzed with a PRO-subject) but as an internal (goal) argument of *laten*. We leave this topic to future research while noting that Dutch is not the only language with options—French *faire*, for example is compatible both with a *par*- and with an *à*-PP (although it does not allow for an accusative noun phrase); see Broekhuis & Gronemeyer (1997) for data and references.

It is sometimes also possible to find constructions with *doen* ‘to make’, in which the subject is left implicit. However, it does not really make sense to discuss the question as to whether this is a productive process, given the idiomatic nature of many causative *doen*-constructions. That example (738) is idiomatic is clear from the fact that the subject of the infinitival clause *must* be left implicit.

(738) Hij deed (*Marie/*iedereen) van zich spreken.
he made Marie/everyone of REFL speak
‘He made his mark/a great stir.’

VI. Some additional remarks on the verb laten

The previous subsections discussed AcI-constructions with causative/permissive *laten*. The discussion suggests that *laten* behaves in most respects like the perception verbs in AcI-constructions. This subsection discusses a number of additional facts concerning the behavior of *laten*, and investigates to what extent we find similar facts with the perception verbs.

A. Reflexive middle construction

AcI-constructions with a transitive bare infinitival complement such as (739a) often alternate with so-called reflexive middle constructions such as (739b), in which the subjects of both *laten* and the bare infinitive are suppressed and the object of the bare infinitival becomes the subject of the construction as a whole. The reflexive middle construction denotes a typical property of the subject of the construction as a whole.

(739) a. Jan laat Marie het hout bewerken.
Jan makes/lets Marie the wood work
'Jan makes/lets Marie work the wood.'
b. Dit soort hout laat zich gemakkelijk bewerken.
this kind.of wood lets REFL easily work
'This kind of wood works easily.'

This alternation, which is discussed extensively in Section 3.2.2.5, is typical for *laten*; it cannot occur with perception verb like *horen* 'to hear' or *zien* 'to see'.

(740) a. Jan laat/hoort de kinderen een liedje zingen.
Jan lets/hears the children a song sing
'Jan hears the children sing a song.'
a′. Dit liedje laat/*hoort zich gemakkelijk zingen.
this song lets/hears REFL easily sing
'This song sings easily.'
b. Marie laat/ziet haar studenten dat boek lezen.
Marie lets/sees her students that book read
'Marie lets/sees her students read that book.'
b′. Dat boek laat/*ziet zich gemakkelijk lezen.
that book lets/sees REFL easily sing
'That book reads easily.'

B. Quasi-imperative laten-*constructions*

The examples in (741) show that permissive/causative *laten* can unproblematically be used in imperative constructions; the speaker requests the addressee to stop certain activities distracting Marie/the children from her/their work.

(741) a. Laat [Marie/haar rustig doorwerken].
let Marie/her quietly on-work
'Let Marie/her work on in peace.'
b. Laat [de leerlingen/hen rustig doorwerken].
let the children/them quietly on-work
'Let the pupils/them work on in peace.'

This subsection discusses the constructions in (742), which at first sight seem very similar to the imperative construction in (741) but should be distinguished carefully, given that the noun phrases following *laten* do not function as the subject of the infinitival clause but as the °nominative subject of the complete construction. This is clear from the fact that the pronouns do not surface with accusative but with nominative case, and from the fact that the plural noun phrase triggers plural agreement on finite *laten*.

(742) a. Laat Marie/zij rustig doorwerken.
let Marie/she quietly on-work
b. Laten de leerlingen/zij rustig doorwerken.
let the pupils/they quietly on-work

The construction in (742) is restricted in various respects. First, it normally occurs with first and third person subjects only; second person subjects are often excluded (but see the examples in (745) for exceptions). Whether third person subjects are possible depends on the illocutionary force of the sentence as a whole. If we are concerned with an incentive to do something, the subject is restricted to first person pronouns: the (a)- but not the (c)-examples in (743) can be used as the starting signal for some activity. If the construction expresses, e.g., a wish or a warning, first and third person pronouns are equally acceptable. We refer the reader to Haeseryn et al. (1997:1020) for more discussion.

(743) a. Laat ik beginnen. a′. Laten we beginnen.
let I start let we start
‘Let me start.’ ‘Let us start.’
b. *Laat jij beginnen. b′. *Laten jullie beginnen.
let you$_{sg}$ start let you$_{pl}$ start
c. Laat hij beginnen. c′. Laten zij beginnen.
let he start let they start
‘Let him start.’ ‘Let them start.’

Secondly, the *laten*-construction is always a verb-first main clause. The (a)- and (c)-examples in (744) first show that the finite verb cannot be preceded by any other constituent: (here subject of the clause), and the (b)- and (d)-examples show that the *laten*-construction under discussion is not possible in embedded clauses. The fact that these two restrictions are also typical of imperative constructions is the reason for referring to the *laten*-construction under consideration as quasi-imperative.

(744) a. *Ik laat beginnen. a′. *We laten beginnen.
I let start we let start
b. *dat ik laat beginnen. b′. *dat we laten beginnen.
that I let start that we let start
c. *Hij laat beginnen. c′. *Zij laten beginnen.
he let start they let start
d. *dat hij laat beginnen. d′. *dat zij laten beginnen.
that he lets begin that they let begin

Semantically, the *laten*-construction is of course not like an imperative at all since the construction is not used to persuade the addressee to perform some activity; we have seen in our discussion of (743) that the construction may be directive but then it is the referent of the first person pronoun that is assumed to undertake the action; see also Section 11.2.5. Furthermore, the construction can be used to express a wish, as in (745a), or as an exclamative, as in (745b). It can also be used with a variety of other semantic functions; in (745c) it functions as an adverbial clause that is concessive in nature, and in (745d) it expresses a contrast.

Observe that the examples in (745b&c) are special in that they do allow second person pronouns.

(745) a. Laten zij/*jullie toch ophouden met dat lawaai.
let them/you PRT prt.-stop with that sound
'I wish they would stop that noise.'
b. Laat ik/jij/hij nu uitgekozen zijn!
let I/you/he now prt-chosen be
'Imagine, me/you/him actually being chosen!'
c. Laat hij slim zijn, dan is hij nog niet geschikt.
let he smart be, then is he still not suited
'He may be smart, but he's still not suitable.'
d. Laat hij/jij het nu makkelijk vinden, wij begrijpen het niet.
let he/you it now easy consider we understand it not
'Even if he/you may find it easy, we don't understand it.'

Following Terwey (1891), Schermer-Vermeer (1986) argues that the quasi-imperative *laten*-construction replaces the older conjunctive verb forms. This claim can be supported by the fact that the conjunctives in the first five lines of het *onzevader* (the Lord's Prayer) in the 1951 translation by the *Nederlands Bijbelgenootschap*, which are given in (746a), were replaced in the 2004 translation by the constructions with the verb *laten* 'to make' in (746b).

(746) a. Onze Vader Die in de Hemelen zijt, Uw Naam *word-e geheiligd*; Uw Koninkrijk *kom-e*; Uw wil *geschied-e*, gelijk in de Hemel alzo ook op de aarde.
b. Onze Vader in de hemel, *laat* uw naam *geheiligd* worden, *laat* uw koninkrijk *komen* en [*laat*] uw wil *gedaan worden* op aarde zoals in de hemel.
'Our Father which art in heaven, Hallowed be thy name. Thy kingdom come. Thy will be done in earth, as it is in heaven.' (St. Matthew 6:8-9)

That the quasi-imperative *laten*-construction exhibits certain syntactic features of imperative constructions may not be a coincidence given that Terwey (1891) and Schermer-Vermeer (1986) claim that it came into existence as the result of a reanalysis of true imperative *laten*-constructions such as (741). They claim that this reanalysis was the result of the decline of morphological case marking that started in the medieval period, which made it possible in many cases to construe the noun phrase not as an accusative object but as a nominative subject. If so, we expect to find a similar reanalysis in the case of the perception verbs, and Schermer-Vermeer claims that this is in fact true, which she supports by referring to examples such as (747) taken from Haeseryn et al. (1997: 1020).

(747) a. Hoor mij/$^{\%}$ik eens brullen.
hear me/I prt roar
'Hear me roar.'
b. Kijk hem/$^{\%}$hij eens rennen.
look him/he prt run
'Look at him running.'

We added a percentage mark to the nominative forms of the pronouns in these examples as Schermer-Vermeer correctly notes that these forms are not accepted by all speakers of Dutch; that these forms are marked in Dutch also seems to be confirmed by the fact that it is difficult to find cases like them on the internet; the search strings [*hoor/kijk hij eens*] resulted in no more than ten genuine hits of the quasi-imperative construction. This low frequency makes it somewhat dubious that the alternation in (747) is productive; if it is not, it also becomes debatable whether it can be used in support of the suggested reanalysis approach to the quasi-imperative *laten*-construction.

A second potential problem for Schermer-Vermeer's claim that we find a similar reanalysis in the case of perception verbs is that example (747b) with the object pronoun *hem* is not actually an imperative AcI-construction, as will be clear from the fact illustrated by the (a)-examples in (748) that it does not have an acceptable declarative counterpart. The final problem, the inverse of the previous one, is that the unquestionable AcI-construction in (748b) has no corresponding quasi-imperative construction; all speakers reject example (748b′) with the nominative pronoun *hij*.

(748) a. *Ik kijk [hem rennen].   a′. Kijk hem/%hij eens rennen.
I look him run   look him/he PRT run
b. Ik zie [hem rennen].   b′. Zie hem/*hij eens rennen.
I see him run   see him/he PRT run

The discussion above does not prove, of course, that Terwey's and Schermer-Vermeer's reanalysis approach to the quasi-imperative *laten*-construction is wrong. but it does show that it is not supported by the examples in (747) and (748). First, quasi-imperatives with the AcI-verbs *horen* 'to hear' are extremely rare, and they do not occur at all with the AcI-verb *zien* 'to see'. Second, constructions like *kijk hem eens rennen* in (747b) are not AcI-constructions, but constructions in their own right; as a result, constructions like *Kijk hij eens rennen* (if acceptable at all in Standard Dutch) cannot have resulted from the reanalysis process suggested by Terwey and Schermer-Vermeer. In short, here the causative verb *laten* behaves systematically different from the perception verbs occurring in AcI-constructions.

5.2.3.5. Hebben *'to have' + infinitive*

If *hebben* 'to have' governs some other verb, it is typically used as a perfect auxiliary; cf. Section 6.2.1. There is, however, another construction, illustrated in (749), in which *hebben* does not °govern a past participle but a bare infinitive.

(749) a. Ik heb de brief hier voor me liggen.
I have the letter here in.front.of me lie
'I have the letter lying here in front of me.'
b. Marie heeft buiten drie koeien lopen/grazen.
Marie has outside three cows walk/pasture
'Marie has three cows grazing outside.'
c. Jan heeft in Amsterdam veel familie werken/wonen.
Jan has in Amsterdam a lot of family work/live
'Jan has quite a few family members working/living in Amsterdam.'

The constructions in (749) crucially differ from perfect-tense constructions in that *hebben* functions as a main verb, as is clear from the fact that it adds an additional argument to the arguments selected by the infinitival verb. It looks as if we have to do with some sort of °AcI-construction: example (750b) shows that the subject of *liggen* surfaces as an object in the *hebben* + bare infinitive construction in order to allow the additional argument to become the subject of *hebben*. That *hebben* is an argument-taking verb in examples such as (750) cannot be shown so easily by means of pronominalization: a continuation of (750) by means of (750b′) is not accepted by all speakers.

(750) a. De brief/Hij ligt hier voor me.
the letter/he lies here in.front.of me
b. Ik heb [de brief/hem hier voor me liggen].
I have the letter/him here in.front.of me lie
b′. $^{\%}$... en Peter heeft dat ook.
... and Peter has that too

That *hebben* and the bare infinitive may form a °verbal complex is clear from the fact illustrated in (751a) that the infinitive may follow *hebben* in embedded clauses, as a result of which it is separated from its arguments. Unfortunately, it is not possible to appeal to the IPP-effect in order to provide more evidence for this, for the simple reason that the construction does not occur in the perfect tense; example (751b) is unacceptable both with and without the IPP-effect.

(751) a. dat ik de brief hier voor me heb liggen.
that I the letter here in.front.of me have lie
b. *dat ik de brief hier voor me heb hebben/gehad liggen.
that I the letter here in.front.of me have have/had lie

That *hebben* takes a bare infinitival complement clause finds more support in the fact that PP-complements of bare infinitives may contain the weak reflexive *zich* if the latter is bound by the subject of *hebben*; since weak reflexives must be free in their own clause (see Section N5.2.1.5, sub III, for a more accurate discussion), the bracketed structure in (752) must be an infinitival clause. The intended interpretation is indicated by means of coindexing.

(752) Dit bedrijf$_i$ heeft [vijfhonderd mensen voor zich$_i$ werken].
this company has five.hundred people for REFL work
‘This company employs 500 people.’

The competing analysis according to which the bare infinitive is the °head of a BARE-INF nominalization cannot be correct; subjects of the input verbs of such nominalizations are never realized as nominal phrases but are left implicit or realized by means of a *van*/*door*-phrase.

The discussion above has already shown that the *hebben* + bare infinitive construction is restricted in unexpected ways; it does not have a perfect form and does not seem to allow pronominalization of its infinitival complement. We continue by discussing some more restrictions. Note first that the infinitive is part of a restricted paradigm, which seems exhausted by the examples in (753), taken from Paardekooper (1986:108).

(753) a. Posture verbs: *liggen* ‘to lie’, *zitten* ‘to sit’, *staan* ‘to stand’, *hangen* ‘to hang’
b. Movement verbs: *lopen* ‘to walk’, *draaien* ‘to turn’, *rijden* ‘to drive’, *vliegen* ‘to fly’
c. Activity verbs: *branden* ‘to burn’, *grazen* ‘to pasture’, *groeien* ‘to grow’, *spelen* ‘to play’, *werken* ‘to work’, *wonen* ‘to live’

The verbs of posture in (753a) occur very frequently in this construction. They can frequently be omitted without any drastic effect on the meaning of the examples; the examples in (754) with and without the bare infinitive express more or less the same assertion. If there is a meaning difference, it might be that the examples without an infinitive simply express that the referents of the objects are in a specific location, whereas the examples with an infinitive suggest that the referents of the object may be located there for a certain reason: the contract mentioned in (754a), for example, may be in the right place to be consulted if needed, the old computer mentioned in (754b) may be needed as a fall-back, and the laundry mentioned in (754) is likely to hang outside in order to dry.

(754) a. Ik have het contract hier voor me (liggen).
I have the contract here in.front.of me lie
‘I have the contract (lying) here in front of me.’
b. Ik heb nog een oude computer in de bergkast (staan).
I have still an old computer in the cupboard stand
‘I still have an old computer (standing) in the cupboard.’
c. Ik heb de was buiten $^{?}$(hangen).
I have the laundry outside hang
‘I have the laundry hanging outside.’

The presence of the movement verbs in (755) sometimes seem to trigger a clear difference in meaning in the sentences. Sentences without a bare infinitive simply have a possession reading; the entities referred to by the object are in the possession of the entity referred to by the subject. In sentences with a bare infinitive, on the other hand, the possession reading is less prominent and the focus is more on the fact that the referents of the objects entertain some professional relation to the referents of the subject. This is perhaps not so clear in the case of *lopen* in (755a), although this example is certainly compatible with the idea that Marie is a farmer, but an example such as (755b) definitely suggests that the three cars are in Groningen for a reason: they are used, e.g., to transport things or persons. Example (755c) does not seem to involve possession at all, but simply expresses that there are at least three turbines running in the power station in question.

(755) a. Marie heeft buiten drie koeien (lopen).
Marie has outside three cows walk
‘Marie has three cows (grazing) outside.’
b. Jan heeft in Groningen drie auto’s (rijden)
Jan has in Groningen three cars drive
‘Jan has three cars (running) in Groningen.’
c. We hebben tenminste drie turbines (draaien) in deze centrale.
we have at least three turbines turn in this power.station
‘We keep at least three turbines (turning) in this power station.’

In (756), we give some examples with the activity verbs *branden* ‘to burn’, *grazen* ‘to pasture’, *groeien* ‘to grow’ and *werken* ‘to work’. These examples, too, seem to express a meaning that goes beyond the expression of simple possession.

(756) a. Jan heeft kaarsen in zijn kamer branden.
Jan has candles in his room burn
‘Jan has candles lit in his room.’
b. Marie heeft buiten drie koeien grazen.
Marie has outside three cows graze
‘Marie has three cows grazing (outside).’
c. Els heeft aardbeien in de tuin groeien.
Els has strawberries in the garden grow
‘Els has strawberries growing in the garden.’
d. Peter heeft in Groningen drie mensen werken.
Peter has in Groningen three people work
‘Peter has three people working for him in Groningen.’

It looks as if *hebben* + bare infinitive constructions often have a durative meaning; this is at least what Paardekooper claims for the *hebben* + *lopen* construction. If we substitute *krijgen* for *hebben*, the construction refers to some future °eventuality with a longer duration. However, the complementation options for this verb are even more restricted than with *hebben*: perhaps this complementation is restricted to *wonen* ‘to live’ and *werken* ‘to work’.

(757) a. Jan heeft/krijgt een jong stel naast zich wonen.
Jan has/gets a young couple next.to him live
‘There is/will be a young couple living next to Jan.’
b. Els heeft/krijgt een nieuwe assistent voor haar werken.
Els has/gets a new assistant for her work
‘Els has/will get a new assistant working for her.’

Another restriction often mentioned is that the infinitival clause normally contains some spatial phrase which can serve as a °complementive, like in the examples in (754), or as an adverbial phrase, as in the examples in (755) and (756). That leaving out the complementives in (754) gives rise to a degraded result need not surprise us: the posture verbs normally require a complementive to be present. In fact, it is the possibility of omitting the PP in (758) that should be seen as the surprising thing. We used a percentage sign in (758a) because one of our informants reported to accept *Ik heb het contract liggen*.

(758) a. Ik heb het contract $^{\%}$(hier voor me) liggen.
I have the contract here in.front.of me lie
b. Ik heb nog een oude computer (in de bergkast) staan.
I have still an old computer in the cupboard stand
c. Ik heb de was *(buiten) hangen.
I have the laundry outside hang
‘I have the washing hanging outside.’

If leaving out the adverbial phrases in (754) and (755) were to have a degrading effect, it would be surprising as these adverbial phrases are normally optional. Our own judgments suggest that there may well be some degrading effect, although it is generally quite mild and differs from case to case and probably also from speaker to speaker.

(759) a. Marie heeft $^{?}$(buiten) drie koeien lopen.
Marie has outside three cows walk
b. Jan heeft $^{?}$(in Groningen) drie auto's rijden.
Jan has in Groningen three cars drive
c. We hebben tenminste drie turbines draaien $^{?}$(in deze centrale).
we have at. least three turbines turn in this power.station

(760) a. Jan heeft kaarsen (in zijn kamer) branden.
Jan has candles in his room burn
b. Marie heeft $^{?}$(buiten) drie koeien grazen.
Marie has outside three cows graze
c. Els heeft aardbeien $^{??}$(in de tuin) groeien.
Els has strawberries in the garden grow
d. Peter heeft $^{??}$(in Groningen) drie mensen werken.
Peter has in Groningen three people work

For completeness' sake, the examples in (761) show that in the case of posture verbs, the complementive can also be adjectival or have the form of a verbal particle.

(761) a. Jan heeft zijn spullen klaar staan.
Jan has his things ready stand
'Jan's things are ready.'
b. Jan heeft de vlag uithangen.
Jan has the flag out-hang
'Jan has the flag hanging out.'

The examples in (762) show that verbal particles are also possible with verbs of movement, but seem impossible with other activity verbs; although *zijn kinderen groeien op* 'his children are growing up' is impeccable, example (762b) seems unacceptable.

(762) a. Marie heeft drie koeien rondlopen.
Marie has three cows around-walk
'Marie has three cows walking about.'
b. $^{*?}$Jan heeft twee kinderen opgroeien.
Jan has two children up-growing

5.2.4. Bibliographical notes

Although sentential complementation has been a central concern in syntactic research over the last fifty years, it is often difficult to point to specific studies; the data is often found in traditional grammars already and discussed by many authors. Of course, it is possible to identify several (especially early) seminal studies like

Kiparsky & Kiparsky (1970), Bresnan (1972), and Grimshaw (1979), but much of what is found in this (and the previous) chapter has been developed over the years by various authors, and it is therefore easier to refer to specific studies during our discussions. Nevertheless, we want to highlight a number of studies that we used in our discussion of some more special issues. The distinction between control and °subject raising is one of the main issues in the first two subsections of Section 5.2. Control theory has been a continuous concern of generative grammar since Rosenbaum (1967). We refer the reader to Williams (1980), Manzini (1983), Koster (1984a/1984b), Van Riemsdijk & Williams (1986), Haegeman (1994), Jaworska (1999), Hornstein (2001) and Dubinsky & Davies (2005) for reviews of and contributions to the more theoretical discussion. Other important studies, which also discuss the relevant Dutch data, are Bennis & Hoekstra (1989a/1989c), Van Haaften (1991), Model (1991a:ch.8), Vanden Wyngaerd (1994), Broekhuis et al. (1995), and Petter (1998). Bennis & Hoekstra (1989a/1989c) also provided the starting point of the discussion of subject raising in Section 5.2.2.2.

5.3. Complementive clauses

This section discusses cases in which clauses or other verbal projections function as °complementives, that is, as the predicative part of a copular or *vinden*-construction. We will discuss finite and infinitival clauses in separate subsections. These sections will be relatively brief since we will see that genuine cases with complementive clauses are rare.

I. Finite clauses

Finite clauses normally refer to propositions or questions; consequently, we do not expect that they can be predicated of noun phrases that refer to entities, and examples like those in (763) are indeed completely uninterpretable, in Dutch as well as in English.

(763) a. *Jan is [dat hij aardig is].
Jan is that he kind is
Compare: ‘*Jan is that he’s kind.’
b. *De auto is [of hij duur is].
the car is whether he expensive is
Compare: ‘*The car is whether it is expensive.’

What we may expect is that finite clauses can be predicated of noun phrases headed by proposition nouns like *feit* ‘fact’ or speech act nouns like *vraag* ‘question’, and at first sight the primeless examples in (764) seem to suggest that this may well be possible. Note in passing that instead of the indefinite noun phrase *een feit*, examples such as (764a) often have the bare noun *feit* in first position; cf. *Feit is dat hij te lui is*. This option seems to be less felicitous in cases such as (764a), although such examples can easily be found in the internet; cf. $^{??}$*Vraag is of zij voldoende vaardigheden heeft*.

(764) a. Een feit is [dat hij te lui is].
a fact is that he too lazy is
‘A fact is that he’s too lazy.’
b. Een open vraag is [of zij voldoende vaardigheden heeft].
an open question is whether she sufficient skills has
‘An open question is whether she has sufficient skills.’

It should be noted, however, that the near synonymous examples in (765), in which the finite clauses clearly function as subject clauses introduced by the °anticipatory pronoun *het* ‘it’, are equally possible. Observe that in this case, the noun phrase *een feit* cannot be replaced by the bare noun *feit*: cf. **Het is feit dat hij te lui is*.

(765) a. Het is een feit [dat hij te lui is].
it is a fact that he too lazy is
‘It is a fact is that he’s too lazy.’
b. Het is een open vraag [of zij voldoende vaardigheden heeft].
it is an open question whether she sufficient skills has
‘It is an open question as to whether she has sufficient skills.’

The fact that the examples in (765) are also possible casts doubt on the idea that we have to do with complementive clauses in (764), given that we know that the anticipatory pronoun *het* ‘it’ is often (and sometimes preferably) omitted if the complementive of the copular construction is topicalized. This is illustrated in (766) for copular clauses with the adjectival predicates *duidelijk* ‘clear’ and *onduidelijk* ‘unclear’; see Section 5.1.3, sub III, for more discussion.

(766) a. Het is duidelijk [dat Peter straks langskomt].
it is clear that Peter later prt.-comes
‘It is clear that Peter will drop by later.’
a′. Duidelijk is ($^{?}$het) [dat Peter straks langskomt].
clear is it that Peter later prt.-comes
b. Het is onduidelijk [of Peter straks langskomt].
it is unclear whether Peter later prt.-comes
‘It is unclear whether Peter will drop by later.’
b′. Onduidelijk is ($^{?}$het) [of Peter straks langskomt].
unclear is it whether Peter later prt.-comes

It may therefore be the case that the examples in (764) are simply derived from the copular constructions in (765) by topicalization of the complementives, as a result of which the anticipatory pronoun may be omitted. A first piece of evidence in favor of an analysis of this sort is that the anticipatory pronoun can at least marginally be used in examples such as (764), as shown by (767); cf. the primed examples in (766).

(767) a. $^{?}$Een feit is het [dat hij te lui is].
a fact is it that he too lazy is
b. $^{?}$Een open vraag is het [of zij voldoende vaardigheden heeft].
an open question is it whether she sufficient skills has

The analysis suggested above can be tested further by considering the embedded counterparts of the examples in (764); given that topicalization is not possible in embedded clauses, the claim that finite clauses may function as complementives predicts that the pronoun *het* is not needed because the DP *een feit* would then appear as the subject. It seems, however, that this prediction is wrong; the examples in (768) are clearly marked when the pronoun *het* is not present.

(768) a. dat $^{??}$(het) een feit is [dat hij te lui is].
that it a fact is that he too lazy is
‘that it is a fact that he’s too lazy.’
b. dat $^{*?}$(het) een open vraag is [of zij het heeft].
that it an open question is whether she it has
‘that it is an open question as to whether she has it.’

A similar conclusion can be drawn from internet data. A Google search (10/1/2012) on the strings [*dat het een feit is dat*] and [*dat een feit is dat*] shows that whereas the former is very frequent, the latter is extremely rare—it resulted in merely two relevant hits. Basically, the same thing holds for the strings [*dat het een (open) vraag is of*] and [*dat een (open) vraag is of*], albeit that the frequency is much lower; while the former resulted in 20 relevant hits, the latter was not found at all.

Still, we cannot conclude from the discussion above that it is never possible for a finite clause to function as a complementive. In the examples in (764) and (765) the noun phrase is indefinite and thus very suitable as a complementive. This is different with definite noun phrases, which are only used as complementives in equative copular constructions of the type *De directeur is de voorzitter* ‘The director is the chairman’. Such copular construction are characterized by the fact that the definite noun phrases may swap function depending on what counts as familiar or new information (which is expressed by, respectively, the subject and the complementive of the construction). The word order of the embedded clauses in (769) is indicative for the syntactic function of the two NPs; the subject always precedes the complementive, which must be left-adjacent to the copular verb in clause-final position.

(769) a. dat de directeur natuurlijk de voorzitter is. [predicate = *de voorzitter*]
that the director of.course the chairman is
‘that the director is the chairman, of course.’
b. dat de voorzitter waarschijnlijk de directeur is. [predicate = *de directeur*]
that the chairman probably the director is
‘that the chairman is probably the director.’

The question we want to raise now is whether finite clauses can be used as complementives in equative copular constructions. In order to answer this question we performed a Google search on the two strings in (770), which crucially contain a definite noun phrase, and found that both are highly frequent. The string in (770a) is a case in point: the noun phrase *de vraag* ‘the question’ clearly functions as a nominal complementive—we are dealing with a subject clause introduced by the anticipatory pronoun *het* ‘it’. However, a similar analysis is unlikely for (770b)—

the fact that *het* is not present suggests instead that we are dealing with a clausal complementive; see the discussion of the examples in (768).

(770) a. dat het de vraag is of ...
that it the question is whether
b. omdat de vraag is of ...
because the question is whether

In short, there is good reason for assuming that the two examples in (770) stand in a similar opposition as the two equative copular constructions in (769). A problem is, however, that this claim cannot straightforwardly be substantiated by means of word order, given that non-adverbial finite clauses tend to occur in the right periphery of the clause, that is, in a position following the verbs in clause-final position. Fortunately, there is another reliable indicator, which is the position of the definite noun phrase: if it functions as the complementive it must be left-adjacent to the verb(s) in clause-final position, whereas it should be able to occur more to the left id it functions as subject.

(771) a. dat het natuurlijk de vraag is [of Peter komt].
that it of course the question is whether Peter comes
‘that it is, of course, the question as to whether Peter will come.’
b. dat de vraag natuurlijk is [of Peter komt].
that the question of.course is whether Peter comes
‘that the question is, of course, whether Peter will come.’

Example (771b) therefore shows straightforwardly that finite clauses may indeed function as the predicate in equative copular constructions if the subject is a definite noun phrase headed by a speech act noun like *vraag* ‘question’. In (772), we provide similar examples with proposition nouns.

(772) a. dat de aanname natuurlijk is [dat Marie ook meedoet].
that the assumption of.course is that Marie also prt.-participates
‘that the assumption is, of course, that Marie will also participate.’
b. dat de leidende gedachte natuurlijk is [dat het goed is voor iedereen].
that the leading thought of.course is that it good is for everyone
‘that the principal idea is, of course, that it will be good for everyone.’

The situation is somewhat different in *vinden*-constructions; the obligatoriness of the pronoun *het* ‘it’ in (773) shows that we only find cases in which the finite clause functions as the °logical SUBJECT of the nominal complementive; the finite clause cannot be used as a complementive. *Vinden*-constructions of the type in (773) seem to be restricted to cases with the speech act noun *vraag* ‘question’; we have not been able to find any other cases.

(773) dat ik *(het) maar de vraag vind [of dat verstandig is].
that I it PRT the question consider whether that wise is
‘that I doubt whether that is wise.’

Another case involving a finite complementive clause is given in (774a), although it remains to be seen which of the two finite clauses functions as the subject and which as the complementive. We can decide this by introducing the anticipatory pronoun *het*. The fact illustrated in (774b) that this forces °extraposition of the *dat*-clause suggests that this is the subject clause. For completeness' sake, example (774c) shows that the presumed complementive clause must again be placed after the copular verb in clause-final position.

(774) a. [Dat hij te laat is] is waarschijnlijk [omdat er een file is].
that he too late is is probably because there a traffic.jam is
'That he's too late is because there is a traffic jam.'
b. Het is waarschijnlijk [omdat er een file is] [dat hij te laat is].
it is probably because there a traffic.jam is that he too late is
c. dat het waarschijnlijk is [omdat er een file is] [dat hij te laat is].
that it probably is because there a traffic.jam is that he too late is

Other potential examples from a similar semantic domain are given in (775). Like the *omdat*-clause in (774a), the *dat*-clauses in these examples refer to some reason (or cause), but here this reason motivates an exception to some expected state-of-affairs. The presumed copular sentence is typically conjoined with some other sentence that refers to this expected state-of-affairs (which can be left out when its contents is recoverable from the context). It is, however, difficult to prove that the *dat*-clause really functions as a complementive because the pronoun *het* cannot be replaced by a non-pronominal noun phrase, for which reason Paardekooper (1986: 263-4) refers to these cases as half-fixed expressions.

(775) a. Het is [dat het zondag is], maar anders moest je nu naar bed.
it is that it Sunday is but otherwise must you now to bed
'If today wasn't Sunday, you'd have to be in bed by now.'
b. dat het natuurlijk is dat je zo aardig bent,
that it of.course is that you so kind are
want anders zou hij het niet doen.
because otherwise would he it not do
'If you weren't so nice, he wouldn't do it.'

A final potential case with a finite complementive clause is given in (776a), which again involves the obligatory subject pronoun *het* 'it'. It might be the case, however, that this pronoun simply functions as an anticipatory pronoun introducing a subject clause, given that *zijn* 'to be' can readily be replaced by a modal verb like *lijken* 'to appear'; see Paardekooper (1986: 263). We refer to Section 5.2.2.2, for reasons to adopt such an analysis for examples such as (776b).

(776) a. dat het steeds is alsof hij stikt.
that it all.the.time is as-if he chokes
'that it always looks as if he's choking all the time.'
b. dat het steeds lijkt alsof hij stikt.
that it all.the.time appears as.if he chokes
'that it always looks as if he's choking all the time.'

For completeness' sake, we want to note that we analyze free relative clauses in copular constructions such as (777a) as nominal complementives, not as complementive clauses. The reason for this is that Section N3.3.2.2.1 has argued that free relatives are nominal in nature, which is clear, for example, from the fact that they may occur in positions typically occupied by nominal °arguments, like the subject position in (777b).

(777) a. dat die functie niet is [wat hij verlangt].
that that function not is what he desires
'that that position isn't what he desires.'
b. dat [wat hij verlangt] onmogelijk is.
that what he desires is impossible is
'that what he desires is impossible.'

II. Infinitival clauses

This subsection discusses a number of constructions that have been analyzed as cases in which infinitival clauses function as complementives. It will briefly show that these analyses are not without their problems and that sometimes reasonable alternatives are available. For this reason, the cases under discussion have been discussed more extensively elsewhere in the grammar; the references will be given in the subsections.

A. Om + te *infinitivals*

Van Haaften (1985) analyzes cases like those in the primeless examples in (778) as copular clauses with an infinitival clause as a complementive. There are basically two semantic types; either the infinitive indicates what the subject of the clause is destined for, or it provides some evaluation, in which case we are often dealing with metaphorical language. The primed examples shows that the latter but not the former type can also be used in *vinden*-constructions; example (778a′) cannot be used under the "intended for" reading, but at best allows the metaphorical "gorgeous" reading that we also find in (778b′).

(778) a. Die appels zijn [om op te eten]. ["intended for" reading]
those apples are COMP up to eat
'Those apples are intended for eating.'
a′. #Ik vind die appels [om op te eten].
I consider those apples COMP up to eat
b. Dat kind is [om op te eten]. [metaphorical reading]
that child is COMP up to eat
'That child is gorgeous.'
b′. Ik vind dat kind [om op te eten].
I consider that child COMP up to eat

A typical property of the constructions in (778) is that two constituents of the infinitival verb that are left phonetically unexpressed: in the examples in (778) these are the implied subject °PRO and the object of the infinitive *eten* 'to eat'. The examples in (779) show that the second element need not be an object but can also be, e.g., the nominal part of a PP-complement or an instrumental PP. The fact that the preposition *mee* is the stranded form of the preposition *met* strongly suggests that the second element is a °trace, and that we are dealing with empty °operator movement, as indicated in the primed examples.

(779) a. Het leven is [om PRO van — te genieten].
the life is COMP of to enjoy
'Life is intended to be enjoyed.'
a′. Het leven is [OP$_i$ om PRO van t_i te genieten].
b. Die machine is [om het gras mee/*met — te maaien].
that machine is COMP the lawn with/with to mow
'That machine is intended for mowing the lawn.'
b′. Die machine is [OP$_i$ om het gras mee t_i te maaien].

The structures in the primed examples look very much like the structures proposed for *easy-to-please* constructions like *Jan is leuk [om mee/*met uit te gaan]* 'Jan is nice to go out with', as discussed in Section A6.5.4.1, which are simply cases of copular constructions with an adjectival complementive. This makes it tempting to hypothesize that the examples discussed above in fact involve an empty adjective comparable with *bedoeld* 'intended' in (780). If correct, the examples above are just apparent cases in which *om* + *te* infinitives have the function of complementive.

(780) a. Het leven is bedoeld [OP$_i$ om PRO van t_i te genieten].
the life is intended.for COMP of to enjoy
'Life is meant to be enjoyed.'
b. Die machine is bedoeld [OP$_i$ om het gras mee t_i te maaien].
that machine is intended.for COMP the lawn with to mow
'That machine is intended for mowing the lawn.'

A drawback of the analysis suggested above is that it cannot easily be extended to °absolute *met*-constructions like those in (781), which likewise seem to involve predicatively used infinitival clauses (predicated of the noun phrases *deze appels* 'these apples' and *deze machine* 'this machine'), given that we cannot insert the adjective *bedoeld* in these cases: **met deze appels/machine bedoeld om ...*

(781) a. [Met deze appels om op te eten] zal ik niet verhongeren.
with these apples COMP up to eat will I not starve
'With these apples to eat I won't starve.'
b. [Met deze machine om het gras te maaien] gaat het werk snel.
with this machine COMP the lawn to mow goes the work quickly
'With this machine to mow the lawn, the work will proceed quickly.'

The discussion above has shown that it is not *a priori* clear whether or not we should analyze the *Om* + *te* clauses in the examples in (778) and (779) as complementives; we may be concerned with copular constructions taking an adjectival complementive the °head of which happens to remain phonetically empty. Future research must show what the correct analysis of such examples is; we refer the reader to Section A6.5.4.1, Paardekooper (1986; Section 2.18.11), Dik (1985), and Van Haaften (1985) for more discussion.

B. Te-*infinitives*

The examples in (782) can be analyzed as regular cases in which the *te*-infinitive functions as the complementive of a copular or *vinden*-construction. There are, however, reasons for doubting that the *te*-infinitive heads an infinitival clause. First, the fact that the *te*-infinitive must precede the copular in clause-final position is unexpected: (non-adverbial) infinitival clauses are normally found at the right periphery of the clause, that is, after the verbs in clause-final position.

(782) a. dat dat boek moeilijk/niet <te lezen> is <*te lezen>.
that that book hard/not to read is
'that that book is hard to read/illegible.'
b. dat ik dat boek moeilijk/niet <te lezen> vind <*te lezen>.
that I that book hard/not to read consider
'that I consider that book hard to read/illegible.'

Secondly, and more importantly, example (783) shows that the *te*-infinitive can also be used as an attributive modifier of a noun phrase. The fact that the attributive prenominal position is strictly reserved for adjectives clearly shows that the *te*-infinitive does not head an infinitival clause.

(783) de moeilijk/niet te lezen boeken
the hard/not to read books
'the books that are difficult to read/illegible'

Since the distribution of the *te*-infinitives in (782) and (783) clearly shows that we are dealing with adjective-like elements, such cases are discussed in Section A9.

C. Bare infinitives

Haeseryn et al. (1997;1129) provide copular constructions such as (784) as cases in which bare infinitival clauses function as complementives. The fact that the bare infinitives must precede the copular verb *worden* 'become' suggests, however, that we are not dealing with infinitival clauses but with nominalizations, that is, with copular constructions with a nominal complementive.

(784) a. dat het weer <tobben> wordt <*tobben>.
that it again fret becomes
'that it'll be struggling on somehow.'
b. dat het weer eendjes voeren wordt <*voeren>.
that it again ducks feed becomes
'that it'll be feeding the ducks again!.'

Haslinger (2007) has argued that examples such as (785a) involve nominal predicates. A potential problem with this assumption is that the string *is vissen* in certain ways behaves like a °verb cluster. Example (785a′), for example, shows that the corresponding perfect tense is not formed by means of the past participle *geweest* 'been', as would normally be the case if we are dealing with a nominal predicate, but exhibits what seems an °*infinitivus-pro-participio* effect; the (b)-examples are added for comparison. For this reason, Section 6.4.2 argues that the verb *zijn* is not a copular verb in examples such as (785a) but a non-main verb.

(785) a. Jan is vissen.
Jan is fish
'Jan is off fishing.'

a′. Jan is wezen/*geweest vissen.
Jan is be/been fish
'Jan has been off fishing.'

b. Jan is een goede pianist.
Jan is a good pianist
'Jan is a good pianist.'

b′. Jan is een goede pianist geweest.
Jan is a good pianist been
'Jan has been a good pianist.'

D. Conclusion

The previous subsections have reviewed a number of constructions that have been claimed to involve infinitival clauses functioning syntactically as complementives. We have seen, however, that it is far from clear that the suggested analysis is correct; in some of these cases there is reason for doubting that the infinitival phrases function as complementives, and in the remaining cases there is reason for assuming that we are not dealing with clauses but with APs.

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6.4.3. *The non-main verb* doen *'to do'* *1041*

Introduction

Non-main verbs differ from main verbs in that they do not denote states of affairs, but express additional (e.g., aspectual) information about the state of affairs denoted by the main verb. This implies that non-main verbs are always accompanied by a main verb. In addition, constructions with non-main verbs are characterized by the fact that the embedded main verb is never finite; its projection functions as the complement of the non-main verb: [... $V_{\text{non-main}}$ [... $V_{[\text{-finite}]}$ …]]. This chapter discusses three types of non-main verbs that differ with respect to the form of the non-finite main verb they select. For example, perfect auxiliaries like *hebben* ‘to have’ select past participles, semi-aspectual verbs like *zitten* ‘to sit’ select *te*-infinitives, and aspectual verbs like *gaan* ‘to go’ select bare infinitives.

(1) a. Jan heeft dat boek *gelezen*. [perfect auxiliary]
Jan has that book read
‘Jan has read that book.’
b. Jan zit dat boek *te lezen*. [semi-aspectual verb]
Jan sits that book to read
‘Jan is reading that book.’
c. Jan gaat dat boek *lezen*. [aspectual verb]
Jan goes that book read
‘Jan will read that book.’

This chapter is organized as follows. Section 6.1 begins by reviewing a number of characteristic properties of non-main verbs and will further introduce the three subtypes illustrated in (1) above. Sections 6.2 through 6.4 will discuss these three subtypes in more detail.

6.1. Characteristics and typology of non-main verbs

Haeseryn et al. (1997:46) define main verbs as verbs expressing the core meaning of the °verbal complex, while non-main verbs are seen as modifier-like elements providing supplementary information. This semantic approach to the distinction between main and non-main verbs is generally felt to imply a “one-main-verb-only” criterion, according to which there is one single main verb in every structure that exhibits monoclausal behavior in the sense discussed in Section 4.6. Although we agree with the claim that non-main verbs provide supplementary information, we do not endorse the claim that structures exhibiting monoclausal behavior contain exactly one main verb. This is in keeping with Section 1.1, sub I, which defined main verbs as *n*-place predicates, that is, verbs that have the ability to take °arguments.

This introductory section is organized as follows. Subsection I starts by reviewing the term monoclausal behavior and some related problems. Subsection II will show that, given our definition of main verb, exhibiting monoclausal behavior is not sufficient for arguing that only the most deeply embedded verb is a main verb. Subsection III concludes by showing that, as a result, our definition of main verb greatly reduces the number of non-main verb classes that are normally distinguished in descriptive grammars.

I. Monoclausal behavior

Section 4.6 characterizes structures exhibiting monoclausal behavior by pointing to two prototypical properties. First, such structures exhibit °verb clustering/clause splitting: the verbs are placed together in clause-final position and the dependents of the most deeply embedded verb (e.g., nominal arguments and modifiers) must precede the cluster as a whole. Second, such structures exhibit the °infinitivus-pro-participio (IPP) effect in perfect-tense constructions with three or more verbs.

Table 1: Structures exhibiting mono- and biclausal behavior

	MONOCLAUSAL	BICLAUSAL
VERB CLUSTERING	+	—
INFINITIVUS-PRO-PARTICIPIO	+	—

The examples in (2) illustrate the monoclausal properties of structures containing the aspectual verb *komen*: example (2a) shows that the verbs cluster in clause-final position, which results in splitting the lexical °projection of the main verb *repareren* 'to repair', given in italics; example (2b) illustrates the IPP-effect.

(2) a. dat *Jan de televisie* komt *repareren*. [verb clustering]
that Jan the television comes repair
'that Jan will be here to repair the television.'
b. Jan is de televisie komen/*gekomen repareren. [IPP]
Jan is the television come$_{inf}$/come$_{part}$ repair
'that Jan has been here to repair the television.'

The two properties in Table 1 are neither necessary nor sufficient, however, for assigning non-main verb status to a certain verb. The examples in (3) show that exhibiting the IPP-effect is not a necessary condition—it does not occur in passive constructions despite the fact that passive auxiliaries are frequently seen as prototypical cases of non-main verbs. Note in passing that the percentage sign in (3b) indicates that most speakers from the Netherlands omit the participle *geworden* in the regular passive, whereas it is often realized by, especially, Flemish speakers.

(3) a. Marie zal Jan dat boek toesturen. [active]
Marie will Jan that book prt.-send
'Marie will send Jan that book.'
b. Dat boek is Jan toegestuurd ($^{\%}$geworden). [regular passive]
that book is Jan prt.-sent been
'That book has been sent to Jan.'
c. Jan heeft dat boek toegestuurd gekregen. [*krijgen*-passive]
Jan has that book prt.-sent got
'Jan has been sent the book.'

Although it is generally true for most speakers from the Netherlands that verb clustering leads to splitting of the lexical projection of the most deeply embedded verb, it is not entirely true that this always results in a structure in which the dependents of this verb precede the non-main verbs: verbal particles, for example, can remain adjacent to it, and the same holds for certain monosyllabic

°complementives; see the examples in (4) and the discussion in Section A6.2.4.1 for more details.

(4) a. dat Peter zijn kamer <op> gaat <op> ruimen.
that Peter his room up goes clear
'that Peter will clear up his room.'
b. dat Jan zijn kamer <schoon> gaat <schoon> maken.
that Jan his room clean goes make
'that Jan will clean his room.'

In fact, the restriction that verb clusters are impermeable by dependents of the embedded verb is even less strict for speakers of the Flemish variety of Standard Dutch, in which the verb cluster may easily include a wide variety of complementives, indefinite objects, etc. This means that we can only maintain that verb clustering is a necessary condition for assuming non-main verb status if we replace the stronger claim that verb clustering *requires* splitting of the lexical projection of the main verb by the weaker one that it makes splitting *possible*. The discussion in this chapter will show that there is a great deal of word order variation in verb clusters, especially those that contain a past or passive participle. Although the regional variation along the north/south dimension has been an intensively studied research topic since Pauwels (1953), we still found some gaps in the available information. We were fortunate in securing native-speakers judgments from the following Flemish speakers: Evie Coussé (East-Flanders), Benny de Decker (Province of Antwerp) and Reinhild Vandekerckhove (West-Flanders).

II. Monoclausal behavior is not sufficient for assuming non-main verb status

Subsection I has shown that, although the two tests in Table 1 for establishing whether or not we are dealing with a monoclausal structure normally provide reasonably reliable results for the speakers of Standard Dutch from the Netherlands, they are not without their problems in the light of the regional variation that we find. This subsection continues to show that the occurrence in a structure exhibiting monoclausal behavior is not sufficient for concluding that the term main verb should be reserved for the most deeply embedded verb (as most grammars do that adopt the "one-main-verb-only" criterion).

In example (5a), the verb *proberen* 'to try' clearly functions as a main verb semantically; it is a two-place predicate that expresses the core meaning of the main clause. That we are dealing with a two-place predicate is clear from the fact that the infinitival clause can be pronominalized, as shown by (5b).

(5) a. dat Jan heeft geprobeerd [(om) dat boek te lezen].
that Jan has tried COMP that book to read
'that Jan has tried to read the book.'
b. dat Jan dat heeft geprobeerd.
that Jan that has tried
'that Jan has tried that.'

Example (6) expresses virtually the same meaning as (5a), so that there is no semantic reason for assuming that the verb *proberen* functions as a non-main verb in this construction. Nevertheless, the structure exhibits monoclausal behavior, that is, verb clustering and the IPP-effect; see Section 5.2.2.3 for detailed discussion.

(6) dat Jan <*dat boek*> heeft proberen <**dat boek*> *te lezen*.
that Jan that book has try to read
'that Jan has tried to read that book.'

The examples in (5) and (6) thus show that, although the monoclausal properties in Table 1 are typically found with certain prototypical non-main verbs, it is not the case that they are restricted to these verbs. It suggests that exhibiting these properties is not sufficient for concluding that we are dealing with non-main verbs, and, for this reason, Section 4.6 proposed to simply define main verbs as *n*-place predicates; any verb that takes one or more arguments is a main verb.

On the assumption that subject/object pronouns always function as arguments, pronominalization of the projection of the infinitive can be used as a test for distinguishing between main and non-main verbs: infinitival clauses can only be pronominalized if selected by a main verb. The claim that the aspectual verb *gaan* in example (7a) is a non-main verb can therefore be supported by the fact illustrated by the corresponding primed example that the infinitival clause *(Jan) de televisie repareren* cannot be pronominalized; the number sign indicates that *Dat gaat* is only possible in the irrelevant reading "that can be done". That the verb *proberen* is a main verb is clear from the fact that pronominalization of the infinitival clause *de televisie te repareren* is possible.

(7) a. Jan gaat *de televisie* *repareren*.
Jan goes the television repair
'Jan is going to repair the television.'

a′. *Jan gaat dat. / #Dat gaat.
Jan goes that that goes

b. Jan probeert *de televisie* *te repareren*.
Jan tries the television to repair
'Jan is trying to repair the television.'

b′. Jan probeert dat.
Jan tries that
'Jan is trying that.'

Another difference between main and non-main verbs is that while the former can increase the number of nominal arguments in the sentence, the latter cannot. This is the reason why the two primed examples in (8) are discussed in different sections. Example (8a′) is discussed in Section 5.2.3.5, that is, as a case of a main verb with an infinitival argument clause, because the use of *hebben* goes hand in hand with the addition of the nominal argument *Jan*. Example (8b′), on the other hand, is discussed in this chapter on non-main verbs because the use of *hebben* does not affect the number of nominal arguments in the clause, at least not on the traditional assumption that the two arguments *Jan* en *Piet* are selected by the past participle *gekust* (but see Section 6.2.4 for some reasons not to adopt this view).

(8) a. Zijn auto staat in de garage.
his car stands in the garage
'His car is in the garage.'

a′. Jan heeft zijn auto in de garage staan.
Jan has his car in the garage stand
'Jan is keeping his car in the garage.'

b. Jan kust Piet.
Jan kisses Piet
'Jan is kissing Piet.'

b′. Jan heeft Piet gekust.
Jan has Piet kissed
'Jan has kissed Piet.'

III. Types of non-main verbs

By defining the distinction between main and non-main verbs in terms of their ability or inability to select arguments, the dividing line between the two will be drawn at a different place than in most descriptive grammars: the set of non-main verbs will be considerably reduced. This definition does not affect the set of non-main verbs selecting a participle (although Section 6.2.4 will provide reasons for assuming that perfect and passive auxiliaries are less different in this respect from their cognates with other semantic/syntactic functions than is normally assumed).

(9) • Non-main verbs selecting a participle
a. Perfect auxiliaries: *hebben* 'to have' and *zijn* 'to be'
b. Passive auxiliaries:
Regular passive: *worden* 'to be' and, possibly, *zijn*
Semi-passive: *krijgen* 'to get'

The set of non-main verbs selecting a *te*-infinitive, on the other hand, is substantially reduced. Whereas descriptive grammars normally assume that it includes the semi-aspectual verbs in (10a) as well as the modal verbs in (10b), the latter are excluded by our definition because they allow pronominalization of the infinitival clause and thus clearly have an argument structure: for instance, pronominalization of the infinitival clause in *Jan bleek zijn fiets verkocht te hebben* 'Jan turned out to have sold his bike' results in *Dat bleek* (lit.: that turned out). We indicate our exclusion of the modal verbs in (10b) from the set of non-main verbs by marking them with the number sign #.

(10) • Non-main verbs selecting a *te*-infinitive (traditional view)
a. Semi-aspectual verbs: *zitten* 'to sit', *liggen* 'to lie', *lopen* 'to walk', etc.
b. #Modal verbs: *lijken* 'to appear', *schijnen* 'to seem', *blijken* 'to turn out'

The set of non-main verbs selecting a bare infinitive is likewise reduced. Whereas more traditional grammars assume that this set includes at least the modal, causative and aspectual verbs in (11), our definition only includes the last category. The modal verbs are again excluded because they allow pronominalization of the infinitival clause, as will be clear from comparing *Jan moet dat boek lezen* 'Jan must read that book' with *Jan moet dat* (lit.: Jan must that). And the causative verbs are excluded because they typically add an additional nominal argument, as will be clear from comparing *Jan zingt een liedje* 'Jan is a song' with *Jan liet Marie een liedje zingen* 'Jan made Marie sing a song'. The number sign # indicates that we diverge from the more traditional view by excluding the verbs in (11a&b) from the set of non-main verbs.

(11) • Non-main verbs selecting a bare infinitive (traditional view)
a. #Modal verbs: *moeten* 'must', *kunnen* 'can', *willen* 'want', etc.
b. #Causative verbs: *laten*/*doen* 'to make'
c. Aspectual verbs: *gaan* 'to go'. *komen* 'to come', *zijn* 'to be'

This chapter on non-main verbs considers the verb types mentioned in (9) to (11) insofar as they are not marked by a number sign. The verbs marked by a number sign are discussed in Section 5.2 on main verbs taking an infinitival argument.

6.2. Non-main verbs selecting a participle

There are basically two types of non-main verbs selecting a participle: (i) the perfect auxiliaries *hebben* ‘to have’ and *zijn* ‘to be’ are used to form the perfect tenses and (ii) the passive auxiliaries *worden* ‘to be’, *zijn* ‘to have been’ and *krijgen* ‘to get’ are used to form passive constructions. Examples of the two types are given in (12). We will discuss the perfect and passive auxiliaries in separate sections.

(12) a. Jan heeft het boek gelezen. [perfect auxiliary]
Jan has the book read
‘Jan has read the book.’
b. Het boek wordt (door Jan) gelezen. [passive auxiliary]
the book is by Jan read
‘The book is read (by Jan).’

6.2.1. Perfect auxiliaries

Since many aspects of the semantic function of the perfect-tense constructions are dealt with in Section 1.5, we can be relatively brief here. Subsection I briefly indicates the function of the perfect auxiliaries, while Subsection II discusses the principal factors that determine whether *hebben* or *zijn* is used. Subsections III and IV continue with a discussion of the form of the verb immediately governed (selected by) the auxiliary in °verb clusters consisting of, respectively, two and three verbs, as well as the order of the verbs in such verb clusters. Subsection V argues that perfect-tense constructions typically exhibit monoclausal behavior and that they demonstrate this by showing that the main verb and its °argument can be separated by the perfect auxiliary. Subsection VI summarizes the discussion by formulating a number of descriptive generalizations capturing the facts discussed in Subsections I through V. Subsection VII concludes the discussion of perfect auxiliaries by showing that the perfect auxiliaries *hebben* and *zijn* can sometimes be mixed up with the (semi-)copulas *hebben* and *zijn*, and discusses how they can be kept apart.

I. The function of the auxiliaries hebben *and* zijn

The perfect auxiliaries *hebben* and *zijn* are used to form perfect tenses: whereas the simple present in the primeless examples in (13) presents the eventualities of *Marie walking on the moor* and *Jan reading a book* as ongoing events in the present-tense interval, the present perfect in the primed examples presents the same eventualities as discrete units that are bounded within the present-tense interval. There are reasons, however, not to hold the auxiliary but the past participle responsible for the expression of this perfective meaning aspect; we refer the reader to Section 6.2.4 for the motivation of this claim, and to Section 1.5.1 for a more detailed discussion of the semantic interpretation of the present/past perfect tenses.

(13) a. Marie wandelt op de hei.
Marie walks on the moor
‘Marie is walking on the moor.’
a′. Marie heeft op de hei gewandeld.
Marie has on the moor walked
‘Marie has walked on the moor.’
b. Jan leest een boek.
Jan reads a book
‘Jan is reading a book.’
b′. Jan heeft een boek gelezen.
Jan has a book read
‘Jan has read a book.’

II. The choice between hebben *and* zijn

The choice between the perfect auxiliaries *hebben* and *zijn* is related to the status of the verb that they select: *zijn* ‘to be’ is used with °telic °unaccusative verbs, whereas *hebben* is used in all other cases; see Table 3 in Section 2.1.2, sub V, and Table 5 in Section 2.1.3, sub IIH. In order not to have to repeat the detailed discussion of unaccusativity and its relevance for auxiliary selection in Section 2.1, we will illustrate the role of unaccusativity here by means of the °monadic verbs *lachen* ‘to laugh’ and *vallen* ‘to fall’ only. The verb *lachen* is not unaccusative as is clear from the fact that it allows impersonal passivization; it therefore takes *hebben* as its perfect auxiliary. The verb *vallen* is an unaccusative verb as is clear from the fact that the participle can be used as an attributive modifier of a noun that corresponds to the subject of the corresponding active sentence; it therefore takes *zijn* as its perfect auxiliary.

(14) a. Jan heeft gelachen.
Jan has laughed
‘Jan has laughed.’
a′. Er wordt gelachen.
there is laughed
a″. *de gelachen man
the laughed man
b. Jan is gevallen.
Jan is fallen
‘Jan has fallen.’
b′. *Er wordt gevallen.
there is fallen
b″. de gevallen man
the fallen man

The role of °telicity can be demonstrated by means of the examples in (15). The unaccusative verbs *drijven* ‘to float’ and *bloeden* ‘to bleed’ are atelic and therefore take *hebben* as their perfect auxiliary. However, when we add the °complementives *weg* ‘away’ and *dood* ‘dead’, the constructions as a whole become telic and, as a result, the verbs take the perfect auxiliary *zijn*. For a more detailed and systematic discussion of unaccusativity and telicity, as well as their relevance for auxiliary selection, we refer the reader to Section 2.1.

(15) a. De bal drijft (weg).
the ball floats away
‘The ball is floating (away).’
b. De bal heeft/*is gedreven.
the ball has/is floated
c. De bal is/*heeft weg gedreven.
the ball is/has away floated
a′. Jan bloedt (dood).
Jan bleeds dead
‘Jan is bleeding (to death).’
b′. Jan heeft/*is gebloed.
Jan has/is bled
c′. Jan is/*heeft dood gebloed.
Jan is/has dead bled

Another factor that needs mentioning is that for some (especially Flemish) speakers the choice between *hebben* and *zijn* is not necessarily determined by the verb that it immediately governs but may also be determined by some more deeply embedded verb. In (16), the verb *moeten* selects the auxiliary *hebben* but nevertheless some speakers allow or even prefer *zijn* because the more deeply embedded unaccusative verbs *komen* ‘to come’ and *gaan* ‘to go’ select *zijn*; example (16a) is taken from Haeseryn et al. (1997:81) and example (16b) is provided by one of our own Flemish informants.

(16) a. Ze hebben/$^{\%}$zijn niet kunnen komen.
they have/are not can come
‘They haven’t been able to come.’
b. Marie heeft/$^{\%}$is vanmorgen moeten gaan zwemmen.
Marie has/is this.morning must go swim
‘Marie has had to go swimming this morning.’

III. Form and placement of the governed verb in clusters of two verbs

The projection of the main verb is embedded under the finite auxiliary: the representation is [... Aux [... V$_{\text{[-finite]}}$ ...]]. We may therefore assume that the morphological form of the main verb is governed by the auxiliary (in the same way that a main verb may °govern the case form of its nominal arguments in languages that have morphological case). The examples in the previous subsections have already shown that the non-finite main verb governed by the perfect auxiliary surfaces as a past participle if the verb cluster consists of no more that two verbs, that is, if the clause contains no other verbs than the perfect auxiliary and the main verb; if the verb surfaces as an infinitive, the resulting structure is unacceptable. This is illustrated in the examples in (17).

(17) a. Jan heeft dat boek gelezen/*lezen.
Jan has that book read$_{\text{part}}$/read$_{\text{inf}}$
‘Jan has read that book.’
b. Marie is naar Utrecht gewandeld/*wandelen.
Marie is to Utrecht walked$_{\text{part}}$/walk$_{\text{inf}}$
‘Marie has walked to Utrecht.’

A phenomenon that has attracted a great deal of attention in the syntactic descriptions of Dutch is that the auxiliary and the main verb do not have a fixed place with respect to each other in clause-final position: the examples in (18) show that past participles may either precede or follow the finite auxiliary.

(18) a. dat Jan dat boek <gelezen> heeft <$^{\%}$gelezen>.
that Jan that book read has
‘that Jan has read that book.’
b. dat Marie naar Utrecht <gewandeld> is <$^{\%}$gewandeld>.
that Marie to Utrecht walked is
‘that Marie has walked to Utrecht.’

When we consider the regional spread of the two word orders, it seems that the order AUX–PART is only found in a restricted part of the Dutch-speaking area, which happens to include the prestigious varieties of the standard language spoken in the west/middle region of this area; the maps in Pauwels (1953), Gerritsen (1991) and Barbiers et al. (2005) all show that this order is rare in the varieties of Dutch spoken in Flanders and the northern part of the Netherlands. For this reason we have marked this order with a percentage sign.

Speakers who allow the order AUX–PART normally also allow the order PART-AUX. There is reason for assuming that the latter order (PART-AUX) is in fact the unmarked one for such speakers given that Barbiers et al. (2005) found that they rarely invert this order in reproduction tasks.

It now seems generally accepted that the use of the AUX–PART order is characteristic for written Dutch and the more formal registers of spoken Dutch (despite that it frequently occurs in the more casual speech of many speakers); see Haeseryn (1990:ch.2) for a good review of the relevant literature on this issue. A corpus analysis by De Sutter (2005/2007) suggests that even in written Dutch the AUX–PART order is secondary since this order is mainly used in relatively simple sentences; there is a negative correlation between the complexity of utterances and the frequency of the AUX–PART order.

The finding that the AUX–PART order is marked (perhaps even artificial) for most speakers of Dutch seems to be in line with the fact that this order was introduced in the 16th century and diligently promoted by normative grammarians, and that it still seems to be prescribed for journals and newspapers; see Coussé (2008:ch.10) and Van der Horst (2008:1984ff.). The attempt to promote this order has in fact been very successful since for most present-day speakers who allow this order, it simply functions as an alternative realization of the more widely accepted PART-AUX order.

The factors favoring the selection of one order over the other are complex and have only been investigated for written language. The studies reviewed in Haeseryn (1990:46ff.), for example, provide evidence that the presence of a verbal particle or some other accent-bearing material preceding the verb cluster favors the use of the AUX-PART order, whereas the presence of material following the verb cluster disfavors it. De Sutter's (2005/2007) tested some of the more specific claims made in the literature on the basis of a more recent newspaper corpus, and found that:

(19) The AUX-PART order is favored by:
  a. the presence of a verbal particle or some other element that forms a fixed collocation with the participle;
  b. a more extensive middle field (> 2 words);
  c. a high information value of the word preceding the clause-final verb cluster;
  d. a non-complement (adjunct) in preverbal positions.

De Sutter further found that participles with a high frequency occur more often in the AUX-PART order than participles that are less common, and that there is a syntactic persistency effect: the word order of a verb cluster used earlier in the discourse is likely to be repeated. Contrary to the earlier studies, De Sutter did not find a significant effect of accent; he attributes this to the fact that his corpus consists of written sources, but the same thing holds for most of the other studies, One might therefore speculate that the difference is related to the fact that the earlier studies were based on literary texts (dating from the first half of the 20th century), whereas De Sutter's data is taken from a (Flemish) newspaper.

IV. Form and placement of the governed verb in clusters of three or more verbs

In finite monoclausal structures containing three verbs, the perfect auxiliary may be the finite, that is, structurally highest verb or a non-finite, that is, a more deeply embedded verb. Examples illustrating this are given in (20), in which the subscripts indicate the type of verb we are dealing with. We will discuss the two constructions in separate subsections; we start in Subsection A with examples such as (20a) in which the perfect auxiliary is itself governed by a finite verb and Subsection B continues with examples such as (20b) in which the perfect auxiliary is finite.

(20) a. Jan *moet* dat boek *hebben* *gelezen*. [... Modal [... Aux [... V ...]]]
Jan must$_{modal}$ that book have$_{aux}$ read$_{main}$
'Jan had to have read that book.'
b. Jan *heeft* dat boek *moeten* *lezen*. [... Aux [... Modal [... V ...]]]
Jan has$_{aux}$ that book must$_{modal}$ read$_{main}$
'Jan has had to read that book.'

A. Verb clusters of the form V_{finite} - $Aux_{non\text{-}finite}$ - V_{main}

This subsection discusses finite monoclausal structures with three verbs in which the perfect auxiliary surfaces as a non-finite verb. At first sight, such structures do not seem very special: (i) the auxiliary governs the main verb, which surfaces as a past participle, and (ii) the past participle may either precede or follow the auxiliary (just as in embedded clauses with two verbs discussed in Subsection III). The first property, which implies that the main verb cannot be realized as an infinitive, is illustrated in the examples in (21).

(21) a. Jan moet dat boek hebben gelezen/*lezen.
Jan must that book have read$_{part}$/read$_{inf}$
'Jan must have read that book.'
b. Marie moet vroeg zijn vertrokken/*vertrekken.
Marie must early be left$_{part}$/leave$_{inf}$
'Marie must have left early.'

With respect to the order of the auxiliary and the past participles, the same proviso must be made as in Subsection III, namely that the AUX -PART order is only found in a restricted part of the Dutch-speaking area, which happens to include the prestigious varieties of the standard language spoken in the west/middle region of this area. More generally, it seems that the PART-AUX order is the more common one in speech (although we should mention that, to our knowledge, the variation in word order of the clause-final verbs in *main* clauses with three verbs has not been systematically investigated). The subscripts in (22) are added for convenience, to indicate whether the verb in question is finite, an infinitive or a past participle.

(22) a. Jan moet dat boek <gelezen> hebben <$^{\%}$gelezen>.
Jan must$_{finite}$ that book read$_{part}$ have$_{inf}$
'Jan must have read that book.'
b. Marie moet vroeg <vertrokken> zijn <$^{\%}$vertrokken>.
Marie must$_{finite}$ early left$_{part}$ be$_{inf}$
'Marie must have left early.'

The examples in (23) show, however, that the placement options of the past participle in embedded clauses are somewhat surprising. Given that the participle is governed by the auxiliary we would expect these verbs to be adjacent, but as a matter of fact they can be separated by the finite modal verb.

(23) a. dat Jan dat boek <gelezen> moet <gelezen> hebben <$^{\%}$gelezen>.
that Jan that book read$_{part}$ must$_{finite}$ have$_{inf}$
'that Jan must have read that book.'
b. dat Marie vroeg <vertrokken> moet <vertrokken> zijn <$^{\%}$vertrokken>.
that Marie early left$_{part}$ must$_{finite}$ be$_{inf}$
'that Marie must have left early.'

For many speakers, the three word orders can be seen as more or less free alternates, with the V$_{FIN}$–AUX–PART order *moet hebben gelezen* being the more marked one. That this order is the more marked one seems to be confirmed by the regional distribution of these orders given in Table (24) for the sequence *moet hebben gemaakt* 'must have made'; whereas speakers regularly indicate that they only accept one of the orders in (24b-d), there is just one speaker who indicates that (s)he only accepts (24a). Speakers who report that they only allow (24b) are mainly found in Flanders, whereas speakers who report that they only allow (24c) are spread over the Netherlands. The low frequency of order (24d) is due to the fact that it is only found in the northern parts of the Netherlands, which, in turn, may be related to the fact that this is the order normally found in Frisian (as well as Standard German). The data in (24) are taken from Barbiers et al. (2008).

(24) Order of verbs in the sequence V$_{finite}$–Aux–Part

	ORDER OF VERBS	TOTAL #	TOTAL # AS ONLY ORDER
a.	V$_{finite}$–Aux–Part (moet hebben gemaakt)	91	1
b.	V$_{finite}$–Part–Aux (moet gemaakt hebben)	163	48 (Flanders)
c.	Part–V$_{finite}$–Aux (gemaakt moet hebben)	186	28 (Netherlands)
d.	Part–V$_{finite}$–Aux (gemaakt hebben moet)	48	30 (Northern Netherlands)

The literature reviewed in Haeseryn (1990:54ff.) further suggests that the order V$_{FIN}$–PART–AUX order is especially popular in the varieties of Dutch spoken in Flanders, whereas speakers from the Netherlands generally prefer the order PART–V$_{FIN}$–AUX; see also Stroop (2009) for the same finding on the basis of the *Corpus Gesproken Nederlands*. The order V$_{FIN}$–AUX–PART is again characteristic for (but not restricted to) written and formal Dutch.

Clusters of more than three verbs are possible but less frequent in colloquial speech. If the auxiliary immediately governs the (most deeply embedded) main verb, the principles underlying the form of the main verb and the order of the verbs are the same as in the case of three verbs: the main verb surfaces as a past participle, which may occur as the last verb of the verb cluster but may also occur more to the left. This is illustrated in (25) for the cluster *zou kunnen hebben gezien* 'might have seen'.

(25) a. dat Jan die film zou kunnen hebben gezien.
that Jan that movie would$_{modal}$ may$_{modal}$ have$_{aux}$ seen$_{main}$
'that Jan might have seen that movie.'
b. dat Jan die film zou kunnen gezien hebben.
c. dat Jan die film zou gezien kunnen hebben.
d. dat Jan die film gezien zou kunnen hebben.

To our knowledge, not much information is available about spread of the orders in (25). The literature reviewed in Haeseryn (1990:70ff.) suggests that the orders in (25a&d) are the ones commonly found in the northern varieties of Standard Dutch, and that the order (25c) is more favored than (25b). In the varieties of Standard Dutch spoken in Belgium, on the other hand, the order in (25b) seems to be a common one.

The discussion above has shown for the northern varieties of Standard Dutch that in perfect-tense constructions of the sort under discussion the past participle of the main verb may follow or precede the complete verb cluster or be placed in between any two verbs in the verb cluster. This is illustrated in (26), in which V^n stands for zero or more verbs in the verb cluster besides the auxiliary and the main verb; the angled brackets indicate the alternative placements of the participle.

(26) • Order in verb sequences of the form V^n - Aux$_{\text{perfect}}$ - V$_{\text{main}}$
a. dat ..... <Part> aux$_{\text{finite}}$ <Part>
b. dat ..... <Part> V$_{\text{finite}}$ <Part> aux$_{\text{inf}}$ <Part>
c. dat ..... <Part> V$_{\text{finite}}$ <Part> V$_{\text{inf}}$ <Part> aux$_{\text{inf}}$ <Part>
d. dat ..... <Part> V$_{\text{finite}}$ <Part> V$_{\text{inf}}$ <Part> V$_{\text{inf}}$ <Part> aux$_{\text{inf}}$ <Part>
e. etc.

Although Barbiers et al. (2005) show that other orders can be found in certain dialects of Dutch, the orders in (26) exhaust the possibilities for the vast majority of Dutch speakers. Most speakers will in fact use only a subset of the word order possibilities in (26). Recall that clusters of more than three verbs are rare in everyday speech, and even in formal speech and complex written language the number of verbs will normally be limited to a maximum 4 of 5.

B. Verb clusters of the form aux$_{\text{finite}}$ - V$_{\text{non-finite}}$ - V$_{\text{main}}$

This subsection discusses finite monoclausal structures with three verbs in which the perfect auxiliary surfaces as the finite verb. Such structures arise not only if the auxiliary governs a non-main verb like the (semi-)aspectual verbs *gaan* and *zitten* in (27a&b), but also if it governs a main verb that selects a transparent infinitival clause, like the deontic modal verb *moeten* 'be obliged' in (27c) or the perception verb *zien* 'to see' in (27d).

(27) a. Marie is vanmorgen gaan zwemmen.
Marie is$_{\text{aux}}$ this.morning go$_{\text{aspectual}}$ swim$_{\text{main}}$
'Marie went for a swim this morning.'
b. Jan heeft een boek zitten lezen.
Jan has$_{\text{aux}}$ a book sit$_{\text{semi-aspectual}}$ read$_{\text{main}}$
'Jan has been reading a book.'
c. Jan heeft dit boek moeten lezen.
Jan has$_{\text{aux}}$ this book must$_{\text{modal}}$ read$_{\text{main}}$
'Jan has had to read this book.'
d. Jan heeft Peter dat boek zien lezen.
Jan has$_{\text{aux}}$ Peter that book see$_{\text{perception}}$ read$_{\text{main}}$
'Jan has seen Peter read that book.'

The most conspicuous phenomenon in examples such as (27) is the so-called °*infinitivus-pro-participio* (IPP) effect, that is, that the non-finite verb governed by the auxiliary does not surface as a past participle but as an infinitive: the examples in (28) illustrate this by showing that substituting a past participle for the relevant infinitival verbs in (27) leads to ungrammaticality.

(28) a. Marie is vanmorgen gaan/*gegaan zwemmen.
Marie is this.morning go$_{inf}$/gone$_{part}$ swim
b. Jan heeft een boek zitten/*gezeten lezen.
Jan has a book sit$_{inf}$/sat$_{part}$ read
c. Jan heeft dit boek moeten/*gemoeten lezen.
Jan has$_{aux}$ this book must$_{inf}$/must$_{part}$ read
d. Jan heeft Peter dat boek zien/*gezien lezen.
Jan has$_{aux}$ Peter that book see$_{inf}$/seen$_{prt}$ read$_{main}$

Another property is that the word order of the verb cluster is very strict in most northern varieties of Dutch. In main clauses such as (27) the verb selected by the perfect auxiliary must precede the main verb: the examples in (29) show that reversing the order of the two clause-final verbs leads to degraded results.

(29) a. *Marie is vanmorgen zwemmen gaan.
Marie is$_{aux}$ this.morning swim$_{main}$ go$_{aspectual}$
b. *Jan heeft een boek lezen zitten.
Jan has$_{aux}$ a book read$_{main}$ sit$_{semi-aspectual}$
c. *Jan heeft dit boek lezen moeten.
Jan has$_{aux}$ this book read$_{main}$ must$_{modal}$
d. *Jan heeft Peter dat boek lezen zien.
Jan has$_{aux}$ Peter that book read$_{main}$ see$_{perception}$

In embedded clauses the word order is also very strict. This holds not only for the two non-finite verbs, which again exhibit the order in (27), but also for the finite auxiliary and the two infinitival verbs; the auxiliary must precede them.

(30) a. dat Marie vanmorgen is gaan zwemmen.
that Marie this.morning is$_{aux}$ go$_{aspectual}$ swim$_{main}$
'that Marie went for a swim this morning.'
b. dat Jan een boek heeft zitten lezen.
that Jan a book has$_{aux}$ sit$_{semi-aspectual}$ read$_{main}$
'that Jan has been reading a book.'
c. dat Jan dit boek heeft moeten lezen.
that Jan this book has$_{aux}$ must$_{modal}$ read$_{main}$
'that Jan has had to read this book.'
d. dat Jan Peter dat boek heeft zien lezen.
that Jan Peter that book has$_{aux}$ see$_{perception}$ read$_{main}$
'that Jan has seen Peter read that book.'

Any other order than in (30) gives rise to a severely degraded result. This implies that the perfect-tense constructions under discussion here differ markedly from the perfect-tense constructions discussed in Subsection A in that the auxiliary cannot be preceded by the verb it immediately dominates. We illustrate this in (31) for the modal construction in (30c): the auxiliary cannot be preceded by the modal regardless of the position of the more deeply embedded main verb.

(31) a. dat Jan dit boek heeft moeten lezen.
that Jan this book has$_{aux}$ must$_{modal}$ read$_{main}$
b. *dat Jan dit boek moeten heeft lezen.
that Jan this book must$_{modal}$ has$_{aux}$ read$_{main}$
c. *dat Jan dit boek moeten lezen heeft.
that Jan this book must$_{modal}$ read$_{main}$ has$_{aux}$
d. *dat Jan dit boek moeten lezen heeft.
that Jan this book must$_{modal}$ read$_{main}$ has$_{aux}$

In short, it seems that in the northern varieties of Standard Dutch the verb clusters can only be realized in the order in (32a), all the other logically possible orders being severely degraded. This is remarkable given that Barbiers et al (2005) show that the orders marked with a percentage sign are relatively common in specific regional varieties of Dutch: the order in (32e) can be found in Flanders, and the order in (32f) in the northern part of the Netherlands, especially Frisian. The order in (32b) is relatively rare but is reported by various speakers around the IJsselmeer; it is also the order normally found in Standard German. The orders marked with a star are rare and do certainly not occur as the dominant orders.

(32) • Order in verb sequences of the form: aux$_{finite}$ - V$_{non\text{-}finite}$ - V$_{main}$
a. aux$_{finite}$ - V$_{non\text{-}finite}$ - V$_{main}$ (heeft moeten lezen)
b. $^{\%}$aux$_{finite}$ - V$_{main}$ - V$_{non\text{-}finite}$ (heeft lezen moeten)
c. *V$_{main}$ - aux$_{finite}$ - V$_{non\text{-}finite}$ (lezen heeft moeten)
d. *V$_{non\text{-}finite}$ - aux$_{finite}$ - V$_{main}$ (moeten heeft lezen)
e. $^{\%}$V$_{non\text{-}finite}$ - V$_{main}$ - aux$_{finite}$ (moeten lezen heeft)
f. $^{\%}$V$_{main}$ - V$_{non\text{-}finite}$ - aux$_{finite}$ (lezen moeten heeft)

It will not come as a surprise after the discussion above that in longer verb clusters with IPP the order of the verbs is also very strict. We illustrate this in (33) and (35) for verb clusters consisting of four verbs. The examples in (33) differ from those given in (30) in that we have added an epistemic modal verb, which surfaces as the finite verb. Any change in the order of the verbs will give rise to a degraded result in the northern varieties of Standard Dutch.

(33) a. dat Marie vanmorgen moet zijn gaan zwemmen.
that Marie this.morning must$_{modal}$ be$_{aux}$ go$_{aspectual}$ swim$_{main}$
'that Marie must have gone for a swim this morning.'
b. dat Jan een boek moet hebben zitten lezen.
that Jan a book must$_{modal}$ have$_{aux}$ sit$_{semi\text{-}aspectual}$ read$_{main}$
'that Jan must have been reading a book.'
c. dat Jan dit boek zal hebben moeten lezen.
that Jan this book will$_{modal}$ have$_{aux}$ must$_{modal}$ read$_{main}$
'that Jan has will have been obliged to read this book.'
d. dat Jan Peter dat boek moet hebben zien lezen.
that Jan Peter that book must$_{modal}$ have$_{aux}$ see$_{perception}$ read$_{main}$
'that Jan must have seen Peter read that book.'

The southern varieties of Standard Dutch, on the other hand, have more options. This is illustrated by means of the examples in (34) taken from Haeseryn (1990:72). Whereas the relevant northern varieties of Dutch only allow the order in (34a), the order in (34b) is common in the varieties found in Belgium; the order in (34a) is reported to also be possible in these varieties.

(34) a. dat ze zich wel zal hebben moeten haasten.
that she REFL PRT. will$_{modal}$ have$_{aux}$ must$_{modal}$ hurry$_{main}$
'that she'll probably have had to rush.'
b. %dat ze zich wel zal moeten haasten hebben.
c. %dat ze zich wel moeten haasten zal hebben.

The examples in (35) differ from the ones given in (30) in that we added a deontic/dynamic modal verb, which surfaces as an infinitive (either before or after the non-finite verb originally dominated by the auxiliary); examples with two non-epistemic modals, such as (35c), are perhaps somewhat marked, but can readily be found on the internet. Any change in the order of the verbs will give rise to a degraded result in the northern varieties of Dutch.

(35) a. dat Marie vanmorgen heeft moeten gaan zwemmen.
that Marie this.morning has$_{aux}$ must$_{modal}$ go$_{aspectual}$ swim$_{main}$
'that Marie has had to go for a swim this morning.'
b. dat Jan een boek heeft moeten zitten lezen.
that Jan a book has$_{aux}$ must$_{modal}$ sit$_{semi\text{-}aspectual}$ read$_{main}$
'that Jan has had to read a book.'
c. dat Jan dit boek heeft moeten kunnen lezen.
that Jan this book has$_{aux}$ must$_{modal}$ can$_{modal}$ read$_{main}$
'that Jan has had to be able to read this book.'
d. dat Jan Peter dat boek heeft moeten zien lezen.
that Jan Peter that book has$_{aux}$ must$_{modal}$ see$_{perception}$ read$_{main}$
'that Jan has had to see Peter read that book.'

Some of our Flemish informants also allow the perfect auxiliary in final position. In their variety an example such as (35a) would surface as *dat Marie moeten gaan zwemmen heeft*/*is*, where the use of *zijn* is due to the fact that auxiliary selection is preferably determined by the more deeply embedded aspectual verb *gaan*; see Subsection II.

V. Clause splitting and permeation of the clause-final verb cluster

Subsection IV has shown that perfect-tense constructions may give rise to the IPP-effect, which can be seen as a hallmark of verbs entering a °verbal complex; cf. Section 4.4.2. The monoclausal behavior of sentences in the perfect tense is also evident from the fact that the main verb can be separated from its arguments and adverbial modifiers by the auxiliary in clause-final position. This is illustrated in (36a) for the main verb *lezen* 'to read' and its nominal direct object and in (36b) for the main verb *rennen* 'to run' and the adverbial manner phrase *hard* 'fast'.

(36) a. dat Jan *een boek* heeft *gelezen*.
that Jan a book has read
‘that Jan has read a book.’
b. dat Peter *hard* heeft *gerend*.
that Peter fast has run
‘that Peter has run fast.’

Under the plausible assumption that perfect auxiliaries take a lexical °projection of the main verb as their complement, examples like (36a&b) are surprising given that we expect the main verb and its complements/modifiers to be adjacent. For OV-languages like English, for example, this adjacency requirement would correctly predict that the main verb and its arguments/modifiers are invariably placed after the auxiliary.

(37) a. John [has [read a book]].
b. Peter [has [run fast]].

If we adopt the more traditional assumption that Dutch is an OV-language, we would expect that the main verb and its arguments would normally precede the auxiliary, as in the primeless examples in (38). Any other word order requires additional stipulations; the orders in the primed examples in (38), for instance, are traditionally assumed to be derived by the movement operation Verb Raising, which extracts the main verb from its lexical projection and adjoins it to the auxiliary; see Evers (1975).

(38) • Verb Raising analysis
a. dat Jan [[een boek gelezen] heeft].
that Jan a book read] has
a′. dat Jan [[een boek t_{gelezen}] heeft+gelezen].
b. dat Peter [[hard gerend] heeft].
that Peter fast run has
b′. dat Peter [[hard t_{gerend}] heeft+gerend].

In Section 4.4.2, sub II, we noted that several alternatives have been developed for the Verb Raising analysis in (38), but all of them have in common that they have to account in some way for the fact that the lexical projection of the main verb can be split. We will not review these proposals here but confine ourselves to giving a detailed description of the facts pertaining to the discontinuity of the lexical projection of the main verb that these proposals should be able to account for. The following subsections discuss a number of constituents that can be expected to originate within the lexical projection of the main verb (°arguments, °complementives and °VP-adverbs) but can nevertheless be separated from the main verb by the auxiliary in clause-final position in several different ways. This subsection will also discuss to what extent the clause-final verb cluster can be permeated by the dependents of the passivized main verb.

A. Direct objects

Dutch is an OV-language in the sense that nominal objects always precede their main verb in clause-final position: *dat Jan <een boek> leest <*een boek>* ‘that Jan is reading a book'. The northern varieties of Dutch have the additional restriction that nominal arguments can never permeate the verb cluster. This means that (in)direct objects can only precede the verb cluster as a whole. The examples in (39) illustrate this for cases with two verbs, that is, the perfect auxiliary and a main verb in the form of a past participle.

(39) a. dat Jan een boek gelezen heeft. [PART-AUX order]
that Jan a book read has
'that Jan has read a book.'
b. dat Jan <een boek> heeft <*een boek> gelezen. [AUX-PART order]
that Jan a book has read

Since the southern varieties of Dutch are not subject to the additional restriction that nominal arguments cannot permeate the verb cluster, one may expect the order marked as ungrammatical above to arise in these varieties. This is not the case, however, for the independent reason that these varieties require the past participle to precede the auxiliary; the AUX-PART order *heeft gelezen* in (39b) simply does not arise in these varieties, which leaves (39a) as the only option.

In the northern varieties the object also precedes verb clusters that consist of more than two verbs. The examples in (40) illustrate this for a sequence of three verbs in which the auxiliary is an infinitive: although the past participle *gelezen* 'read' may occur in several positions in the verb cluster, the nominal object must precede the verb cluster as a whole.

(40) a. dat Jan een boek gelezen moet hebben.
that Jan a book read must have
'that Jan must have read a book.'
b. dat Jan <een boek> moet <%een boek> gelezen hebben.
that Jan a book must read have
c. dat Jan <een boek> moet <*een boek> hebben <*een boek> gelezen.
that Jan a book must have read

Since the order of the verb cluster in (40b) is acceptable in the southern varieties of Dutch, we expect speakers of these varieties to accept the order marked with a percentage sign as acceptable. The judgments of our Flemish informants vary: some of them categorically reject examples of this type, whereas others accept them provided that the object is indefinite. That the order marked with a percentage sign is unacceptable for all southern speakers if the object is definite, may be due to the fact that definite noun phrases are more likely to be construed as presuppositional and are thus also more likely to be shifted into a more leftward position; see Section N8.1.3 for a discussion of this form of scrambling.

Example (41), finally, provides an instance with three verbs in which the perfect auxiliary is the finite verb. Although the infinitival main verb *lezen* can only occur at the end of the verb cluster, most speakers from the Netherlands require its object to precede the verb cluster as a whole.

(41) dat Jan <een boek> heeft <*een boek> moeten <$^{\%}$een boek> lezen.
that Jan a book has must read
‘that Jan has had to read a book.’

Again the judgments of our Flemish informants vary somewhat, but they all agree that permeation of the verb cluster is possible (for some as a marked option only), provided the object is adjacent to the main verb; if the main verb and its object in (41) are separated by the infinitive *moeten*, the result is unacceptable. We also refer the reader to Haegeman & Van Riemsdijk (1986:422ff.) for examples of this sort from West-Flemish.

B. Prepositional objects

Prepositional objects differ from nominal ones in that they do not have to precede the main verb in clause-final position but may also follow it: *dat Jan <op zijn vader> wacht <op zijn vader>* ‘that Jan is waiting for his father’. They are like nominal objects, however, in that they never permeate the verb cluster in the northern varieties of Dutch. This means that prepositional objects must either precede or follow the verb cluster as a whole. The examples in (42) illustrate this for cases with two verbs, that is, a perfect auxiliary and a main verb in the form of a past participle; in (42a) we find the PART-AUX order and in (42b) the AUX-PART order.

(42) a. dat Jan <op zijn vader> gewacht <*op zijn vader> heeft <op zijn vader>.
that Jan for his father waited has
‘that Jan has waited for his father.’
b. dat Jan <op zijn vader> heeft <*op zijn vader> gewacht <op zijn vader>.
that Jan for his father has waited

The examples in (43) illustrate the same thing for cases with three verbs in which the auxiliary is an infinitive. Although the past participle *gelezen* ‘read’ may be placed in several positions in the verb cluster, the prepositional object must either precede or follow the complete verb cluster; the prepositional object cannot occur in the positions marked by <*> or <%>.

(43) a. dat Jan <op zijn vader> gewacht <*> moet <*> hebben <op zijn vader>.
that Jan for his father waited must have
‘that Jan must have waited for his father.’
b. dat Jan <op zijn vader> moet <$^{\%}$> gewacht <*> hebben <op zijn vader>.
that Jan for his father must waited have
c. dat Jan <op zijn vader> moet <*> hebben <*> gewacht <op zijn vader>.
that Jan for his father must have waited

Since the order of the verb cluster in (43b) is acceptable in the southern varieties of Dutch, we expect again that speakers of these varieties will allow the word order marked by the percentage sign. The judgments of our southern informants again vary: some indicate that they would not use it, whereas others indicate that they fully accept this word order. Observe that permeation of the verb cluster is only possible if the prepositional object precedes the main verb: placement of the PP immediately after the main verb in (43b) is categorically excluded.

Example (44), finally, gives a similar case with three verbs in which the auxiliary is finite. Although the infinitival verb *lezen* can only occur at the end of the verb cluster, the northern varieties of Dutch require that prepositional objects either precede or follow the verb cluster as a whole; they cannot permeate the verb cluster.

(44) dat Jan <op zijn vader> heeft <%> moeten <%> wachten <op zijn vader>.
that Jan for his father has must wait
‘that Jan has had to read the book.’

The percentage signs between angled brackets in (44) indicate that, as in the case of indefinite noun phrases, our southern informants do accept permeation of the verb cluster; they disagree with respect to the question as to whether the prepositional object must be adjacent to the main verb—most of them require this, but one speaker prefers the position preceding *moeten*.

C. Object clauses

Object clauses differ from nominal and prepositional objects in that they obligatorily follow the main verb in clause-final position; examples such as (45b) are possible but trigger a so-called factive interpretation on the embedded clause; cf. Section 5.1.2.3. In what follows we will ignore such factive clauses.

(45) a. dat Jan zei [dat hij niet komt].
that Jan said that he not comes
‘that Jan said that he won’t come.’
b. #dat Jan [dat hij niet komt] zei.
that Jan [that he not comes] said

Like nominal and prepositional objects, object clauses never permeate the verb cluster, which means that object clauses can only follow the verb cluster as a whole. The examples in (42) illustrate this for cases with two verbs, that is, a perfect auxiliary and a main verb in the form of a past participle; the positions that do not accept the object clause are marked by <*>.

(46) a. dat Jan <*> gezegd <*> heeft [dat hij niet komt].
that Jan said has that he not comes
‘that Jan has said that he won’t come.’
b. dat Jan <*> heeft <*> gezegd [dat hij niet komt].
that Jan has said that he not comes

Example (47) provides similar cases with verb clusters of three verbs; placement of the object clause into any position further to the left will give rise to an unacceptable result.

(47) a. dat Jan <gezegd> moet <gezegd> hebben <gezegd> [dat hij niet komt].
that Jan said must have that he not comes
‘that Jan had to have said that he won’t come.’
b. dat Jan heeft moeten zeggen [dat hij niet komt].
that Jan has must say that he not comes
‘that Jan has had to say that he won’t come.’

D. Complementives and verbal particles

Complementives have a similar distribution as nominal objects. First, they must precede the main verb; cf. *dat Els het hek <oranje> verft <*oranje>* ‘that Els is painting the gate orange’. Second, complementives cannot normally permeate the verb cluster in the northern varieties of Dutch; see below for a more precise formulation of this claim. As a result, complementives normally precede the verb cluster as a whole. The examples in (48) illustrate this for cases with two verbs, that is, a perfect auxiliary and a main verb in the form of a past participle.

(48) a. dat Els het hek oranje geverfd heeft.
that Els the gate orange painted has
‘that Els has painted the gate orange.’
b. dat Els het hek <oranje> heeft <*oranje> geverfd.
that Els the gate orange has painted

The examples in (49) illustrate the same thing for cases with three verbs in which the auxiliary is an infinitive: although the northern varieties of Dutch allow the past participle *geverfd* ‘painted’ in several positions, the complementive must precede the verb cluster as a whole.

(49) a. dat Els het hek <oranje> geverfd zou hebben.
that Els the gate orange painted would have
‘that Els would have painted the gate orange.’
b. dat Els het hek <oranje> zou <$^{\%}$oranje> geverfd hebben.
that Els the gate orange would painted have
c. dat Els het hek <oranje> zou <*oranje> hebben <*oranje> geverfd.
that Els the gate orange would have painted

Given that the southern varieties of Dutch allow the order of the verb cluster in (49b), we expect them also to allow the word order marked by the percentage sign, and our southern informants indeed unanimously accept this order.

Example (50), finally, provides a similar case with three verbs in which the auxiliary is a finite verb. Although the infinitival verb *verven* ‘to paint’ can only occur at the end of the verb cluster, speakers of the northern varieties of Dutch require that the complementive precede the verb cluster as a whole.

(50) dat Els het hek <oranje> heeft <*oranje> moeten <$^{\%}$oranje> verven.
that Els the gate orange has must paint
‘that Els has had to paint the gate green.’

Our southern informants accept permeation of the verb cluster in constructions of this type without any problem, although they vary a little with respect to whether the complementive must be adjacent to the main verb; most speakers require this, but there is one speaker who merely prefers this and thus also accepts the order in (50) marked by an asterisk.

Section 2.2 has argued that verbal particles can also be considered complementives, and we therefore expect them to have the same distribution as the adjectival complementive *oranje* in the examples above. This is indeed borne out insofar as they must precede the main verb: cf. *dat Peter zijn moeder <op> belt*

<**op*> ‘that Peter is phoning his mother’. However, unlike adjectival complementives, the northern varieties of Dutch allow verbal particles to permeate the verb cluster. This is illustrated in (51b).

(51) a. dat Peter zijn moeder op gebeld heeft.
that Peter his mother prt. called has
‘that Peter has phoned his mother.’
b. dat Peter zijn moeder <op> heeft <op> gebeld.
that Peter his mother prt. has phoned

That verbal particles may permeate the verb cluster is also clear from the examples in (52b-c) and (53)—although speakers may have different preferences, all orders indicated seem to be acceptable; cf. Bennis (1992) and Koopman (1995). Note, however, that some speakers consider the orders marked by a question mark within parentheses less felicitous, which is reminiscent of the fact that most southern speakers of Dutch allow permeation of the verb cluster only when the adjectival complementive is adjacent to the main verb; see the discussion of (50) above.

(52) a. dat Peter zijn moeder <op> gebeld zou hebben.
that Peter his mother prt. called would have
‘that Peter would have phoned his mother’
b. dat Peter zijn moeder <op> zou <op> gebeld hebben.
that Peter his mother prt. would called have
c. dat Peter zijn moeder <op> zou <$^{(?)}$op> hebben <op> gebeld.
that Peter his mother prt. would have called

(53) dat Peter zijn moeder <op> heeft <$^{(?)}$op> moeten <op> bellen.
that Peter his mother prt. has must call
‘that Peter has had to phone his mother.’

The contrast between examples with an adjectival complementive and with a verbal particle is perhaps not as surprising as one might think at first sight, given that some speakers of the northern variety do allow adjectival complementives to permeate verb clusters if they consist of a single syllable: many of the orders marked as unacceptable in (48) to (50) greatly improve if we replace the polysyllabic adjective *oranje* ‘orange’ by the monosyllabic adjective *geel* ‘yellow’. Although the orders marked with a question mark within parentheses sometimes trigger a negative response, many speakers accept all orders as acceptable.

(54) a. dat Els het hek <geel> heeft <geel> geverfd.
that Els the gate yellow has painted
‘that Els has painted the gate yellow.’
b. dat Els het hek <geel> zou <$^{(?)}$geel> geverfd hebben.
that Els the gate yellow would painted have
b′. dat Els het hek <geel> zou <$^{(?)}$geel> hebben <geel> geverfd.
that Els the gate yellow would have painted
‘that Els would have painted the gate yellow.’
c. dat Els het hek <geel> heeft <$^{(?)}$geel> moeten <geel> verven.
that Els the gate yellow has must paint
‘that Els has had to paint the gate yellow.’

Speaker judgments seem to diverge more on verb clusters containing more than three verbs. Whereas Bennis (1992) claims that particles may be placed in any position in the verb cluster in (55a) as long as they precede the main verb, Koopman (1995) does not accept the placement indicated by %. A similar divergence of judgments arises concerning examples such as (55b) with complementives.

(55) a. dat ik Els de dokter <op> heb < op> willen <$^{\%}$op> laten <op> bellen.
that I Els the doctor up have want let phone
'that I've wanted to let Els call up the doctor.'
b. dat Els het hek <geel> heeft <geel> moeten <$^{\%}$geel> laten <geel> verven.
that Els the gate yellow has must let paint
'that Els has had to have the gate painted yellow.'

E. Nouns in N + V collocations

The nominal part of N + V collocations like *paardrijden* 'to ride a horse' and *pianospelen* 'to play the piano' may also permeate verb clusters. The placement options for the noun are more or less the same as for particles and monosyllabic complementives. In clusters with three verbs the noun may occur anywhere in the cluster as long as it precedes the main verb, although some speakers seem to disprefer the word orders marked with a question mark within parentheses.

(56) a. dat Els <paard> heeft <paard> gereden.
that Els horse has ridden
'that Els has ridden a horse.'
b. dat Els <paard> zou <paard> gereden hebben.
that Els horse would ridden have
b′. dat Els <paard> zou <$^{(?)}$paard> hebben <paard> gereden.
that Els horse would have ridden
'that Els would have ridden a horse.'
c. dat Els <paard> had <$^{(?)}$paard> willen <paard> rijden.
that Els horse had want ride
'that Els had wanted to come riding a horse.'

Judgments again diverge in clusters of more than three verbs; some speakers allow all orders, whereas some speakers do not accept the placement indicated by %.

(57) dat Els <paard> had <paard> willen <$^{\%}$paard> komen <paard> rijden.
that Els horse had want come play
'that Els would have wanted to come ride a horse.'

F. Manner adverbs

Manner adverbs also seem to be part of the lexical projection of the main verb. Like nominal arguments, they must precede the main verb: *dat Marie <snel> vertrok <*snel>* 'that Marie left quickly'. The northern varieties of Dutch have the additional restriction that manner adverbs never permeate the clause-final verb cluster, which means that they can only precede the verb cluster as a whole. The examples in (58) illustrate this for cases with two verbs, that is, a perfect auxiliary and a main verb in the form of a past participle.

(58) a. dat Marie snel vertrokken is. [PART-AUX order]
that Marie quickly left is
'that Marie has left quickly.'
b. dat Marie <snel> is <*snel> vertrokken. [AUX-PART order]
that Marie quickly is left

The examples in (59) illustrate the same thing for cases with three verbs in which the auxiliary is an infinitive: although the northern varieties of Dutch allow the past participle *vertrokken* 'left' in several positions, the manner adverb must precede the verb cluster as a whole.

(59) a. dat Marie snel vertrokken moet zijn.
that Marie quickly left must be
'that Marie must have left quickly.'
b. dat Marie <snel> moet <$^{\%}$snel> vertrokken zijn.
that Marie quickly must left be
c. dat Marie <snel> moet <*snel> zijn <*snel> vertrokken.
that Marie quickly must be left

As in the earlier cases, we expect our southern informants to accept permeation of the verb cluster, provided that the manner adverb is adjacent to the main verb; the word order option marked by a percentage sign is, however, reported to be marked if acceptable at all.

Example (60) provides a similar case with three verbs in which the auxiliary is a finite verb. Although the infinitival verb *vertrekken* can only occur at the end of the verb cluster, speakers of the northern varieties of Dutch require that the manner adverb precede the verb cluster as a whole.

(60) dat Marie <snel> heeft <*snel> moeten <$^{\%}$snel> vertrekken.
that Marie quickly has must leave
'that Marie has had to leave quickly.'

Most of our Flemish informants again indicate that, as expected by now, permeation of the verb cluster is acceptable provided that the manner adverb is adjacent to the main verb; see also Haegeman & van Riemsdijk (1986:443) for similar examples with the negative adverb *nie* 'not' from West-Flemish. One informant prefers the order marked with an asterisk.

VI. Some generalizations

The previous subsections have discussed perfect-tense constructions, that is, constructions that contain a perfect auxiliary (Subsection I). The perfect auxiliary can be *hebben* 'to have' or *zijn* 'to be' and the choice between them depends on the type of verb they °govern: the auxiliary *zijn* is used with °atelic unaccusative verbs, and *hebben* with all other verbs (Subsection II). The verb governed by the perfect auxiliary appears as a past participle provided that it does not govern some other verb itself; if it does, it surfaces as an infinitive, the IPP-effect (see Subsections III and IV). The auxiliary and the verb it governs can be part of a larger verb cluster. The word order in such sequences is determined by the two constraints in (61a&b), which apply in the fashion indicated in (61c).

(61) • Word order in the Dutch clause-final verb cluster:
a. A verb V_{n-1} that is governed by a verb V_n, follows V_n in the clause-final verb cluster: V_n - V_{n-1} ...... V_2 - V_1.
b. If the verb governed by the perfect auxiliary has the form of a past participle, it precedes at least one verb in the clausal verb cluster.
c. Constraint (61b) obligatorily/optionally overrides constraint (61a).

The statement in (61c) is given in two forms in order to account for the fact that there are at least two varieties of Dutch: one in which the past participle is never last and one in which it can be last in the verb cluster. The former system is derived if constraint (61b) obligatorily overrides constraint (61a), as this will require that the participle precede at least one verb in the clause-final verb cluster. The latter system is derived if constraint (61b) only optionally overrides constraint (61b): we will show below that this results in the Standard IPP-effect, constraint (61b) is satisfied vacuously, and the order of the verbs in the clause-final verb cluster is fully determined by the constraint in (61a) as a result; this derives the descriptive generalization in (32) from Subsection IV, repeated here as (62), according to which there is only one acceptable order in sequences of three (or more) verbs.

(62) • Order of $aux_{perfect}$ - $V_{non\text{-}finite}$ - V_{main}
a. aux_{finite} - $V_{non\text{-}finite}$ - V_{main} (heeft moeten lezen)
b. *aux_{finite} - V_{main} - $V_{non\text{-}finite}$ (heeft lezen moeten)
c. *V_{main} - aux_{finite} - $V_{non\text{-}finite}$ (lezen heeft moeten)
d. *$V_{non\text{-}finite}$ - aux_{finite} - V_{main} (moeten heeft lezen)
e. *$V_{non\text{-}finite}$ - V_{main} - aux_{finite} (moeten lezen heeft)
f. *V_{main} - $V_{non\text{-}finite}$ - aux_{finite} (lezen moeten heeft)

The Standard Dutch version of (61c), according to which constraint (61b) *optionally* overrules constraint (61a), applies in perfect-tense constructions with a past participle and derives descriptive generalization (26) from Subsection IV, repeated here as (63). Constraint (61a) determines the order of all verbs with the exception of the past participle, which, consequently, is allowed to precede the auxiliary or any other verb in the verb cluster.

(63) • Order of V^n - $aux_{perfect}$ - V_{main} in varieties with the AUX - PART order
a. dat ..... <Part> aux_{finite} <Part>
b. dat ..... <Part> V_{finite} <Part> aux_{inf} <Part>
c. dat ..... <Part> V_{finite} <Part> V_{inf} <Part> aux_{inf} <Part>
d. dat ..... <Part> V_{finite} <Part> V_{inf} <Part> V_{inf} <Part> aux_{inf} <Part>
e. etc.

The varieties of Dutch that do not allow the AUX-PART order take the more strict version of constraint (61c), according to which constraint (61b) *must* overrule constraint (61a). Note that this may not be sufficient to provide a full account of the variation found in Dutch since there are also varieties of Dutch that select an even smaller subset of the options in (64); see the discussion of Table (24). This might be accounted for by assuming that these varieties are subject to yet another constraint, namely, that the participle must (or must not) be adjacent to the auxiliary.

(64) • Order of V^n - $Aux_{perfect}$ - V_{main} in varieties without the AUX - PART order
a. dat ..... Part aux_{finite}
b. dat ..... <Part> V_{finite} <Part> aux_{inf}
c. dat ..... <Part> V_{finite} <Part> V_{inf} <Part> aux_{inf}
d. dat ..... <Part> V_{finite} <Part> V_{inf} <Part> V_{inf} <Part> aux_{inf}
e. etc.

Subsection V concluded by showing that the lexical projection of the main verb can be discontinuous: the perfect auxiliary (as well as other verbs in the verb cluster) may separate the main verb from various types of constituents that can be assumed to originate within its lexical projection: internal arguments, complementives (including verbal particles) and VP-adjuncts. The precise position of these elements depends on two parameters. The first parameter can be independently established and relates to whether the constituent in question precedes or follows the main verb in clause-final position. The second parameter involves the question as to whether the constituent can permeate the verb cluster. In tandem, these two parameters determine whether the constituent in question precedes, follows or may permeate the verb cluster (if the main verb is in such a position that this would not clash with the first parameter). The result for the northern varieties of Dutch is given in (65).

(65) Clause splitting in the northern varieties of Standard Dutch

	LEFT/RIGHT OF V	PERMEATION OF VERB CLUSTER	VERB CLUSTER		
			PRECEDES	PERMEATES	FOLLOWS
DIRECT OBJECT	left	—	+	—	—
PP-OBJECT	left/right	—	+	—	+
CLAUSAL OBJECT	right	—	—	—	+
COMPLEMENTIVE	left	+ (monosyllabic) — (polysyllabic)	+ +	— +	— —
PARTICLE	left	+	+	+	—
VP-ADVERB	left	—	+	—	—

For the southern varieties of Dutch we can put together a similar table, which differs in that more constituent types can permeate the verb cluster. Note that this table is not entirely accurate: we should add the additional constraint that constituents permeating the verb cluster are normally adjacent to the main verb. Note further that we have somewhat idealized the data by abstracting away from (i) the individual variation in the judgments of our southern informants, and (ii) the fact that southern speakers seem to be less inclined to accept permeation of the verb cluster if the main verb is a participle, that is, in sequences like *moet gelezen hebben* 'must read have' (V_{finite} - V_{part} - aux_{inf}). Acceptability judgments of speakers of the southern varieties of Dutch exhibit a great deal of variation which, of course, deserves a more careful investigation than we can deliver here.

(66) Clause splitting in the southern varieties of Dutch

	LEFT/RIGHT OF V	PERMEATION OF VERB CLUSTER	VERB CLUSTER		
			PRECEDES	PERMEATES	FOLLOWS
DIRECT OBJECT	left	+ (indefinite)	+	+ (indef.)	—
PP-OBJECT	left/right	+	+	+	+
CLAUSAL OBJECT	right	—	—	—	+
COMPLEMENTIVE	left	+	+	+	—
PARTICLE	left	+	+	+	—
VP-ADVERB	left	+	+	+	—

VII. How to recognize perfect auxiliaries?

The verbs *hebben* ‘to have’ and *zijn* ‘to be’ can be used in various other constructions as well. The examples in (67) show that *zijn* can also be used as a copular verb, that is, with a °complementive; see Sections N8.2, A6.2 and P4.2 for discussion of the three subtypes in (67).

(67) a. Jan is aardig.
Jan is nice
b. Jan is leraar.
Jan is teacher
‘Jan is a teacher.’
c. Jan is in de tuin.
Jan is in the garden

The verb *hebben* can also be used as a main verb, as in (68a), or as a semi-copular verb in constructions such as (68b), in which it alternates with verbs like *krijgen* and *houden*; See Sections 2.1.4 and A6.2.1, sub I, for a discussion of, respectively, main verb and semi-copular verb *hebben*.

(68) a. Jan heeft een nieuwe auto.
Jan has a new car
b. Hij heeft het raam open.
he has the window open
b′. Hij houdt het raam open.
he keeps the window open

Generally speaking, it will not be difficult to distinguish the perfect auxiliaries *hebben* and *zijn* from the uses of *hebben* and *zijn* in (67) and (68). The auxiliaries are always accompanied by a dependent main verb, while the main verbs *hebben* and *zijn* can occur without any other verb. It should be kept in mind, however, that adjectival complementives in (semi-)copular constructions may have the form of a participle. Such cases can be semantically distinguished from perfect-tense constructions in that they do not refer to completed past eventualities but to states. Furthermore, for northern speakers of Dutch past participles differ syntactically from adjectival complementives in that they may follow the verb *zijn*/*hebben*; see Section A9 for a more detailed discussion of adjectival participles.

(69) a. dat Jan het raam net <gesloten> heeft <gesloten>. [perfect tense]
that Jan the window just closed has
‘that Jan has just closed the window.’
b. dat het raam sinds vanmorgen <gesloten> is <*gesloten>. [copular]
that the window since this morning closed is
‘that the window is closed since this morning.’
c. dat Jan het raam meestal <gesloten> heeft <*gesloten>. [semi-copular]
that Jan the window generally closed has
‘that Jan has the windows generally closed (all day).’

6.2.2. Passive auxiliaries

Since passive constructions are extensively discussed in Section 3.2.1, this section on passive auxiliaries can be relatively short. After a brief review of the types of passive constructions that can be found in Dutch in Subsection I, Subsection II will show that there is some discussion on the precise extent of the set of passive auxiliaries. Subsection III continues with a discussion of the form of verbs governed by passive auxiliaries as well as their placement in the clause-final °verb cluster. Subsection IV demonstrates the monoclausal behavior of passive constructions by showing that they allow clause splitting: the passivized main verb can be separated by the passive auxiliary from constituents that are normally assumed to originate within its lexical projection, like internal arguments, complementives and VP-adverbs. Subsection V summarizes the discussion by formulating a number of descriptive generalizations that capture the facts discussed in Subsections I through IV. Subsection VI concludes the discussion of passive auxiliaries by showing that the passive auxiliaries can sometimes be confused with copulas, and discusses ways in which they can be recognized.

I. Types of passive constructions

Dutch differs from English in that it allows passivization of constructions without a nominal object; this gives rise to the so-called impersonal passive, which is illustrated in (70) by means of the intransitive verb *huilen* ‘to cry’ and the prepositional object verb *wachten (op)* ‘to wait (for)’.

(70) • Impersonal passive
a. Jan huilt. a′. Er wordt gehuild.
Jan cries there is cried
b. Peter wacht op een brief. b′. Er wordt op een brief gewacht.
Peter waits for a letter there is for a letter waited

The examples in (71) show that, like in English, passivization of transitive and ditransitive verbs is easily possible, but that Dutch differs from English in that it promotes the direct, and not the indirect, object to subject when the verb is ditransitive.

(71) • Regular passive

a. Jan beoordeelt het boek.
Jan evaluates the book

a′. Het boek wordt beoordeeld.
the book is evaluated

b. Jan stuurt ons het boek toe.
Jan sends us the book prt.

b′. Het boek wordt ons toegestuurd.
the book is us prt.-sent

Promotion of the indirect object to subject is possible, however, in the so-called *krijgen*-passive. This form of passivization is only possible with ditransitive verbs and does not use the auxiliary *worden,* which was used in the examples above, but the auxiliary *krijgen* 'to get'. The contrast between the regular passive and the *krijgen*-passive is illustrated in (72).

(72) a. Het boek wordt/*krijgt ons toegestuurd. [regular passive]
the book is/gets us prt.-sent

b. Wij krijgen/*worden het boek toegestuurd. [*krijgen*-passive]
we get/are the book prt.-sent

For a detailed discussion of the types of verbs that do or do not undergo the three types of passivization distinguished above, we refer the reader to Section 3.2.1.

II. Passive auxiliaries

At first sight, there are two auxiliaries that can be used in impersonal and regular passive constructions, *worden* 'to be' and *zijn* 'to have been'. The choice between the two auxiliaries is determined by the temporal/aspectual properties of the construction as a whole: *worden* is used in imperfective and *zijn* in perfective passive constructions. This is illustrated in (73).

(73) a. Jan wordt (door de dokter) onderzocht. [imperfect]
Jan is by the doctor examined
'Jan is examined by the doctor.'

b. Jan is (door de dokter) onderzocht. [perfect]
Jan has.been by the doctor examined
'Jan has been examined by the doctor.'

It is sometimes suggested, however, that of the two auxiliaries *worden* and *zijn*, only the former is a "true" passive auxiliary. Van Bart et al. (1998:49-50), for example, take the auxiliary *zijn* in (73b) to be a perfect auxiliary that is combined with a phonetically empty counterpart of the passive auxiliary *worden*. This claim is supported by examples such as (74a), in which the postulated empty passive auxiliary of (73b) is replaced by the overt form *geworden*. Sentences of this kind are considered marked or archaic in Standard Dutch (see Haeseryn et al. 1997:959-60), but are easily possible in, especially, the southern and eastern varieties of Dutch; see Van der Horst (2008:1735) and Barbiers et al. (2008: Section 3.3.1.3). It should be noted, however, that Barbiers et al. also found that in the vast majority of cases, speakers who accept the passive auxiliary in the perfect-tense construction in (74b) prefer the participle form of *zijn* 'to be', *geweest.*

(74) a. $^{\%}$Jan is (door de dokter) onderzocht geworden.
Jan has by the doctor examined been
'Jan has been examined by the doctor.'
b. $^{\%}$Het huis is verkocht geworden/geweest.
the house is sold been/been
'The house has been sold.'

This finding unambiguously shows that *zijn* can be used as a passive auxiliary after all. It does not imply, of course that claiming that the auxiliary *is* in (73b) is a perfect auxiliary is wrong; if there is indeed an empty verb present in this example, it does not matter much whether it should be seen as the counterpart of *geworden* or of *geweest*.

Krijgen-passives differ from the impersonal/regular passives in that all varieties of Dutch require the auxiliary *krijgen* to be overtly expressed in perfect-tense constructions such as (75b); in this example *hebben* is therefore unmistakably a perfect auxiliary.

(75) a. Jan krijgt het boek toegestuurd. [imperfect]
Jan gets the book prt.-sent
b. Jan heeft het boek toegestuurd gekregen. [perfect]
Jan has the book prt-sent gotten

III. Form of the passivized verb and its placement in the clause-final verb cluster

This subsection discusses the form of passivized main verbs as well as their placement in clause-final verb clusters consisting of two and three verbs.

A. Clause-final verb sequences of two verbs

The examples in (76) show that in passive clauses with two verbs (the auxiliary and the passivized main verb), the main verb always has the form of a passive participle; using an infinitival main verb leads to ungrammaticality.

(76) a. Er wordt buiten gevochten/*vechten. [impersonal passive]
there is outside fought$_{part}$/fight$_{inf}$
'People are fighting outside.'
b. De man/Hij wordt door de politie gevolgd/*volgen. [regular passive]
the man/he is by the police followed$_{part}$/follow$_{inf}$
'The man/He is followed by the police.'
c. Marie/Ze kreeg een baan aangeboden/*aanbieden. [*krijgen*-passive]
Marie/she got a job prt-offered$_{part}$/prt.-offer$_{inf}$
'Marie/she was offered a job.'

In embedded clauses, the auxiliary and the passive participle are both in clause-final position, and, as might be expected on the basis of our discussion of perfect-tense constructions in Section 6.2.1, sub III, the passive participle may either precede or follow the passive auxiliary in the northern varieties of Standard Dutch, although it should be noted that the order AUX-PART is less frequent in passive constructions than in perfect-tense constructions; see the studies reviewed in Haeseryn (1990:

Section 2.2) and De Sutter (2005/2007). The percentage signs indicate that the southern varieties allow the PART-AUX order only.

(77) a. dat er buiten <gevochten> wordt <$^{\%}$gevochten>. [impersonal passive]
that there outside fought is
'that people are fighting outside.'
b. dat hij door de politie <gevolgd> wordt <$^{\%}$gevolgd>. [regular passive]
that he by the police followed is
'that he's followed by the police.'
c. dat ze een baan <aangeboden> kreeg <$^{\%}$aangeboden>. [*krijgen*-passive]
that she a job prt-offered got
'that she was offered a job.'

B. Clause-final verb sequences of three verbs

In sequences of three verbs, passive auxiliaries never appear as finite verbs, and we will not be surprised to see that the passivized main verb always surfaces as a passive participle. The examples in (78) show that, as might be expected on the basis of our discussion of perfect-tense constructions in Section 6.2.1, sub IVA, the passive participle may occupy any position in the clause-final verb cluster in the northern varieties of Dutch, although it should be noted that placement of the participle in final position is again less frequent than in perfect-tense constructions, and that intermediate placement is relatively rare.

(78) a. dat er buiten <gevochten> zal <gevochten> worden <$^{\%}$gevochten>.
that there outside fought will be
'that people will be fighting outside.'
b. dat hij door de politie <gevolgd> moet <gevolgd> worden <$^{\%}$gevolgd>.
that he by the police followed must be
'that he must be followed by the police.'
c. dat ze een baan <aangeboden> zal <aangeboden> krijgen <$^{\%}$aangeboden>.
that she a job prt-offered will get
'that she'll be offered a job.'

The percentage signs again indicate that the southern varieties do not allow the participle in final position. They further seem to differ from the northern varieties in exhibiting a preference for placing the participle in the intermediate position of the verb cluster; see table (24) for a similar finding for perfect-tense constructions. However, for the discussion in Subsection IV it is important to add that not all speakers of the southern varieties allow the passive participle in intermediate position; some of our Flemish informants require it to be the first verb in the verb cluster. We refer the reader to Haeseryn (1990: Section 2.3.2) for more detailed discussion of these differences in frequency.

Passive constructions in the perfect tense have a number of surprising properties. In accordance with the generalization above that passive auxiliaries never appear as finite verbs in sequences of three verbs, such constructions require the perfect auxiliary to surface as the finite and the passive auxiliary as a non-finite verb. Section 6.2.1, sub IVA, has shown that such perfect-tense constructions normally exhibit the °*infinitivus-pro-participio* (IPP) effect: the verb governed by the perfect auxiliary does not appear as a participle, but as an infinitive. This is illustrated again in (79).

(79) Jan heeft moeten/*gemoeten werken.
Jan has must$_{inf}$/must$_{part}$ work
'Jan has had to work.'

Surprisingly, however, the IPP-effect does not arise in passive constructions. Since Subsection II has shown that the perfect-tense version of the regular passive may be special in (perhaps) having a covert passive auxiliary in the northern varieties of Dutch, we will start illustrating this for the *krijgen*-passive.

(80) a. dat Jan/hij het boek toegestuurd krijgt.
that Jan/he the book prt.-sent gets
'that Jan/he is sent the book.'
b. dat Jan/hij het boek toegestuurd heeft gekregen/*krijgen.
that Jan/he the book prt.-sent has gotten$_{part}$/get$_{inf}$
'that Jan/he has been sent the book.'

The lack of the IPP-effect in (80b) is not the only remarkable property of passive constructions in the perfect tense; the placement options for the passivized main verbs are also special. The examples in (81) show that whereas the main verb may either precede or follow the auxiliary *krijgen* in imperfect-tense constructions, at least in the northern varieties of Dutch, the main verb *must* precede the auxiliary in the corresponding perfect-tense constructions; cf. Den Besten (1985).

(81) a. dat Jan het boek toe <gestuurd> krijgt <$^{\%}$gestuurd>.
that Jan the book prt. sent gets
'that Jan was sent the book.'
b. dat Jan het boek toe <gestuurd> heeft <gestuurd> gekregen <*gestuurd>.
that Jan the book prt. sent has gotten
'that Jan has been sent the book.'

The examples in (82) show that larger verb clusters in which the passive auxiliary appears as a past participle exhibit more or less the same behavior: the participial main verb *gestuurd* may in principle be placed in all positions indicated by "✓", but not in the position following the participial passive auxiliary *gekregen* marked by "<*>".

(82) a. dat Jan het boek toe*gestuurd* moet ✓ hebben ✓ gekregen <*>.
that Jan the book prt.-sent must have gotten
'that Jan must have been sent the book.'
b. dat Jan het boek toe*gestuurd* zou ✓ moeten ✓ hebben ✓ gekregen <*>.
that Jan the book prt.-sent would must have gotten
'that Jan should have been sent the book.'

Whether we find the same effect in regular passive examples like the ones in (83) is difficult to answer: judgments of speakers of the southern variety of Dutch are not helpful given that such speakers do not readily allow the AUX-PART order in (83a) anyway, and speakers of the northern varieties consider the overt expression of the perfect auxiliary *geworden* in (83b) as marked or archaic at best. However, insofar as (83b) is accepted by the latter group of speakers, they agree that the passive participle *geslagen* must precede the passive auxiliary *geworden*; placing the passive participle behind the auxiliary leads to a completely unacceptable result.

(83) a. dat de hond <geslagen> wordt <$^{\%}$geslagen>.
that the dog beaten is
'that the dog is beaten.'
b. dat de hond <$^{??}$geslagen> is <$^{??}$geslagen> geworden <*geslagen>.
that the dog hit has been
'that the dog has been beaten.'

Many speakers of the southern varieties do accept the orders in (83b) marked by two question marks, possibly with the passive auxiliary *geweest* instead of *geworden*; see Subsection II. As in the case of the *krijgen*-passive, it should be added that not all speakers of the southern varieties allow the passive participle in intermediate position; some of our Flemish informants require it to be the first verb in the verb cluster.

IV. Clause splitting and permeation of the clause-final verb cluster

Although Subsection III has shown that passive constructions do not exhibit the IPP-effect, we must nevertheless conclude that they involve verb clusters since they do exhibit clause splitting. We will illustrate this in the following subsections for both the impersonal/regular and the *krijgen*-passive in clauses with, respectively, two and three verbs. This subsection will also discuss to what extent the clause-final verb cluster can be permeated by dependents of the passivized main verb (that is, internal arguments, complementives and VP-modifiers).

A. Impersonal/regular passives with clause-final sequences of two verbs

Clause splitting in regular passive clauses is difficult to illustrate by means of the internal argument of a passivized transitive verb because the internal argument surfaces as the derived °DO-subject of the clause and may therefore be expected in examples such as (84a) not to occupy its underlying object but its derived subject position. Section N8.1.4 has shown, however, that subjects that present new information need not be moved into the regular subject position but can remain in their underlying position in the lexical domain of the verb. With this in mind, it is interesting to note that indefinite subjects in presentational *er*-constructions, which always present new information, cannot be adjacent to the main verb either in passive constructions such as (84b). If we assume that such subjects occupy their underlying object position, the fact that they must precede the passive auxiliary can be used to argue that regular passive constructions exhibit clause splitting.

(84) a. dat <de hond> werd <*de hond> verkocht.
that the dog was the dog sold
'that the dog was sold.'
b. dat er <een hond> werd <*een hond> verkocht.
that there a dog was sold
'that a dog was sold.'

The same thing can be shown even more clearly by means of NOMINATIVE-DATIVE inversion in passive constructions with ditransitive verbs, which is discussed more extensively in Section 3.2.1.3, sub IIB; the fact that the DO-subject *het/een boek* 'the/a book' follows the indirect object *Jan/hem* in (85a&b) clearly shows that it need not occupy the regular subject position; the fact that it nevertheless cannot permeate the verb cluster shows again that regular passive constructions exhibit clause splitting. Note in passing that the unacceptability of the NOMINATIVE-DATIVE order in (85b) supports our earlier claim that the indefinite subject in (84b) does not occupy the regular subject position

(85) a. dat <het boek> Jan/hem <het boek> werd <*het boek> overhandigd.
that the book Jan/hem was handed.over
'that the book was presented to Jan/him.'
b. dat er <*een boek> Jan/hem <een boek> werd <*een boek> overhandigd.
that there a book Jan/hem was handed.over
'that a book was presented to Jan/him.'

Clause splitting in impersonal/regular passives can also be illustrated by means of the examples in (86); there is no reason for assuming that the placement of the prepositional object *op een brief*, the complementive *oranje* or the manner adverb *grondig* is affected by passivization, but nevertheless these elements cannot occur left-adjacent to the main verb when the latter follows the passive auxiliary; the italicized phrases may be placed in positions indicated by "✓", but not in positions marked by an asterisk.

(86) a. dat er *op een brief* wordt <*> gewacht ✓. [PP-complement]
that there for a letter is waited
'that someone is waiting for a letter.'
b. dat het hek *oranje* wordt <*> geschilderd <*>. [complementive]
that the gate orange is painted
'that the gate is being painted orange.'
c. dat de auto *grondig* wordt <*> gecontroleerd <*>. [manner adverb]
that the car thoroughly is checked
'that the car is being checked thoroughly.'

Example (87a) shows that, as in active perfect-tense constructions, the preverbal position marked by an asterisk in (86b) becomes available if we replace the complementive *oranje* by a monosyllabic adjective. In this respect, monosyllabic complementives again behave in the same way as verbal particles like *op* in (87b), which likewise may permeate verb clusters.

(87) a. dat het hek <rood> wordt <rood> geschilderd. [monosyll. complementive]
that the gate red is painted
'that the gate is being painted red.'
b. dat Peter steeds <op> wordt <op> gebeld. [verbal particle]
that Peter all.the.time up is called
'that Peter is being called all the time.'

Note that evidence of the type in examples (84) to (87) is not available for those varieties of Dutch that do not allow the AUX-PART order, that is, the southern varieties of Standard Dutch as well as the regional varieties spoken in the northern part of the Netherlands.

Clause splitting may also arise when the passive participle precedes the auxiliary. This is illustrated in (88) for the verbs *wachten* 'to wait' and *zeggen* 'to say', which take, respectively, a prepositional and a clausal complement. The primeless examples first show that PP-complements may either precede or follow their main verb, whereas clausal complements must follow their main verb. The primed examples show that, as in perfect-tense constructions, the complement-PP/clause cannot permeate the verb cluster, that is, it cannot be placed between the participle and the passive auxiliary. For completeness' sake, we also indicated that the PP-complement in (88a′) may precede the verb cluster as a whole, whereas this is excluded for the complement clause in (88b′).

(88) a. dat Marie <op een brief> wacht <op een brief>. [PP-complement]
that Marie for a letter waits
'that Marie is waiting for a letter.'

a′. dat er ✓ gewacht <*> wordt *op een brief.*
that there waited is for a letter
'that a letter is awaited.'

b. dat Els <*dat hij ziek is> zegt <dat hij ziek is>. [complement clause]
that Els that he ill is says
'that Els says that he's ill.'

b′. dat er <*> gezegd <*> wordt *dat hij ziek is*.
that there said is that he ill is
'that it is said that he's ill.'

B. Impersonal/regular passives with clause-final sequences of three verbs

For the varieties of Dutch that do not allow permeation of the clause-final verb cluster, the word order facts in clauses with three verbs are basically the same as in clauses with two verbs. The examples in (89) show that the derived DO-subject must precede the clause-final sequence, regardless of whether it is definite or indefinite. Since we have seen in the previous subsection that (at least) the indefinite subjects in presentational *er*-constructions may occupy their underlying base position, the possibility of clause splitting in the (b)-examples in (89) again supports the claim that passive constructions involve a verb cluster. The subject *de/een hond* may not be placed in positions marked by an asterisk or a percentage sign.

(89) a. dat *de hond* zou <*> worden <*> verkocht.
that the dog would be sold
'that the dog would be sold.'

a′. dat *de hond* zou <*> verkocht worden.
that the dog would sold be

b. dat er *een hond*> zou <*> worden <*> verkocht.
that there a dog would be sold
‘that a dog would be sold.’
b′. dat er *een hond* zou <%> verkocht worden.
that there a dog would sold be

Since speakers of the southern varieties of Dutch do not accept the order MODAL-AUX-PART, we expect them to reject any order in the primeless examples in (89). It also seems that these varieties mutually differ as to whether they take the MODAL-PART-AUX or the PART-MODAL-AUX order. The crucial point here is that our informants who normally have the MODAL-PART-AUX order also allow the indefinite (but not the definite) subject to permeate the clause-final verb cluster; placement of the subject in the position marked by a percentage sign in (89b′) is acceptable for such speakers, albeit that it is considered somewhat marked compared to the alternative placement in the position preceding the auxiliary.

Clause splitting can, of course, not be demonstrated for Standard Dutch on the basis of passive perfect-tense constructions given that they normally require omission of the participle form of the passive auxiliary (see Subsection II), but it is possible for some of the southern varieties that do allow overt expression of the passive auxiliary—those southern varieties that allow the AUX$_{\text{perfect}}$-PART$_{\text{main}}$-AUX$_{\text{passive}}$ order of the verb cluster also allow permeation by indefinite (but not definite) subjects.

(90) a. dat <$^{\%}$de hond> is <*de hond> geschopt geweest.
that the dog is$_{\text{perfect}}$ kicked been$_{\text{passive}}$
‘that the dog has been kicked.’
b. dat er <$^{\%}$een hond> is <$^{\%}$een hond> geschopt geweest.
that there a dog is$_{\text{perfect}}$ kicked been$_{\text{passive}}$
‘that a dog has been kicked.’

The examples in (91) provide the judgments on passivized ditransitive constructions in which the derived DO-subject follows the indirect object and thus clearly does not occupy the regular subject position. First, speakers of the northern varieties of Standard Dutch require the DO-subject to precede the complete verb cluster, regardless of the latter’s word order; the fact that placement of the subject in the positions marked by an asterisk or a percentage sign is impossible shows again that passive constructions allow clause splitting. Second, speakers of the southern varieties who allow the MODAL-PART-AUX order also allow the indefinite DO-subject to permeate the verb cluster, that is, to occur in the position marked with a percentage sign in (91b).

(91) a. dat er hem <een boek> zou <*> worden <*> overhandigd.
that there him a book would be handed.over
‘that a book would be presented to him.’
b. dat er hem <een boek> zou <%> overhandigd worden.
that there him a book would handed.over be
c. dat er hem een boek overhandigd zou worden.
that there him a book handed.over would be

The examples in (92) illustrate the same thing for the passive constructions in the perfect tense for those speakers of the southern varieties that prefer the verb order in (92a) over the one in (92b): such speakers also allow permeation of the verb cluster by the indefinite DO-subject. The percentage signs preceding these examples again indicate that this construction type is not available for speakers of the northern varieties of Dutch, because they require omission of the passive auxiliary *geweest*.

(92) a. %dat (er) Peter <een boek> is <een boek> overhandigd geweest.
that there Peter a book is handed.over been
'that a book has been handed over to Peter.'
b. %dat er Peter een boek overhandigd is geweest.
that there Peter a book handed.over is been

Clause splitting may also arise with PP-complements, complementives and manner adverbs. The judgments of northern speakers on the examples in (93) are essentially the same as the ones we found for the examples in (86): PP-complements, (polysyllabic) complementives and manner adverbs cannot permeate the verb cluster; the italicized phrases may be placed in all positions indicated by "✓", but not in positions marked by an asterisk or a percentage sign. Note that we did not mark the positions following the main verb for the complementive *oranje* and the manner adverb *grondig*, given that these elements never follow the main verb in clause-final position.

(93) a. dat er *op een brief* zou <*> worden <*> gewacht ✓.
that there for a letter would be waited
'that someone would be waiting for a letter.'
a′. dat er *op een brief* zou <%> gewacht <*> worden gewacht ✓.
a″. dat er *op een brief* gewacht zou worden.
b. dat het hek *oranje* zou <*> worden <*> geschilderd.
that the gate orange would be painted
'that the gate would be painted orange.'
b′. dat het hek *oranje* zou <%> geschilderd worden.
b″. dat het hek *oranje* geschilderd <*> zou worden.
c. dat de auto *grondig* zou <*> worden <*> gecontroleerd.
that the car thoroughly would be checked
'that the car would be checked thoroughly.'
c′. dat de auto *grondig* zou <%> gecontroleerd worden.
c′. dat de auto *grondig* gecontroleerd zou worden.

Moreover, we expect that speakers of the southern varieties of Dutch who accept the AUX$_{\text{perfect}}$-PART-AUX$_{\text{passive}}$ order in the singly-primed examples will also accept permeation of the verb cluster. In point of fact, our informants allowing this order report that the orders marked with a percentage sign are acceptable (albeit that this order is judged as marked in the case of the prepositional object *op een brief*).

The (a)-examples in (94) show that monosyllabic adjectival complementives again differ from polysyllabic ones in that they behave like verbal particles in the sense that they may at least marginally permeate the verb cluster in the northern varieties of Standard Dutch, provided they precede the main verb.

(94) a. dat het hek <rood> zou <$^{?}$rood> worden <rood> geschilderd.
that the gate red would be painted
‘that the gate would be painted red.’
b′. dat het hek <rood> zou <rood> geschilderd worden.
b″. dat het hek rood geschilderd zou worden.
c′. dat Peter <op> zou <op> worden <op> gebeld.
that Peter up would be called
‘that Peter would be called.’
c′. dat Peter <op> zou <op> gebeld worden.
c″. dat Peter <op> gebeld zou worden.

The examples in (95) show that clause splitting may also arise in perfective passive constructions for speakers of the southern varieties who accept the AUX$_{\text{perfect}}$-PART-AUX$_{\text{passive}}$ order of the verb cluster. The question mark in (95a) is added to indicate that such speakers consider this order acceptable but marked.

(95) a. $^{\%}$dat er <op een brief> is <$^{?}$op een brief> gewacht geweest.
that there for a letter is waited been
‘that someone has been waiting for a letter.’
b. $^{\%}$dat het hek door Marie <oranje> is <oranje> geverfd geweest.
that the gate by Marie orange is painted been
‘that the gate has been painted orange by Marie.’
c. $^{\%}$dat Peter <op> is <op> gebeld geweest.
that Peter up is called been
‘that Peter has been called up.’
d. $^{\%}$dat de auto <grondig> is <grondig> gecontroleerd geweest.
that the car thoroughly is checked been
‘that the car has been checked thoroughly.’

The examples in (96), finally, show that clause splitting may also arise when the passive participle precedes the passive auxiliary. This holds especially for constructions with prepositional and clausal complements, which, respectively, may or must follow the main verb in clause verbal position but cannot permeate verb clusters. For completeness’ sake, we marked all (im)possible placements of the complement PP/clause with respect to the verbs in the cluster, but the ones we are especially interested in here are those following the main verb *gewacht/gezegd*.

(96) a. dat er ✓ gewacht <*> zou <*> worden *op een brief.*
that there waited would be for a letter
‘that someone would wait for a letter.’
a′. dat er ✓ zou <$^{\%}$> gewacht <*> worden *op een brief.*
that there would waited be for a letter
‘that someone would wait for a letter.’
b. dat er <*> gezegd <*> zou <*> worden *dat hij ziek is*.
that there said would be that he ill is
‘that it would be said that he’s ill.’
b′. dat er <*> zou <*> gezegd <*> worden *dat hij ziek is*.
that there said would be that he ill is
‘that it would be said say that he’s ill.’

C. Krijgen*-passives with clause-final sequences of two or three verbs*

Subsection III has shown that in the northern varieties of Standard Dutch passive participles may follow the passive auxiliary *krijgen* in sequences of two verbs. The primeless examples in (97) show that this may give rise to clause splitting; direct objects and VP-adverbs must precede the verb cluster as a whole, whereas verbal particles may permeate the verb cluster (as long as they precede the main verb). Because the elements involved never follow the main verb clause-final position, we only indicated the placements that are in accordance with this general rule.

(97) a. dat Jan <een boek> kreeg <*een boek> toegestuurd. [direct object]
that Jan a book got prt.-sent
‘that a book was sent to Jan.’
a′. dat Jan een boek toegestuurd kreeg.
b. dat Jan het boek <toe> kreeg <toe> gestuurd. [particle]
that Jan the book prt. got sent
‘that the book was sent to Jan.’
b′. dat Jan het boek toegestuurd kreeg.
c. dat Jan de kosten <geheel> kreeg <*geheel> vergoed. [VP-adverb]
that Jan the expenses fully got reimbursed
‘Jan was reimbursed for all his expenses.’
c′. dat Jan de kosten geheel vergoed kreeg.

Note that we cannot illustrate clause splitting with complementives since verbs entering the *krijgen*-passive are typically particle verbs, which do not allow the addition of a complementive; see Section 2.2.1, sub IV, for discussion. Note further that clause splitting cannot be shown for the southern varieties of Dutch because these do not accept the AUX-PART order; these varieties only have the orders in the primed examples.

In imperfective *krijgen*-passives with three verbs, the participle may occupy any position in the verb cluster in the northern varieties of Dutch. The placement of the dependents of the passivized main verb is, however, far more restricted. The examples in (98) show that the options are more or less identical to those in (97); direct objects and VP-adverbs must precede the verb cluster as a whole, whereas verbal particles may permeate it (as long as they precede the main verb).

(98) a. dat Jan *een boek* zal <*> krijgen <*> toegestuurd. [direct object]
that Jan a book will get prt.-sent
‘that Jan will be sent a book.’
a′. dat Jan *een boek* zal <%> toegestuurd krijgen.
a″. dat Jan *een boek* toegestuurd zal krijgen.
b. dat Jan het boek *toe* zal ✓ krijgen ✓ gestuurd. [particle]
that Jan the book prt. will get sent
‘that Jan will be sent the book.’
b′. dat Jan een boek *toe* zal ✓ gestuurd krijgen.
b″. dat Jan een boek *toe* gestuurd zal krijgen.

c. dat Jan de kosten *geheel* zal <*> krijgen <* > vergoed. [VP-adverb]
that Jan the expenses fully will get reimbursed
'that Jan will be fully reimbursed for his expenses.'
c′. dat Jan de kosten *geheel* zal <%> vergoed krijgen.
c″. dat Jan de kosten *geheel* vergoed zal krijgen.

The southern varieties that allow permeation of the verb cluster do not accept the primeless examples, and may differ in their preference of the singly- or doubly-primed examples. For those varieties that accept the singly-primed examples we expect the orders marked with a percentage sign to be acceptable. Our Flemish informants tell us that this expectation in indeed borne out (albeit that the case with the adverb *geheel* is judged as marked).

In perfective *krijgen*-passives, the participle must precede the passive auxiliary *gekregen*, as in (99). We expect that speakers of the southern varieties that allow the participle to follow the perfect auxiliary, as in the primeless examples, also allow permeation of the verb cluster. Our informants indicate again that this expectation is borne out; the orders marked with a percentage sign are indeed fully acceptable.

(99) a. dat Jan <een boek> heeft <$^{\%}$een boek> toegestuurd gekregen.
that Jan a book has prt.-sent gotten
'that Jan has been sent a book.'
a′. dat Jan een boek toegestuurd heeft gekregen.
b. dat Jan een boek <toe> heeft <toe> gestuurd gekregen.
that Jan a book prt. has sent gotten
'that Jan has been sent a book.'
b′. dat Jan een boek toegestuurd heeft gekregen.
c. dat Jan de kosten <geheel> heeft <$^{\%}$geheel> vergoed gekregen.
that Jan the expenses fully has reimbursed gotten
'Jan Jan has been fully reimbursed for his expenses.'
c′. dat Jan de kosten geheel vergoed heeft gekregen.

Example (100) shows that clause splitting may also arise with clausal complements if the passive participle precedes the passive auxiliary. Observe that the clause cannot be placed further to the left but must follow the verb cluster as a whole.

(100) a. dat Jan <uitgelegd> krijgt <uitgelegd> [wat hij moet doen].
that Jan prt.-explained gets what he must do
'that it is explained to Jan what he has to do.'
b. dat Jan uit <gelegd> zal <gelegd> krijgen <gelegd> [wat hij moet doen].
that Jan prt. explained gets what he must do
'that it'll be explained to Jan what he has to do.'
c. dat Jan uit <gelegd> heeft <gelegd> gekregen [wat hij moet doen].
that Jan prt. explained has what he must do
'that it has been explained to Jan what he has to do.'

Since *krijgen*-passivization is possible with ditransitive verbs only and since we are not aware of any clear examples of ditransitive verbs taking a prepositional object (cf. Section 2.3), we cannot illustrate clause splitting with this type of complement.

V. Some generalizations

The previous subsections have discussed passive constructions, that is, constructions that contain a passive auxiliary (Subsection I). The set of perfect auxiliaries is perhaps exhausted by *worden* 'to be' and *krijgen* 'to get', although there is good reason that at least in the southern varieties of Dutch *zijn* 'to be' is also included (Subsection II). The verb governed by the passive auxiliary always appears as a passive participle; the IPP-effect, which we find in certain perfect-tense constructions, does not arise in passive constructions (Subsection III). The order of the clause-final verb cluster was one of the main topics of Subsection IV. If the passive construction is imperfective and contains more than three verbs, the word order of the verb cluster is normally determined by the two constraints in (101a&b), which apply in the fashion indicated in (101c).

(101) • Word order in the Dutch clause-final verb cluster:
   a. A verb V_{n-1} that is governed by a verb V_n follows V_n in the clause-final verb cluster: V_n - V_{n-1} ...... V_2 - V_1.
   b. The passive participle precedes at least one verb in the clausal verb cluster.
   c. Constraint (101b) obligatorily/optionally overrides constraint (101a).

As in the case of perfect-tense constructions discussed in Section 6.2.1, the statement in (101c) is given in two forms in order to account for the fact that there are at least two varieties of Dutch: one in which the passive participle is never last in the verb cluster and one in which it can be last in the verbal system. The latter is the case in Standard Dutch and accounts for the descriptive generalization in (102).

(102) • Order of V^n - $Aux_{passive}$ - V_{main} in varieties with the AUX - PART order
   a. dat ..... <Part> aux_{finite} <Part>
   b. dat ..... <Part> V_{finite} <Part> aux_{inf} <Part>
   c. dat ..... <Part> V_{finite} <Part> V_{inf} <Part> aux_{inf} <Part>
   d. dat ..... <Part> V_{finite} <Part> V_{inf} <Part> V_{inf} <Part> aux_{inf} <Part>
   e. etc.

The more restricted varieties of Dutch, which do not allow the AUX-PART order, take the stricter version of constraint (101c), according to which constraint (101b) *must* overrule constraint (101a). Note that this may not be sufficient to provide a full account of the variation found in Dutch given that there are also varieties of Dutch that select an even smaller subset of the options in (102). This can be accounted for by assuming that these varieties are subject to yet another constraint, namely, that the participle must (or must not) be adjacent to the passive auxiliary.

(103) • Order of V^n - $Aux_{passive}$ - V_{main} in varieties without the AUX - PART order
   a. dat ..... Part aux_{finite}
   b. dat ..... <Part> V_{finite} <Part> aux_{inf}
   c. dat ..... <Part> V_{finite} <Part> V_{inf} <Part> aux_{inf}
   d. dat ..... <Part> V_{finite} <Part> V_{inf} <Part> V_{inf} <Part> aux_{inf}
   e. etc.

Perfective passive constructions are entirely out of line when it comes to the word order in the clause-final verb cluster: in all varieties of Dutch the passivized main verb must precede the passive auxiliary when the latter has the form of a participle. We have also seen that certain varieties may even have stricter order restrictions: certain southern varieties of Dutch require the participle to be placed first in the verb cluster.

(104) • Order of $aux_{perfect}$ - $aux_{passive}$ - V_{main}

a. dat ..... <Part> $aux_{passive/fin}$ <Part>
b. dat ..... <Part> $aux_{finite/perfect}$ <Part> $aux_{passive/inf}$ <*Part>
c. dat ..... <Part> V_{finite} <Part> $aux_{perfect/inf}$ <Part> $aux_{passive/inf}$ <*Part>
d. dat ..... <Part> V_{finite} <Part> V_{inf} <Part> $aux_{perfect/inf}$ <Part> $aux_{passive/inf}$ <*Part>
e. etc.

Subsection IV has also shown that the lexical projection of the passivized main verb can be discontinuous: the passive auxiliary (as well as other verbs in the verb cluster) may separate the main verb from various types of dependent elements: internal arguments, complementives (including particles) and VP-adjuncts. As in the case of the perfect-tense constructions discussed in Section 6.2.1, the precise position of these elements is determined by two parameters. The first parameter can be independently established and relates to whether the constituent in question precedes or follows the main verb in clause-final position. The second parameter involves the question as to whether the constituent can permeate the verb cluster. In tandem, these two parameters determine whether the constituent in question must precede, must follow or may permeate the verb cluster (if the main verb is in such a position that this would not clash with the first parameter). The result for the northern varieties of Dutch is given in Table (105); this table is in fact identical to the one in (65) from Section 6.2.1, sub VI, which was drawn up on the basis of perfect-tense constructions. For the southern varieties of Dutch we can make a similar table, which differs from the one in (105) in that more constituent types can permeate the verb cluster; see Table (66) in Section 6.2.1, sub VI.

(105) clause splitting in the northern varieties of Standard Dutch

	LEFT/RIGHT OF V	PERMEATION OF VERB CLUSTER	VERB CLUSTER		
			PRECEDES	PERMEATES	FOLLOWS
DIRECT OBJECT	left	—	+	—	—
PP-OBJECT	left/right	—	+	—	+
CLAUSAL OBJECT	right	—	—	—	+
COMPLEMENTIVE	left	—/+	+	—/+	—
PARTICLE	left	+	+	+	—
VP-ADVERB	left	—	+	—	—

Recall that we were not able to demonstrate clause splitting with PP-objects and complementives in the case of the *krijgen*-passive, for the simple reason that input verbs for *krijgen*-passivization are always ditransitive and ditransitive verbs do not occur with these elements.

VI. How to recognize passive auxiliaries?

It is not always easy to distinguish between passive and copular constructions. Examples such as (106a), for instance, can be interpreted either as a copular or as a (perfect) passive construction. The two interpretations differ semantically in that under the copular interpretation the sentence refers to a state, whereas under the passive interpretation it refers to a completed activity. The sentences can be disambiguated by using an adverbial phrase that indicates a larger time interval, such as *al jaren* ‘for years’, or an adverbial phrase that refers to a specific point in time, such as *gisteren* ‘yesterday’; the first favors the state reading whereas the latter favors the activity reading.

(106) a. De muur is versierd.
the wall is decorated
Copular construction: ‘The wall is decorated.’ [state]
Passive construction: ‘The wall has been decorated.’ [activity]
b. De muur is al jaren versierd.
the wall is for years decorated
Copular construction only: ‘The wall has been in a decorated state for years.’
c. De muur is gisteren versierd.
the wall is yesterday decorated
Passive construction only: ‘The wall was decorated yesterday.’

A similar ambiguity as in (106a) might be expected to arise with the verb *worden* ‘to become’, which can also be used both as a passive auxiliary and a copular verb. The interpretation of (107a) suggests, however, that this expectation is not borne out: (107a) only has an activity reading (cf. Verrips 1996). Unfortunately, that (107a) is not a copular construction cannot be demonstrated by means of the °adverb test used in (106) since this only works for perfect-tense constructions; passive imperfect-tense constructions such as (107a) can be modified by either type of adverbial phrase.

(107) a. De muur wordt versierd.
the wall is decorated
Passive construction only: ‘The wall is being decorated.’
b. De muur wordt al jaren versierd.
Passive construction only: ‘The wall has been being decorated for years.’
c. De muur werd gisteren versierd.
Passive construction only: ‘The wall was decorated yesterday.’

A reliable test to show that (107a) cannot be construed as a copular construction is to consider the perfect-tense counterpart of the construction. First, the examples in (108) show that the copular verb *worden* ‘to become’ surfaces as a past participle in the present (or past) perfect.

(108) a. Mijn handen worden vies.
my hands become dirty
‘My hands are becoming dirty.’
b. Mijn handen zijn vies geworden.
my hands are dirty become
‘My hands have become dirty.’

Subsection II has shown that in the northern varieties of Dutch the passive auxiliary *worden* does not appear as a past participle in perfective passive constructions; instead, perfect tense is expressed by means of the auxiliary *zijn* plus the passive participle—overt expression of the past participle form of the passive auxiliary *worden* is considered very marked. We illustrate this in (109).

(109) a. Er wordt verteld dat Jan ziek is.
there is told that Jan ill is
‘It is said that Jan is ill.’
b. Er is verteld ($^{\%}$geworden) dat Jan ziek is.
there is told been that Jan ill is
‘It has been said that Jan is ill.’

This observation can now be used to determine whether example (107a) can also be interpreted as a copular construction; if this were the case, we would expect the use of the participle *geworden* to give rise to a fully acceptable result for all speakers. Since example (110) shows that this is not the case, we conclude that it is not possible to interpret *worden* in (107a) as a copular.

(110) a. De muur is versierd ($^{\%}$geworden). [passive reading possible]
the wall is decorated been$_{\text{passive auxiliary}}$
‘The wall has been decorated.’
b. *De muur is versierd geworden. [copular reading not possible]
the wall is decorated become$_{\text{copular}}$

We conclude this section on passive auxiliaries by referring the reader to Section A9, where the differences between the passive and copular interpretations of examples such as (106a) is discussed in more detail.

6.2.3. Unclear cases: adjectival participles

Perfect and passive auxiliaries seem to be the only verbs that require the verb they °govern to have the form of a participle. This section discusses a set of cases that constitute apparent counterexamples to this claim. The key issue in these cases is that their participles can be either verbal or adjectival in nature and that it is often not immediately clear what categorial type we are dealing with; see Section A9 for a detailed discussion of the difference between verbal and adjectival participles. Word order of the clause-final °verb cluster in the northern varieties of Standard Dutch should provide a test for establishing the categorial status of participles: adjectival participles must precede the verbs in clause-final position, whereas verbal participles can also follow them. Unfortunately, however, speaker judgments are not always sharp, as a result of which it is sometimes impossible to draw firm conclusions. Haeseryn (1990: Section 2.5.2), who also provides a review of the literature on this issue, suggests that speakers sometimes extend the prescriptive norm of using the AUX-PART order in verb clusters to cases in which participles are used as complementives. This would be in line with his claim that this type of “hypercorrection” occurs especially in careful language use.

I. The verb raken/krijgen *‘to get’ + participle (semi-copular constructions)*

A first potential counterexample to the claim that only perfect and passive auxiliaries select a verb in the form of a participle is given in (111a), in which the verb *raken* ‘to get’ seems to select the participial form of the verb *irriteren* ‘to annoy’. There are, however, reasons for assuming that we are dealing with a semi-copular construction of the type in (111b), in which *gewond* ‘injured’ must be seen as a pseudo-participle as the corresponding verb *wonden* is obsolete and replaced by the morphologically more complex verb *verwonden* in present-day Dutch. If this line of reasoning also applies to (111a), the participle *geïrriteerd* is not verbal but adjectival, and the primed examples in (111) show that this correctly predicts that it behaves just like the pseudo-participle in that it must precede the verb *raken* in clause-final position. Since the (a)-examples in (111) are more extensively discussed in Section 2.5.1.3, sub IID, we refer the reader to this section for further discussion.

(111) a. Peter raakt snel geïrriteerd.
Peter gets quickly annoyed
‘Peter gets annoyed quickly.’
a′. dat Peter snel <geïrriteerd> raakt <*geïrriteerd>.
that Peter quickly annoyed gets
‘that Peter gets annoyed quickly.’
b. Jan raakte bij het ongeluk gewond.
Jan got in the accident injured
‘Jan got injured in the accident.’
b′. dat Jan bij het ongeluk <gewond> raakte <*gewond>.
that Jan in the accident injured got
‘that Jan got injured in the accident.’

Haeseryn et al. (1997:962) mention cases similar to (111a) with the verb *krijgen* ‘to get’, but again the position of the participle with respect to the finite verb in clauses-final position suggests that we are dealing with a semi-copular construction; an example such as (112a) can be given a similar analysis as the construction in (112b). We refer the reader to Section A6.2.1, sub I, for a more extensive discussion of this type of semi-copular construction.

(112) a. dat hij zijn auto niet meer <gerepareerd> krijgt <*gerepareerd>.
that he his car not anymore repaired gets
‘that he cannot get his car repaired anymore.’
b. dat hij zijn schoenen niet meer <schoon> krijgt <*schoon>.
that he his shoes not anymore clean gets
‘that he cannot get his shoes clean anymore.’

II. Modal verb + participle

In a limited number of cases modal verbs may take a participle as their complement. Since such constructions normally alternate with constructions with an additional perfect or passive auxiliary, Haeseryn et al. (1997:960-2) suggest that they are derived by elision of the auxiliary. Although this seems plausible at first sight, things may not be as simple as that. The following subsections discuss two cases: we start with modal verbs like *lijken* ‘to appear’, *schijnen* ‘to seem’ and *blijken* ‘to turn out’, which may take a *te*-infinitival clause as their complement, after which we discuss modal verb like *moeten* ‘must’ and *kunnen* ‘can’, which may take a bare infinitival clause as their complement.

A. Lijken *‘to appear’,* schijnen *‘to seem’ and* blijken *‘to turn out’*

Haeseryn et al. (1997:960-1) observe that modal verbs like *lijken* ‘to appear’, *schijnen* ‘to seem’ and *blijken* ‘to turn out’ are often combined with a participle. The examples in (113) show that such cases always alternate with infinitival constructions with the perfect auxiliary *zijn* (we assume that the verb *zijn* in passive constructions is indeed a perfect auxiliary). Haeseryn et al. further claim that the two alternants do not differ in meaning and therefore suggest that the perfect auxiliary *zijn* can simply be left unexpressed.

(113) a. dat Jan al gearriveerd bleek (te zijn).
that Jan already arrived turned.out to be
‘that Jan turned out to have arrived already.’
b. dat deze brief al beantwoord lijkt/schijnt (te zijn).
that this letter already answered appears/seems to be
‘that this letter appears/seems to have been answered already.’

An elision analysis of this kind is slightly suspect given that this analysis has to stipulate that this type of alternation is restricted to *zijn* ‘to be’, as is clear from the fact that the examples in (114) do not alternate with constructions without the perfect auxiliary *hebben* ‘have’.

(114) a. dat Jan geslapen bleek *(te hebben).
that Jan slept turned.out to have
‘that Jan turned out to have slept.’
b. dat Marie deze brief al beantwoord lijkt/schijnt *(te hebben).
that Marie this letter already answered appears/seems to have
‘that Marie seems/appears to have answered this letter already.’

Similar alternations are, however, very common with the copular verb *zijn* ‘to be’, for which reason modal verbs like *lijken* ‘to appear’, *schijnen* ‘to seem’ and *blijken* ‘to turn out’ are normally also listed as copular verbs in traditional grammars.

(115) a. dat Peter leraar/erg aardig bleek (te zijn).
that Peter teacher/very kind turned.out to be
‘that Peter turned out to be a teacher/very kind.’
b. dat Marie de beste kandidaat/intelligent lijkt (te zijn).
that Marie the best candidate/intelligent appears to be
‘that Marie appears to be the best candidate/intelligent.’

A potentially viable analysis for the examples in (113) without *te zijn* is therefore that we are concerned with copula-like constructions, in which the modal verbs take a °complementive in the form of an adjectival participle. If so, we make certain predictions about the placement options of the participles. Since the meaning of the examples in (113) clearly indicates that *zijn* is a perfect auxiliary, we expect the placement of the participles to be quite free, and the examples in (116) show that this expectation is indeed borne out; the participle need not appear before the finite verb in clause-final position but can also appear in the positions indicated by ✓.

(116) a. dat Jan al <gearriveerd> bleek ✓ te zijn ✓.
that Jan already arrived turned.out to be
'that Jan turned out to have arrived already.'
b. dat deze brief al <beantwoord> lijkt/schijnt ✓ te zijn ✓.
that this letter already answered appears/seems to be
'that this letter appears/seems to have been answered already.'

If the corresponding constructions without *te zijn* are indeed copular-like constructions, the participles are adjectival in nature and therefore must precede the finite verb. Unfortunately, speakers seem to vary in their acceptability judgments: while some speakers object to placing the participle in the positions marked by a percentage sign, others do more or less accept it. For this reason, we are not able to draw any firm conclusions at this moment.

(117) a. dat Jan al <gearriveerd> bleek <$^{\%}$gearriveerd>.
that Jan already arrived turned.out
'that Jan turned out to have arrived already.'
b. dat deze brief al <beantwoord> lijkt/schijnt <$^{\%}$beantwoord>.
that this letter already answered appears/seems
'that this letter appears/seems to have been answered already.'

The variation in speakers' judgments on the examples in (117) may be due to the fact that, as was also noticed by Haeseryn et al. (1997:960), the constructions without *te zijn* are less common than those with *te zijn*. In fact, despite that Haeseryn et al. claim that there is no stylistic difference between the two alternants, we have the impression that the construction without *te zijn* belongs to the more formal, artificial register. The tendency to accept the orders in (117) marked by a percentage sign may therefore involve hypercorrection of the sort suggested above.

B. Moeten *'must',* kunnen *'can', etc.*

Haeseryn et al. (1997:961-2) claim that passive auxiliaries can be omitted in passive constructions with a modal verb of the type *moeten* 'must'. Some instances exemplifying this are given in (118).

(118) a. Die rommel moet opgeruimd (worden).
that mess must prt.-cleared be
'That mess must be cleared.'
b. Die lege flessen kunnen weggegooid (worden).
those empty bottles can away-thrown be
'Those empty bottles can be thrown away.'

There is, however, an alternative analysis for the construction without the passive auxiliary, in which the participles simply function as adjectival complementives. That modals can be combined with adjectival complementives is clear from the examples in (119).

(119) a. Dat hek moet groen.
that gate must green
'That gate must be painted green.'
b. Die fles moet leeg.
that bottle must empty
'That bottle must be emptied.'

Of course, one might assume that examples such as (119) can also be derived from some more complex structure by elision of a larger verbal string consisting of the passive auxiliary and some passivized main verb; cf. the English renderings in (119). Barbiers (1995) refuted hypotheses of this sort, however, by showing that the addition of an agentive *door*-phrase requires such verbs to be present; if these verbs were simply phonetically suppressed but semantically present in examples such as (119), this contrast would be unexpected. The same argument carries over to examples such as (118); the examples in (121) show that agentive *door*-phrases are only possible if the passive auxiliary is present.

(120) a. Dat hek moet door Peter groen *(geverfd worden).
that gate must by Peter green painted be
'That gate must be painted green by Peter.'
b. Die fles moet door Marie leeg *(gemaakt worden).
that bottle must by Marie empty made be
'that bottle must be emptied by Marie.'

(121) a. Die rommel moet door Peter opgeruimd *(worden).
that mess must by Peter prt.-cleared be
'That mess must be cleared by Peter.'
b. Die lege flessen kunnen door Els weggegooid *(worden).
those empty bottles can by Els away-thrown be
'Those empty bottles can be thrown away by Els.'

If the participles in examples such as (118) function as complementives if no passive auxiliary is present, we expect them to precede the modal in embedded clauses. Again, however, speaker judgments are not very sharp, which might be related to the fact noted by Haeseryn et al. (1997:961) that constructions such as these are normally main clauses. Our own intuition is that the position preceding the modal verb is highly preferred but some of our informants allow the participle in both positions.

(122) a. dat de rommel <opgeruimd> moet <$^{\%}$opgeruimd>.
that the mess prt.-cleared must
'that the mess must be cleared.'
b. dat de flessen <weggegooid> moeten <$^{\%}$weggegooid>
that the bottles away-thrown must
'that the bottles must be thrown away.'

C. Conclusion

The previous subsections have discussed cases in which modal verbs seem to take a participle as their complement. There are accounts of such constructions that are fully in line with our earlier claim that participles only occur as complements of perfect and passive auxiliaries: it is simply assumed that these auxiliaries are present but not morphologically expressed. Our discussion has shown, however, that there are reasons not to adopt these proposals and instead assume that the participles in question are not verbal but adjectival in nature. This proposal makes a sharp prediction about word order: the adjectival participles must precede the verbs in clause-final construction. Unfortunately, speaker judgments are not always sharp and some of our informants even report that they fully accept orders that are expected to be unacceptable. Perhaps, this situation simply reflects that such cases normally involve the formal, more artificial register of the language and are thus cases of hypercorrection, but we leave this issue open for future investigation.

III. Fixed expressions consisting of a verb and a participle

Haeseryn et al. (1997:963-4) mention a set of collocations consisting of a verb and a participle. Some examples are: *(ergens) begraven liggen* ‘to be buried (somewhere)’; *(iemand iets) betaald zetten* ‘to get even with someone’; *(zich) gewonnen/verloren geven* ‘to admit defeat’; *geschreven/vermeld/genoteerd staan* ‘to be recorded’, *verschoond blijven (van)* ‘to be spared’; *opgescheept zitten (met)* ‘to be stuck with’. As Haeseryn et al. notice themselves, there is reason to doubt that the participles are verbal in nature, as they normally precede the finite verb in clause-final position; although acceptability judgment seem to vary from case to case and person to person, placing the participle after the finite verb is always the marked option and in many cases simply excluded. The judgments given here are ours; Haeseryn et al. seem to consider the V-PARTICIPLE order in (123c) fully acceptable.

(123) a. dat we Peter die streek <betaald> zetten <*betaald>.
that we Peter that trick paid put
‘that we’ll get even with Peter for that trick.’
b. dat Jan hier <begraven> ligt <$^{??}$begraven>.
that Jan here buried lies
‘that Jan lies buried here.’
c. dat we met die boeken <opgescheept> zitten <$^{?}$opgescheept>.
that we with these books prt.-stuck sit
‘that we’re stuck with these books.’

If the participles in the examples above are indeed adjectival in nature, we immediately account for the fact illustrated in (124) that examples like these do not exhibit the °*infinitivus-pro-participio* (IPP) effect; if the participles marked “A” are indeed adjectival, the participles marked “V” are the most deeply embedded verbs, and we therefore correctly predict that they must surface as a past participle in the perfect tense. This also accounts for the severe ungrammaticality of the primed examples; adjectival participles normally precede the verb cluster.

(124) a. dat we Peter die streek betaald$_A$ hebben gezet$_V$.
that we Peter that trick paid have put
‘that we’ve gotten even with Peter for that trick.’
a′. *dat we Peter die streek hebben gezet$_V$ betaald$_A$.
b. dat Jan hier enige tijd begraven$_A$ heeft gelegen$_V$.
that Jan here some time buried has lain
‘that Jan has lain buried here for some time.’
b′. *dat Jan hier enige tijd heeft gelegen$_V$ begraven$_A$.
c. dat we jaren met die boeken opgescheept$_A$ hebben gezeten$_V$.
that we years with these books prt.-stuck have sat
‘that we have been stuck with these books for years.’
c′. dat we jaren met die boeken hebben gezeten$_V$ opgescheept$_A$.

For completeness’ sake, example (125a) shows that adjectival participles may permeate the verb cluster provided they precede the main verb. Example (125b) shows that in this respect they behave just like “true” adjectives. We refer the reader to Section 7.4 for detailed discussion.

(125) a. dat we Peter die streek hebben betaald$_A$ gezet$_V$.
that we Peter that trick have paid put
‘that we’ve gotten even with Peter for that trick.’
b. Dat we het hek hebben geel geverfd.
that we the gate have yellow painted
‘that we’ve painted the gate yellow.’

IV. The verb komen *‘to come’ + participle*

Potentially genuine counterexamples to the claim that verbal participles can only be found as complements of perfect and passive auxiliaries are given in (126). These examples suggest that the verb *komen* ‘to come’ is able to select either an infinitive or a participle. The two constructions are restricted in the sense that the verb selected by *komen* must be a verb of movement accompanied by a directional phrase like *de tuin in* ‘into the garden’ or the verbal particle *aan*, which indicates that the entity referred to by the subject of the clause approaches the speaker. The crucial thing is that the alternative placements of the participles in the primed examples are equally felicitous, which may be taken as evidence for assuming that we are dealing with verbal participles.

(126) a. dat Jan de tuin in kwam fietsen.
that Jan the garden into came cycle
‘that Jan cycled into the garden.’
a′. dat Jan de tuin in <gefietst> kwam <gefietst>.
that Jan the garden into cycled came
b. dat Jan snel kwam aanfietsen.
that Jan quickly came prt-cycle/cycled
‘that Jan quickly cycled towards us.’
b′. dat Jan snel <aangefietst> kwam <aangefietst>.
that Jan quickly prt-cycled came

Haeseryn et al. (1997: 964-5) claim that the primeless and primed examples in (126) are identical in meaning and simply differ in their geographical distribution: participles are preferred by speakers of the southern varieties, whereas speakers of the northern varieties prefer the infinitive. They further claim that the construction with a participle is more restricted than the one with an infinitive: in the perfect-tense constructions in (127), the verb *fietsen* 'to cycle' must take the infinitival form.

(127) a. dat Jan de tuin in is komen fietsen.
that Jan the garden into is come$_{inf}$ cycle
'that Jan has cycled into the garden.'
a′. *dat Jan de tuin in is komen gefietst.
that Jan the garden into is come$_{inf}$ cycled
b. dat Jan snel is komen aanfietsen.
that Jan quickly is come$_{inf}$ prt.-cycle
'that Jan has quickly cycled towards us.'
b′. *dat Jan snel is komen aangefietst.
that Jan quickly is come$_{inf}$ prt.-cycled

However, the impossibility of the participle *gefietst* in the primed examples might encourage one to claim that, despite the fact that the participle may follow *komen* in clause-final position in the primed examples in (126), the participle is adjectival in nature after all. If so, we would predict that the unacceptable examples with the participle *gefietst* improve when *gefietst* precedes the verb *komen* in its participial form (there is of course no reason to expect the IPP-effect if the participle *gefietst* is adjectival in nature). Judgments on the examples in (128) vary a great deal: some of our informants judge them to be worse than the primed examples in (127), others judge them to be better, whereas some (especially speakers of the southern varieties of Dutch) judge them to be acceptable, provided that the participle *gekomen* precedes the auxiliary. The marked character of the constructions in (128) makes it impossible to draw any firm conclusion, especially since we have not been able to find examples of this sort on the internet.

(128) a. $^{\%}$dat Jan de tuin in gefietst <gekomen> is <gekomen>.
that Jan the garden into cycled come$_{part}$ is
'that Jan has cycled into the garden.'
b. $^{\%}$dat Jan aangefietst <gekomen> is <gekomen>.
that Jan prt.-cycled come$_{part}$ is
'that Jan has cycled into the garden.'

Better evidence in favor of assuming that the participle is adjectival in nature is provided by Duinhoven (1997:551-2), who observes the contrast between the examples in (129). The diacritics given here are his and show that although Duinhoven considers the use of the participle marked compared to the use of an infinitive, using the participle is acceptable if it is placed in front of the verb *komen*. Note that in this case we did find several instances (probably from Belgium) of the order *zie ..... aan-V komen* on the internet for the verbs *wandelen*/*lopen* 'to walk', *rennen* ‘to run’ and *vliegen* ‘to fly’. Duinhoven explicitly states that the contrast between the two orders in (129b) shows that the participle is adjectival in nature.

(129) a. Ik zie Jan komen aanfietsen.
I see Jan come prt-cycle
b. Ik zie Jan <$^{?}$aangefietst> komen <*aangefietst>.
I see Jan prt.-cycled come

Duinhoven (1997:281ff.) also shows that the construction of *komen* + participle was very common in medieval Dutch, and actually did not require the addition of a directional phrase or the verbal particle *aan*. He argues that the participle originally functioned as a manner adverb that modified the verb *komen* ‘to come’, which is in fact compatible with the fact that the participle is normally optional, also in present-day Dutch.

(130) a. Jan kwam het huis uit (gewandeld).
Jan came the house out.of walked
‘Jan came (walking) out of the house.’
b. Jan kwam de tuin in (gelopen).
Jan came the garden into cycled
‘Jan came (walking) into the garden.’

On this view, the *komen* ‘to come’ + participle construction is a relic from an older stage of the language, which is under pressure of disappearing, that is, being replaced by the corresponding infinitival construction. For our present discussion it is important that the claim that the participle has or, at least, originally had an adverbial function implies that it is adjectival and not verbal in nature. This means that the *komen* + participle construction is special and cannot be taken as a straightforward counterexample to our claim that verbal participles are found as complements of perfect and passive auxiliaries only.

6.2.4. The function of the past/passive participle and the auxiliary

So far, Section 6.2 has shown that there are probably no more than two verbal constructions in which participles may appear as the complement of some other verb, viz., the perfect tense and passive construction. This section considers what the function of, respectively, the perfect/passive auxiliaries and the past/passive participles is. We will begin by arguing that past and passive participles are similar in that they express a perfective meaning aspect. If this is true, it may have certain implications for the function of the auxiliaries.

I. The meaning contribution of the past/passive participle

Section 1.5.1 has shown that the characteristic property of perfect-tense constructions is that the °eventuality denoted by the main verb is presented as completed. This is illustrated for the transitive verb *lezen* ‘to read’ in the primeless example in (131): whereas the imperfect-tense construction in (131a) presents the eventuality of reading a book as an ongoing event, the perfective-tense construction in (131b) presents it as completed. The primed examples in (131) illustrate the same thing for the °unaccusative verb *vallen* ‘to fall’.

(131) a. Marie leest een boek.
Marie reads a book
‘Marie is reading a book.’
a′. De bladeren vallen. [imperfect]
the leaves fall
‘The leaves are falling.’
b. Marie heeft een boek gelezen.
Marie has a book read
‘Marie has read a book.’
b′. De bladeren zijn gevallen. [perfect]
the leaves are fallen
‘The leaves have fallen.’

The question we want to raise now is whether the perfective meaning is introduced by the past participle of the main verb or by the accompanying perfect auxiliary. The latter would imply that the expression of perfective meaning requires the presence of an auxiliary, but this happens not to be true. The examples in (132), for example, show that the past participle may also express perfectivity on its own as an attributive modifier; in this function it stands in opposition to the present participle which is used to express imperfective meaning.

(132) a. het lezende meisje [imperfect]
the reading girl
a′. het gelezen boek [perfect]
the read book
b. de vallende/gevallen bladeren [imperfect/perfect]
the falling/fallen leaves

Note in passing that in the case of transitive verbs, the modified nouns also differ in the two attributive constructions; while the past participle modifies a noun that corresponds to the internal (theme) argument, the present participle modifies a noun that corresponds to the external (agent) °argument of the verb *lezen* ‘to read’. The internal argument of the unaccusative verb *vallen* ‘to fall’, on the other hand, can be modified either by the past or by the present participle. See Section 2.1.2, sub IIID, for more extensive discussion of this.

That perfective meaning is expressed by the past participles can also be shown by means of non-finite constructions such as (133), which are normally used to express surprise by the speaker about some presupposition apparently held by his interlocutor; it often functions as an emphatic denial of this presupposition. Example (133a) presents the eventuality of Peter taking his degree as ongoing: the (presumed) completion of this eventuality is situated after the speech time. The default interpretation of example (133b), on the other hand, is similar to that of the corresponding present perfect sentence *Jan is gisteren gepromoveerd* ‘Jan took his PhD. degree yesterday’ in that it locates the (alleged) completion of this eventuality in the time interval preceding speech time.

(133) a. Peter/Hij, promoveren? Nee! [imperfect]
Peter/he take.his.degree no
‘Peter/him, taking his PhD degree?! No way!’
b. Peter/Hij, gisteren gepromoveerd?! Nee! [perfect]
Peter/he yesterday taken.his.degree no
‘Peter/Him, he took his PhD degree yesterday?! No!’

The discussion above strongly suggests that perfective aspect is a meaning contribution of the past participle. In fact, it appears that we may attribute a similar meaning contribution to the passive participle. The reason for claiming this is that it is not *a priori* clear whether the participle in (132a′) is a past or a passive participle: the fact that we can easily add an agentive *door*-phrase to this example suggests that the latter is at least a possibility. Of course, similar examples cannot be given for unaccusative verbs like *vallen* ‘to fall’ in (132b) simply because such verbs do not allow passivization.

(134) het door Marie gelezen boek [perfect]
the by Marie read book
‘the book read by Marie’

A viable working hypothesis therefore seems to be that past and passive participles are alike in that they both present the eventuality as completed; see Duinhoven (1985) for a similar conclusion. Section 1.5.1 further argued that the perfect tenses do not locate the eventuality of the event as a whole in a specific temporal domain, but only its end point. In future examples such as (135), for example, it is not the complete event of the reading of the book/falling of the leaves that is situated after speech time, but only the reaching of the end point of this event—Marie may have started reading the book a long time ago, and the same thing may hold for the falling of the leaves.

(135) a. Marie zal het boek vanmiddag gelezen hebben.
Marie will the book this.afternoon read have
‘Marie will have read the book by this afternoon.’
b. De bladeren zullen morgen allemaal gevallen zijn.
the leaves will tomorrow all fallen be
‘The leaves will all have fallen tomorrow.’

The past/passive participles in the attributive constructions in (132) and (134) are like set-denoting adjectives in that they denote a property of the modified noun, namely that it has reached some endpoint of the eventuality denoted by the input verb of the past/passive participle. In this connection, it is interesting to note that passive participles are like set-denoting adjectives in that they do not take an agentive argument; in fact, it is one of the characteristic properties of passivization that the agent of the input verb is demoted to °adjunct status. Let us for the sake of the argument assume the far from obvious position that past participles are likewise incapable of taking an agentive argument, and see what this may teach us about the function of the perfect/passive auxiliaries.

II. The function of the past/passive auxiliaries

The standard hypothesis is that past and passive participle differ in their case-assigning abilities: past participles can assign °accusative case to their internal theme °argument, which therefore surfaces as a direct object, as in (136a); passive participles cannot assign accusative case to their internal theme argument, as a result of which the internal theme argument must surface as the subject, with the consequence that the original subject is demoted to adjunct, as in (136b); see Jaeggli (1986) and Roberts (1987) for a possible rationale of this difference in case-assignment.

(136) a. Jan heeft de auto/hem$_{acc}$ gekocht. [past participle]
Jan has the car/him bought
'Jan/He has bought the car/it.'
b. De auto/Hij$_{nom}$ is (door Jan) gekocht. [passive participle]
the car/he has.been by Jan bought
'The car/it has been bought by Jan.'

This subsection will adopt the more controversial hypothesis put forward in Subsection I that perfect and passive auxiliaries constitute a single category; see Hoekstra (1984a) for a similar proposal. Our initial observation is that the perfect auxiliary *zijn* 'to be' and the passive auxiliary *worden* 'to be' are homophonous with the copulas *zijn* 'to be' and *worden* 'to become'. This could, of course, be completely accidental, but the more interesting assumption would be that it indicates that the auxiliaries *zijn*/*worden* have one or more crucial properties in common with the copulas *zijn*/*worden*. Let us therefore have a closer look at the function of the latter category.

(137) a. Marie is ziek.
Marie is ill
b. Marie wordt ziek.
Marie becomes ill

It seems that copula *zijn* does not play any semantic role in the sense of traditional calculus logic: the adjective is predicated of the noun phrase *Marie* and this makes the well-formed proposition ZIEK(Marie). One reason for assuming that the copula must nevertheless be present is that it is needed in order to express present or past tense. In fact, it might be claimed that the same thing holds for *zijn* in the perfect-tense construction in (138); Subsection I has shown that the perfect auxiliary is not needed to express the perfective meaning aspect, but nevertheless it is needed to express present/past tense in order to locate the perfect eventuality within the present/past-tense interval.

(138) De bladeren zijn gevallen.
the leaves are fallen
'The leaves have fallen.'

The copula *worden* in (137b) does not have any semantic function in the sense of calculus logic either, but it still does have a semantic contribution of its own in that it indicates that the °logical SUBJECT of the adjective is involved in a polarity transition: Marie is undergoing a change from a state in which she is healthy (not ill) into a state in which she is ill. Interestingly, the passive auxiliary *worden* has a similar contribution to make; an example such as (139) likewise expresses that the book is undergoing a change from a state in which it is not read (by Marie) to a state in which it is.

(139) Het boek wordt (door Marie) gelezen.
the book is by Marie read
'The book is read by Marie.'

Now that we have seen that auxiliaries *zijn* and *worden* do have properties in common with the copulas *zijn* and *worden*, let us consider the auxiliary *hebben* 'to have'. When we compare the passive construction in (139) to the perfect-tense construction in (140), we observe two conspicuous differences between the two constructions: (i) whereas the internal argument of the main verb surfaces as the °nominative subject of the clause in the passive construction, it is assigned accusative case in the perfect-tense construction; (ii) the external argument (agent) of the main verb cannot be expressed as a nominal argument in the passive construction, whereas it can in the perfect-tense construction.

(140) Jan heeft het boek gelezen.
Jan has the book read
'Jan has read the book.'

If past and passive participles are indeed of the same type, these two differences must be attributed to the copular verb and the auxiliary. This seems possible if we assume that participles are not able to assign accusative case—this is, of course, a standard assumption for the passive participle, given that it is needed to account for the promotion of the direct object to subject, but not for the past participle. On this assumption the fact that the internal argument of the verb *lezen* can be assigned accusative case in the perfect-tense example in (140) should be accounted for by assuming that *hebben* is not only able to assign accusative case as a main verb, in examples such as (141), but also as an auxiliary.

(141) Jan heeft mijn auto/hem.
Jan has my car/him
'Jan has my car/it.'

That *hebben* can also assign accusative case in functions other than that of main verb can be independently supported by the (semi-)copular constructions in (142), which show that the nominative subject of the copular construction with *zijn* may appear as an accusative object in the semi-copular construction in (142b) with *hebben*. This follows directly if *zijn* and *hebben* differ in that only the latter is able to assign accusative case to the noun phrase *het raam* 'the window', which functions as the SUBJECT of the set-denoting adjective *open*/*dicht*: with the copula *zijn* the noun phrase *het raam* must surface as the subject of the sentence in order to be receive nominative case, whereas it may surface with accusative case with the semi-copula *hebben.*

(142) a. Het raam$_i$ is [t_i open/dicht].
the window is open/closed
'The window is open/closed.'
b. Jan heeft [het raam open/dicht].
Jan has the window open/closed
'Jan has the window open/closed.'

The examples in (142) also show another important property of the non-main verb *hebben*, namely that it may introduce an additional nominal argument like *Jan*. This property of *hebben* enables us to accounts for the second difference between the passive and perfect-tense construction; if passive and past participles are indeed of the same type, the past participle cannot be held responsible for the presence of the subject *Jan* in (140), which must therefore be attributed to the auxiliary *hebben*.

If we continue this line of reasoning, the fact that the auxiliary *worden* ‘to become’ triggers passivization in (139) can be attributed to its unaccusative status (which is clear from the fact that it takes the auxiliary *zijn* in the perfect tense): since neither the passive participle nor the auxiliary *worden* is able to assign accusative case to the internal (theme) argument of *lezen*, the latter must appear as the nominative subject of the clause.

The use of the perfect auxiliary *hebben* in perfect-tense constructions with intransitive verbs like *lachen* ‘to laugh’ cannot be motivated by appealing to the need of assigning accusative case because intransitive verbs do not take an internal argument that needs this case. Nevertheless, *hebben* may be needed in (143a) to (re-)introduce the agent of the main verb; the auxiliary *worden* can be used in the impersonal passive in (143b) because it is neither needed to assign accusative case nor to (re-)introduce the agent of the verb *lachen*.

(143) a. Jan heeft gelachen.
Jan has laughed
b. Er wordt gelachen.
there is laughed

This account of auxiliary selection in the passive/ perfect-tense constructions in (139), (140) and (143) may also explain the fact that the perfect auxiliary *zijn* is often used in perfect-tense constructions with unaccusative verbs like *vallen* ‘to fall’, as shown in (138); since the internal arguments of such verbs already surface as the nominative subject in simple present/past-tense constructions, it is not necessary to use the verb *hebben* in the corresponding perfect-tense constructions; there is no need to assign accusative case or to introduce an additional agentive argument, and, consequently, the use of the unaccusative verb *zijn* suffices for the expression of present/past tense.

Above we argued from a synchronic point of view that the difference between perfect-tense and passive constructions is not due to the participles but to the auxiliaries used in these constructions. We will reinforce this point by discussing some diachronic and dialectal evidence that supports this proposal. In his reconstruction of the development of the various types of participles, Duinhoven (1985) argues that diachronically participles have a non-verbal base: the suffixes *-end* and *-t/d/en* that derive present and past/passive participles originated as postpositions that express, respectively, simultaneousness and completeness. At some point, the internal structure of these adpositional phrases became obscure, as a result of which they were reinterpreted as adjectival. At yet another stage, the use of the adjectival past participles in predicative position led to a verbal interpretation. More precisely, the semi-copular construction in (144a), which expresses that Jan has a letter in a completed (written) state, was reinterpreted as in (144b), as a result of which a dynamic meaning aspect was added to the construction. Duinhoven claims that once this reinterpretation had taken place for dyadic verbs, the clausal structure was also applied to °monadic verbs, which gave rise to the current productive perfect-tense construction.

(144) a. Jan heeft$_{\text{copular}}$ [$_{\text{SC}}$ de brief geschreven$_{\text{A}}$] ⇒
Jan has the letter written
b. Jan heeft$_{\text{auxiliary}}$ de brief geschreven$_{\text{V}}$
Jan has the letter written
‘Jan has the letter written.’

Duinhoven’s reconstruction is entirely compatible with the proposal above. First, it accounts for the fact that past and passive participles have the adjectival properties that they are not able to assign accusative case and that they do not take an external (agentive) argument. Second, if we assume that the case-assigning and thematic properties of the verb *hebben* and the participle *geschreven* are taken to be the same in the two constructions in (144), the reinterpretation involves just one single feature, namely the categorial status of the participle: the participle in (144a) is adjectival and denotes a stative property whereas the participle in (144b) is verbal and denotes a (completed) dynamic eventuality. In non-standard varieties of Dutch that have a productive semi-copular construction, the ambiguity in (144) still arises. This was illustrated in Section A9.3.1.1, sub IB, by means of example (145); whereas this example only has a perfect-tense interpretation in Standard Dutch, it is ambiguous between a perfect-tense and semi-copular reading in such non-standard varieties. We refer the reader to this section for more discussion.

(145) Hij heeft de fiets gestolen.
he has the bicycle stolen
Past perfect construction: ‘He has stolen the bike.’
Semi-copular construction: ‘His bike was stolen.’

III. Conclusion

The previous subsections argued that past and passive participles constitute a single category, and that it is the choice of the auxiliary that determines whether we are dealing with a passive or a perfect-tense construction. Such an analysis presupposes that the properties normally attributed to passive participles also hold for past participles: participles have the adjectival properties (i) that they are not able to assign accusative case and (ii) do not take an external (agentive) argument. That participles have these adjectival properties should not be surprising as past and passive participles diachronically derive from adjectives. It should be noted, however, that past and passive participles do not have the categorial status of adjectives given that they exhibit different syntactic behavior (e.g. with respect to °verb clustering).

The perfect auxiliary *hebben* is used in perfect-tense constructions of transitive verbs since it can assign accusative case to the internal argument of the participle and/or (re-)introduce the agentive argument of its input verb. Since the passive auxiliary *worden* does not have these properties, the internal argument (if present) of the participle will be promoted to subject. The auxiliary *zijn* is often used as a perfect auxiliary with unaccusative verbs because there is no need in such cases to assign accusative case or to (re-)introduce an argument of the input verb.

6.3. Non-main verbs selecting a *te*-infinitive

This section discusses non-main verbs selecting a *te*-infinitive. In many grammars, this set of non-main verbs include semi-aspectual verbs like *zitten* ‘to sit’ in (146a) as well as modal verbs like *schijnen* ‘to seem’ in (146b).

(146) a. Jan zit dat boek te lezen.
Jan sits that book to read
‘Jan is reading that book.’
b. Jan schijnt dat boek te lezen.
Jan seems that book to read
‘Jan seems to read that book.’

This section does not include the modal verbs given that they exhibit the hallmark of main verbs: they are able to select °arguments. This is not only clear from the fact that their infinitival complement can be pronominalized (cf. *Dat schijnt*), but also from the fact that they are able to select a finite complement clause, and are thus able to head their own clauses. For this reason, examples such as (146b) are discussed in Section 5.2.2 on main verbs selecting a *te*-infinitive.

(147) Het schijnt [dat Jan dat boek leest].
it seems that Jan that book reads
‘It seems that Jan is reading that book.’

Our definition of main verbs as *n*-place predicates makes it relatively simple to determine whether we are dealing with a main or non-main verb in the examples in (146) but there are other cases that are more problematic in this respect; we will discuss these after we have discussed the semi-aspectual verbs in more detail.

6.3.1. Semi-aspectual verbs

This section discusses some properties of semi-aspectual constructions such as *Zij staan daar te praten* ‘They are talking over there’. We start with a discussion of the form and function of the semi-aspectual verb, which is followed by a discussion of a number of semantic and formal properties of the infinitival complement. We will also show that semi-aspectual constructions exhibit monoclausal behavior, and conclude by discussing the word order restrictions on the clause-final °verb cluster.

I. The non-main verb

Semi-aspectual verbs correspond to main verbs like *zitten* ‘to sit’, *liggen* ‘to lie’, and *staan* ‘to stand’, which refer to a certain posture or position of the subject of the clause, as well as the verb of movement *lopen* ‘to walk’. The examples in (148) shows that the semi-aspectual verbs are normally interchangeable, but that the denotation of the main verb may sometimes affect the preferred option; for example, activities that are normally performed while standing, like *afwassen* ‘washing the dishes’, will normally take the semi-aspectual *staan* ‘to stand’.

(148) a. Jan ligt/zit/staat/loopt te lezen.
Jan lies/sits/stands/walks to read
'Jan is reading.'
b. Jan staat/$^{\$}$zit/$^{\$}$ligt/$^{\$}$loopt af te wassen.
Jan stands/sits/lies/walks prt. to wash
'Jan is washing the dishes.'

The examples in (148) show that the lexical meaning of the main verbs corresponding to the semi-aspectual non-main verbs can but need not be present. This is also supported by the fact that examples like those in (149a&b) can be used without any problems when the speaker cannot observe the referent of the subject of the clause and is thus not able to tell whether this referent is actually sitting or walking at the moment of speech. Furthermore, semi-aspectual *zitten* can also co-occur with main verb *zitten*; this would be very surprising if the former had preserved the lexical meaning of the latter.

(149) a. Jan zit momenteel te werken.
Jan sits at.present to work
'Jan is working at the moment.'
b. Els loopt momenteel over het probleem te piekeren.
Els walks at.present on the problem to worry
'Els is worrying about the problem at the moment.'
c. De oude man zit daar maar te zitten.
the old man sits there PRT to sit
'The old man is sitting there all the time.'

The primary function of the semi-aspectual verbs is to indicate that we are dealing with an ongoing event; they create a progressive construction comparable (but not identical) to the English progressive construction, which we have therefore used in our renderings of the examples in (148) and (149).

II. Semantic restrictions on the infinitival complement

The lexical projection of the main verb normally denotes an activity, as in the primeless examples in (150); the primed examples show that °telic events (that is, achievements and accomplishments) normally give rise to less felicitous results, although it is certainly not impossible to encounter cases such as (150b′). The relevance of telicity is highlighted by means of the numbers given in straight brackets, which provide the results of a Google search (7/13/2102) on the strings [*ligt te rollen*], [*ligt van * af te rollen*], [*zit/ligt te slapen*] and [*zit/ligt in slaap te vallen*].

(150) a. De jongen ligt te rollen op de grond. [400.000]
the boy lies to roll on the ground
'The boy is rolling on the ground.'
a′. *De jongen ligt van de heuvel af te rollen. [0]
the boy lies from the hill AF to roll
'The boy is rolling from the hill.'

b. De baby zit/ligt te slapen. [2.000.000]
the baby sits/lies to sleep
‘The baby is sleeping.’
b′. %De baby zit/ligt in slaap te vallen. [35]
the baby sits/lies in sleep to fall
‘The baby is falling asleep.’

Generally speaking, semi-aspectual verbs cannot be combined with verb phrases denoting states: examples such as (151) are only possible with a very special “pretense”-reading, which can be brought out by adding the adverbial phrase *weer eens* ‘once again’; probably this special reading makes the event dynamic.

(151) a. Jan zit *(weer eens) aardig te zijn.
Jan sits again once nice to be
Only reading: ‘He’s acting being a nice person.’
b. Jan zit *(weer eens) alles beter te weten.
Jan sits again once all better to know
Only reading: ‘He’s pretending to know everything again.’

We also have the impression that the lexical projection of the main verb normally denotes an activity that can be °controlled by the subject of the clause. As a result the subject is typically animate, as will be clear from comparing example (152) with example (150a).

(152) ?De bal ligt te rollen op de grond.
the ball lies to roll on the ground
‘The ball is rolling on the ground.’

That the subject must be able to control the event can be brought to the fore by means of the examples in (153): whereas events denoted by the perception verbs *kijken* ‘to look’ and *luisteren* ‘to listen’ are typically controlled by the subject, events denoted by *zien* ‘to see’ and *horen* ‘to hear’ are not, and this may account for the contrast in acceptability between the two primed examples.

(153) a. Jan luistert/kijkt naar de vogels.
Jan listens/looks to the bird
‘Jan is listening to/looking at the birds.’
a′. Jan zit naar de vogels te luisteren/kijken.
Jan sits to the birds to listen/look
‘Jan is listening to/looking at the birds.’
b. Jan ziet/hoort de vogels.
Jan sees/hears the birds
‘Jan is seeing/hearing the birds.’
b′. *Jan zit de vogels te zien/horen.
Jan sits the birds to see/hear

However, clear exceptions to this general rule are cases in which the event involves an involuntary bodily function or some natural process, as is clear from the fact that examples such as (154) are very frequent. Since control by the subject is not involved, it is not surprising that we frequently find inanimate subjects in such contexts.

(154) a. Jan zit te rillen van de kou.
Jan sits to shiver of the cold
'Jan is shivering with cold.'
b. Het eten ligt te bederven in de ijskast.
the food lies to decay in the fridge
'The food is decaying in the fridge.'
c. De zon/kachel/kaars staat te branden.
the sun/stove/candle stands to burn
'The sun/stove/candle is burning.'

Another potential exceptional case is (155a) with the reflexive psych-verb *zich ergeren* 'to be annoyed' which at first sight seems to denote an involuntary mental state. It is, however, not so clear whether it is indeed the case that events denoted by such reflexive psych-verbs cannot be controlled by the referent of the subject of the clause; example (155b) strongly suggests that the mental state denoted by *zich amuseren* 'to amuse oneself' is consciously brought about by Jan himself.

(155) a. Jan loopt zich te ergeren aan Maries gedrag.
Jan walk REFL to annoyed to Marie's behavior
'Jan is annoyed at Marie's behavior.'
b. Jan zit zich te amuseren met zijn nieuwe computerspelletje.
Jan sits REFL to amuse with his new computer game
'Jan is amusing himself with his new computer game.'

III. The form of the infinitival complement

The examples given in the previous subsections have already illustrated that semi-aspectual verbs take *te*-infinitives as their complement: the examples in (156) show that leaving out the infinitival marker *te* leads to ungrammaticality.

(156) a. Jan zit/ligt/staat *(te) lezen.
Jan sits/lies/stands to read
'Jan is reading.'
b. Peter loopt de hele dag *(te) zeuren
Peter walks the whole day to nag
'Peter is nagging the whole day.'

However, in constructions such as (157), in which the semi-aspectual verbs appear as infinitives themselves, the infinitival marker *te* preceding the main verb can usually be left out; leaving *te* in even seems to lead to a marked result; cf. Haeseryn et al. (1997:970ff.)

(157) a. Jan kan hier lekker zitten ($^{??}$te) lezen.
Jan may here comfortably sit to read
'Jan can read comfortably here.'
a′. Jan lijkt hier lekker te zitten ($^{??}$te) werken.
Jan appears here comfortably to sit to work
'Jan appears to work comfortably here.'

b. Els zal wel de hele dag over het probleem lopen ($^{??}$te) piekeren.
Els will PRT the whole day on the problem walk to worry
‘Els will probably be worrying all day about that problem.’
b′. Els schijnt de hele dag over het probleem te lopen ($^{??}$te) piekeren.
Els seems the whole day on the problem to walk to worry
‘Els seems to be worrying all day about that problem.’

However, it does seem the case that the use of the marker *te* always give rise to a degraded result if the aspectual verb has the form of an infinitive. In perfect-tense constructions such as (158), in which the semi-aspectual verb surfaces as an infinitive as a result of the °*infinitivus-pro-participio* (IPP) effect, the marker *te* seems optional; the construction without *te* often seems to be the preferred one, as is clear from the fact that it occurs much more frequently, but the corresponding construction with *te* is certainly acceptable to us.

(158) a. Jan heeft de hele dag zitten (te) lezen.
Jan has the whole day sit to read
‘Jan has been reading the whole day.’
b. Els heeft de hele dag over het probleem lopen (te) piekeren.
Els has the whole day on the problem walk to worry
‘Els has been worrying about that problem all day.’

Haeseryn et al. add to the observations above that the marker *te* is also optional if the semi-aspectual verb is a plural finite form. The contrast between the two examples in (159) show that this is only possible in embedded clauses, that is, if the aspectual verb is part of the clause-final verb cluster. However, since we consider omission of the marker *te* degraded in both cases, we marked the omission of *te* in (159) by means of a percentage sign.

(159) a. Zij zitten (*te) lezen.
they sit to read
‘They’re reading.’
b. dat zij zitten $^{\%}$(te) lezen.
that they sit to read

The overview above suggests that the marker *te* can always be omitted if the semi-aspectual verb is non-finite, and that this is often even the preferred option. It is not entirely clear to us, however, whether the judgments provided above on the structures with the marker *te* are representative for the majority of Standard Dutch speakers, given that Barbiers et al. (2008: Section 2.3.4) found that speakers all over the Netherlands allow a great deal of variation in this respect. So, we leave it to future research to investigate more carefully the status of the examples given as marked above. For completeness’ sake, we conclude by noting that the marker *te* cannot be easily used in nominalizations.

(160) a. [Lopen ($^{??}$te) piekeren] is niet gezond.
walk to worry is not healthy
‘Worrying isn’t healthy.’
b. [Dat lopen ($^{??}$te) piekeren] is niet gezond.
that walk to worry is not healthy
‘All that worrying isn’t healthy.’

IV. Semi-aspectual constructions exhibit monoclausal behavior

That semi-aspectual constructions are monoclausal in nature is apparent from the fact that they exhibit the IPP-effect. We illustrate this again by means of the examples in (161).

(161) a. Jan heeft de hele dag zitten/*gezeten (te) kletsen.
Jan has the whole day sit/sat to chat
‘Jan has been chatting all day.’
b. Jan heeft de hele dag lopen/*gelopen (te) zeuren
Jan has the whole day walk/walked to nag
‘Jan has been nagging all day.’

The monoclausal behavior of such constructions is also clear from the fact that they involve clause splitting/verb clustering, that is, that the main verb can be separated from its dependents by the semi-aspectual verb. The percentage sign indicates that some Flemish speaker do accept this order as a marked option.

(162) a. dat Jan de hele dag <gedichten> zit <$^{\%}$gedichten> te lezen.
that Jan the whole day poems sits to read
‘that Jan is reading poems all day.’
b. dat Els de hele dag <koekjes> loopt <$^{\%}$koekjes> te eten.
that Els the whole day cookies walks to eat
‘that Els is eating cookies the whole day.’

V. Word order in the clause-final verb cluster

It seems that the semi-aspectual verb obligatorily precedes the main verb in the clause-final sequence; since this will become an important issue in Section 6.3.2, we have added the results of a Google search (7/12/2012) to the examples in (163). The two numbers added between square brackets indicate the number of hits for, respectively the search string [*V te piekeren*] and [*te piekeren V*], in which V stands for the semi-aspectual verb in its third person, singular, simple present-tense form. Given the low number of hits for the string [*te piekeren V*], we checked all instances individually; this resulted in a very small number of cases, which were often from (older) literary texts. Checking all instances individually was, of course, not possible for the string [*V te piekeren*], but a cursory inspection showed that a substantial number of cases were of the intended type. The results seem to justify the conclusion that the string [*te piekeren V*] is not part of Dutch °core grammar.

(163) a. dat Jan de hele dag <*te piekeren> ligt <te piekeren>. [75.000/3]
that Jan the whole day to worry lies
‘that Jan is worrying the whole day.’

b. dat Jan de hele dag <*te piekeren> zit <te piekeren> . [160.000/6]
that Jan the whole day to worry sits
‘that Jan is worrying the whole day.’
c. dat Jan de hele dag <*te piekeren> loopt <te piekeren> . [8.000/2]
that Jan the whole day to worry walks
‘that Jan is worrying the whole day.’

In clusters of more than two verbs the main verb is always last in the clause-final cluster. The examples in (164) illustrate this both for main and embedded clauses and for constructions with and without the infinitival marker *te*.

(164) a. Jan heeft de hele week <*piekeren> zitten <piekeren>.
Jan has the whole week to worry sit
‘Jan has been worrying the whole week.’
a′. Jan heeft de hele week <*te piekeren> zitten <te piekeren>.
b. dat Jan de hele week <*piekeren> heeft <*piekeren> zitten <piekeren>.
that Jan the whole week worry has sit
‘that Jan has been worrying the whole week.’
b′. dat Jan de hele week <*te piekeren> heeft <*te piekeren> zitten <te piekeren>.

In (165) we show the same for imperfect-tense constructions with three verbs. We did not give examples with the infinitival marker *te* given that we consider such examples marked anyway.

(165) a. Jan kan hier lekker <*lezen> zitten <lezen>.
Jan may here comfortably read sit
‘Jan is able to work comfortably here.’
b. dat Jan hier lekker <*lezen> kan <*lezen> zitten <lezen>.
that Jan here comfortably read may sit
‘that Jan is able to work comfortably here.’

6.3.2. Unclear cases

Haeseryn et al. (1997:956) list a number of constructions of the form V + *te*-infinitive, in which V potentially functions as a non-main verb. Some typical examples are given in (166); the verbs that potentially function as non-main verbs are given in square brackets.

(166) a. De voorstelling is de hele week te zien. [*zijn*]
the performance is the whole week to see
‘The performance can be seen all week.’
b. Ik vind haar gedrag te prijzen. [*vinden*]
I consider her behavior to praise
‘I consider her behavior commendable.’
c. De kat heeft/krijgt te weinig te eten. [*hebben*/*krijgen*]
the cat has/gets too little to eat
‘The cat has/gets too little to eat.’
d. Ze geven die kat te veel te eten. [*geven*]
they give that cat too much to eat
‘They’re giving that cat too much to eat.’

e. Zij komt het geheim toch te weten. [*komen*]
she comes the secret yet to know
‘She’ll get to know the secret anyway.’

Haeseryn et al. (1997:957) analyze the finite verbs in (166) as non-main verbs but also leave open for at least some of these cases that the *te*-infinitives may be non-verbal in nature. We would like to go one step further and argue for all *te*-infinitives in (166) that they are *not* verbal in nature and that the finite verbs should consequently all be analyzed as main verbs. In order to be able to establish this, we will begin in Subsection I with a discussion of the behavior of the verb *hangen* ‘to hang’, which most grammars include in the set of semi-aspectual verbs despite the fact that it exhibits deviant behavior in many (but not all) cases; see the discussion in Haeseryn et al. (1997:974), from which we also took the crucial examples. We will argue that *te*-infinitives in constructions that exhibit this deviant behavior should be analyzed as non-verbal. After having established this, we will show in Subsections II to IV that all *te*-infinitives in (166) are non-verbal in nature.

I. Hangen *‘to hang’* + te-*infinitive*

The verb *hangen* is listed in most grammars as a semi-aspectual non-main verb, on a par with *zitten* ‘to sit’, *liggen* ‘to lie’, *staan* ‘to stand’ and *lopen* ‘to walk’, despite the fact that it exhibits a number of distinctive features that call into question whether it can really be mechanically analyzed as a semi-aspectual verb when it combines with a *te*-infinitive. We will argue that although *hangen* can be analyzed as a semi-aspectual verb in a restricted set of cases, it normally functions as a main verb when followed by a *te*-infinitive. Our investigation will lead to the conclusion that the same in fact holds for *zitten* ‘to sit’, *liggen* ‘to lie’, etc.

Section 6.3.1, sub I, illustrated by means of example (167a) that semi-aspectual verbs are often interchangeable. This does not hold for *hangen*, as will be clear from the fact that example (167b) sounds extremely weird and cannot be found on the internet either. The reason for the unacceptability of this example is that it seems very hard to suppress the lexical meaning of main verb *hangen*.

(167) a. Jan ligt/zit/staat/loopt te lezen.
Jan lies/sits/stands/walk to read
‘Jan is reading.’
b. $^{??}$Jan hangt te lezen.
Jan hangs to read

Generally speaking, constructions with *hangen* + *te*-infinitive are rarer than with the other verbs mentioned above. A typical example in which this combination can be used is given in (168a), but this example differs in various respects from run-of-the-mill semi-aspectual constructions. For example, it can be observed that it does not exhibit the °*infinitivus-pro-participio* (IPP) effect; the most natural way of forming the perfect-tense counterpart is as in (168b). This does not mean that the perfect-tense construction in (168c) with IPP-effect is impossible, but a Google search (7/14/2012) on the strings [*te drogen heeft gehangen*] and [*heeft hangen te drogen*] has shown that the latter is much less common than the former; the results of our search are given in square brackets.

(168) a. De was hangt buiten te drogen.
the laundry hangs outside to dry
'The laundry is hanging outside to dry.'
b. De was heeft buiten te drogen gehangen. [67]
the laundry has outside to dry hung
'The laundry has hung outside to dry.'
c. De was heeft buiten hangen te drogen. [3]
the laundry has outside hang to dry
'The laundry has hung outside to dry.'

The main issue for our present purposes is that example (168b) shows that we should at least allow an analysis in which the verb *hangen* does not function as a semi-aspectual verb. The fact that *hangen* surfaces as a past participle strongly suggests that the *te*-infinitive in (168b) is not verbal, as the IPP-effect is normally obligatory in °verbal complexes of the type Aux$_{perfect}$-V$_{(non\text{-})main}$-(te) V$_{inf}$. An independent reason for rejecting a verbal analysis of the *te*-infinitive is that it seems quite a robust generalization that main verbs in the form of *te*-infinitives always appear last in the clause-final °verb cluster; the fact that the *te*-infinitive precedes the past participle in (168b) thus strongly militates against a verbal analysis. That *hangen* can be used as a main verb in (168a) is also supported by the fact illustrated in (169) that it exhibits the causative alternation discussed in Section 3.2.3, just like the unequivocal main verb *hangen* in the pair *De jas hangt in de kast* 'The coat hangs in the closet' and *Jan hangt de jas in de kast* 'Jan is hanging the coat in the closet'. Such alternations would be entirely unexpected for non-main verbs by definition since they do not take arguments.

(169) a. De was hangt buiten te drogen.
the laundry hangs outside to dry
'The laundry is hanging outside to dry.'
b. Jan hangt de was buiten te drogen.
Jan hangs the laundry outside to dry
'Jan is hanging the laundry outside to dry.'

It is nevertheless important to decide whether or not *hangen* can be also be used as a semi-aspectual verb in (168a), that is, whether (168c) is part of Dutch °core grammar or a case of hypercorrection. The former cannot be excluded: example (170b) does exhibit an obligatory IPP-effect in the perfect tense and should therefore be seen as a semi-aspectual construction; cf. Haeseryn et al. (1997:974).

(170) a. De appels hangen aan de boom te rotten.
the apples hang on the tree to rot
'The apples are rotting on the tree.'
b. De appels hebben aan de boom hangen te rotten.
the apples have on the tree hang to rot
c. *?De appels hebben aan de boom te rotten gehangen.
the apples have on the tree to rot hung

This strongly suggests that example (168a) is ambiguous between the non-main and main verb reading of *hangen* and that the ambiguity can be resolved by means of perfect tense. If true, we predict the following: in perfect-tense constructions such as (168b) without the IPP-effect, the verb *hangen* is a main verb and causativization is therefore predicted to be possible; in constructions such as (168c) with the IPP-effect, the verb *hangen* is a non-main verb and causativization is predicted to be excluded. The examples in (171) show that these predictions are indeed correct.

(171) a. Jan heeft de was buiten te drogen gehangen.
Jan has the laundry outside to dry hung
'Jan has hung the laundry outside to dry.'
b. *Jan heeft de was buiten hangen te drogen.
Jan has the laundry outside hang to dry

The discussion so far has shown that constructions with *hangen* + *te*-infinitive may exhibit a number of properties that are unexpected if *hangen* categorically functioned as a semi-aspectual verb: (i) the lexical meaning of the main verb *hangen* is difficult to suppress, (ii) often the IPP-effect does not occur, (iii) the *te*-infinitive may precede the verbs in the clause-final verb cluster, and (iv) constructions with *hangen* may undergo causativization. These properties strongly suggest that *hangen* can be used as a main verb when followed by a *te*-infinitive. Note, however, that this does not imply that *hangen* is never used as a semi-aspectual verb since we have seen that the construction in (170) is a likely candidate for such an analysis.

The fact that *hangen* can be a main verb when accompanied by a non-verbal *te*-infinitive leads one to expect that the main verb *zitten* 'to sit', *liggen* 'to lie', *staan* and *lopen* 'to walk' may sometimes also be combined with a non-verbal *te*-infinitive. Fortunately, we now have three tests that can used to distinguish the main verbs from the semi-aspectual ones: (i) the occurrence of the IPP-effect, (ii) the placement of the *te*-infinitive, and (iii) causativization. We illustrate this by means of the examples in (172) and (173). The examples in (172) show that with a typical activity verb like *lezen* 'to read' we find all the properties attributed to the semi-aspectual constructions; IPP is obligatory, the *te*-infinitive must follow the verb *liggen* 'to lie', and causativization is impossible. Note in passing that the verb *leggen* 'to put' in (172d) is the causative counterpart of *liggen* 'to lie'.

(172) a. De kinderen liggen in bed te lezen.
the children lie in bed to read
'The children are reading in bed.'
b. De kinderen hebben in bed liggen (te) lezen. [IPP]
the children have in bed lie to read
'The children have been reading in bed.'
c. *De kinderen hebben in bed te lezen gelegen. [No IPP]
the children have in bed to read lain
d. *Marie heeft de kinderen in bed te lezen gelegd. [causativization]
Marie has the children in bed to read put

The examples in (173), on the other hand, seem to be ambiguous, as is clear from the optionality of the IPP-effect; the numbers in square brackets following the perfect-tense examples in (173b&c) refer to results of a Google search (7/14/2012) on the strings [*heeft/hebben liggen te drogen*] and [*te drogen heeft/hebben gelegen*]. As expected, (173b&c) also show that the placement of the *te*-infinitive depends on the occurrence of IPP; in the construction with IPP, the *te*-infinitive is verbal and must therefore follow *liggen*, whereas in the construction without IPP, the *te*-infinitive is non-verbal and must therefore precede *liggen*. Finally, the acceptability of the causative construction in (173d) unequivocally shows that *liggen* need not be interpreted as a semi-aspectual non-main verb in (173a) but can also be construed as a main verb.

(173) a. De tomaten liggen in de schuur te drogen.
the tomatoes lie in the shed to dry
‘The tomatoes are drying in the shed/lie in the shed to dry.’
b. De tomaten hebben in de schuur liggen te drogen. [IPP/40]
the tomatoes have in the shed lie to dry
‘The tomatoes have been drying in the shed.’
c. De tomaten hebben in de schuur te drogen gelegen. [no IPP/10]
the tomatoes have in the shed to dry lain
‘The tomatoes have lain in the shed to dry.’
d. Jan heeft de tomaten in de schuur te drogen gelegd. [causativization]
Jan has the tomatoes in the shed to dry put
‘Jan has put the tomatoes in the shed to dry.’

A similar conclusion can be drawn on the basis of the behavior of particle verbs such as *wegrotten* ‘to rot’: if the *te*-infinitive is verbal, the particle and the verbal part are separated by the infinitival marker *te*, but this is not the case if the *te*-infinitive is non-verbal. The acceptability contrast between (174b&c) indicates that *te*-infinitives in IPP-constructions and *te*-infinitives in constructions without IPP have a different categorial status.

(174) a. De tomaten liggen in de schuur weg te rotten.
the tomatoes lie in the shed away to rot
‘The tomatoes are rotting away in the shed.’
b. De tomaten hebben in de schuur liggen weg te rotten. [IPP]
the tomatoes have in the shed lie away to rot
‘The tomatoes have been rotting away in the shed.’
c. *De tomaten hebben in de schuur weg te rotten gelegen. [no IPP]
the tomatoes have in the shed away to rot lain

This subsection has shown that verbs like *zitten* ‘to sit’, *liggen* ‘to lie’, *staan* ‘to stand’ and *hangen* ‘to hang’ should not be mechanically analyzed as semi-aspectual verbs in combination with a *te*-infinitive given that they are potentially ambiguous between a main and a semi-aspectual, non-main verb reading. The two readings can be distinguished by considering whether the corresponding perfect-tense constructions exhibit the IPP-effect, the placement of the *te*-infinitive with respect to the clause-final verbs and the possibility of causativization.

(175) The use of *zitten*, *liggen, staan* and *hangen* in V + *te*-infinitive constructions

	MAIN VERB	NON-MAIN VERB
IPP	—	+
ORDER W.R.T. (OTHER) CLAUSE-FINAL VERBS	non-verbal *te*-infinitive precedes the clause-final verbs	verbal *te*-infinitive follows the clause-final verbs
CAUSATIVIZATION	+	—

If the analysis in this subsection is on the right track, we should conclude that the *te*-infinitive is non-verbal in nature if verbs such as *zitten* are used as main verbs, and are thus not part of the verbal complex. This raises the question what the function of the *te*-infinitive is when it is combined with a main verb. A plausible analysis seems to be that it functions as a °complementive, as the examples in (176) show that it must be immediately left-adjacent to the clause-final verb cluster, a hallmark of such phrases; see Section 2.2.

(176) a. De tomaten hebben in de schuur *te drogen* *gelegen*.
the tomatoes have in the shed to dry lain
'The tomatoes have been lying in the shed to dry.'
b. *De tomaten hebben *te drogen* in de schuur *gelegen*.
the tomatoes have to dry in the shed lain

Although causativization is restricted to a small groups of unaccusative verbs, we can certainly use the pattern in the first two rows of Table (175) as a diagnostic in order to establish the (non-)verbal status of *te*-infinitives more generally: this leads to the generalizations in (177), which the following subsections will apply to the constructions in (166).

(177) a. Verbal *te*-infinitives trigger the IPP-effect and follow the (other) verbs in clause-final position;
b. Non-verbal *te*-infinitives are incompatible with the IPP-effect and precede the verbs in clause-final position.

II. Zijn/Vinden/achten + te-*infinitive*

This subsection discusses whether the verbs *zijn* 'to be' and *vinden*/*achten* 'to consider' function as non-main verbs in the primeless examples in (178), as suggested by Haeseryn et al. (1997:956). This suggestion is in fact slightly surprising in view of the fact that Haeseryn et al. (1997:1037) also note that these cases are very similar to the complementive constructions in the primed examples. Note in passing that the difference between *vinden* and *achten* is a matter of register: the latter is mainly used in more formal contexts.

(178) a. De komeet is de hele week te zien.
the comet is the whole week to see
'The comet can be seen all week.'
a′. De komeet is de hele week zichtbaar.
the comet is the whole week visible
'The comet is visible all week.'

b. Ik vind/acht haar gedrag te prijzen.
I consider her behavior to praise
‘I consider her behavior commendable.’
b′. Ik vind/acht haar gedrag prijzenswaardig.
I consider her behavior commendable
‘I consider her behavior commendable.’

If we assume that the *te*-infinitives are like the adjectives in that they also function as complementives, we will immediately account for the following two facts illustrated in (179): there is no IPP-effect in the corresponding perfect-tense constructions, and the *te*-infinitives must precede the verbs *zijn* and *vinden* when they are in clause-final position; cf. (177). Note in passing that *wezen* in (179a) is the form of *zijn* that normally occurs in IPP-contexts, as is clear from the fact that *Jan is wezen vissen* ‘Jan has been fishing’ functions as the perfect-tense counterpart of *Jan is vissen* ‘Jan is fishing’; see Section 6.4.2 for discussion.

(179) a. De komeet is de hele week te zien geweest/*wezen.
the comet is the whole week to see been/be
‘The comet could be seen all week.’
a′. De komeet is de hele week <te zien> geweest <*te zien>.
b. Ik heb haar gedrag altijd te prijzen gevonden/vinden.
I have her behavior always to praise considered/consider
‘I’ve always considered her behavior commendable.’
b′. Ik heb haar gedrag altijd <te prijzen> gevonden <*te prijzen>.

We will adopt this complementive analysis here, especially since analyzing the verbs *zijn* and *vinden* in (179) as non-main verbs undermines the otherwise robust generalization that verbal *te*-infinitives always appear last in the clause-final verb cluster. A more detailed discussion of the primeless examples in (178) is given in Section A9 on modal infinitives.

III. Hebben/krijgen/geven + te-*infinitive*

This subsection discusses whether the verbs *geven* ‘to give’, *hebben* ‘to have’ and *krijgen* ‘to get’ function as non-main verbs in the examples in (180), as suggested by Haeseryn et al. (1997:956).

(180) a. Ze geven de kat erg veel te eten. [*geven*]
they give the cat very much to eat
‘They give the cat a lot to eat.’
b. De kat heeft/krijgt erg veel te eten. [*hebben*/*krijgen*]
the cat has/gets very much to eat
‘The cat has/gets a lot to eat.’

The fact that the verbs in (180) express the same meaning as the unequivocal main verbs in (181) strongly suggest that the verbs *geven*, *hebben* and *krijgen* also function as main verbs in the former examples.

(181) a. Ze geven de kat erg veel voer.
they give the cat very much food
'They give the cat a lot of food.'
b. De kat heeft/krijgt erg veel voer.
the cat has/gets very much food
'The cat has/gets a lot of food.'

Again Haeseryn et al. (1997:1030-1/44) suggest the same thing by saying that the *te*-infinitives may function as postnominal modifiers, that is, in (180) *te eten* can be seen as a kind of reduced relative clause of the nominal expression *erg veel*. That such an analysis may indeed be tenable is clear from the fact that it is possible to place the combination of the noun phrase and the *te*-infinitive in clause-initial position, as is shown by the primeless examples in (182). A potential problem, however, is that it is also possible to strand the *te*-infinitive, as in the primed examples; normally, this is not possible with postnominal modifiers.

(182) a. Erg veel te eten geven ze de kat niet.
very much to eat give they the cat not
a′. Erg veel geven ze de kat niet te eten.
b. Erg veel te eten heeft/krijgt de kat niet.
very much to eat has/gets the cat not
b′. Erg veel heeft/krijgt de kat niet te eten.

Another virtue of the suggested analysis is that it immediately accounts for the fact illustrated in (183) that the construction does not exhibit the IPP-effect and that the *te*-infinitive may precede the verbs in clause-final position; cf. (177).

(183) a. Ze hebben de kat erg veel te eten gegeven/*geven.
they have the cat very much to eat given/give
'They've given the cat a lot to eat.'
a′. Ze hebben de kat erg veel <te eten> gegeven <*te eten>.
b. De kat heeft erg veel te eten gehad/*hebben.
the cat has very much to eat had/have
'The cat has had a lot to eat.'
b′. De kat heeft erg veel <te eten> gehad <*te eten>.
c. De kat heeft erg veel te eten gekregen/*krijgen.
the cat has very much to eat got/get
'The cat has been given a lot to eat.'
c′. De kat heeft erg veel <te eten> gekregen <*te eten>.

We will therefore adopt this analysis here, especially since analyzing the verbs *geven*, *hebben* and *krijgen* as non-main verbs would again undermine the otherwise robust generalization that *te*-infinitives with the function of main verb always appear last in the clause-final verb cluster.

Besides the constructions discussed above, Haeseryn et al. (1997:1029) distinguish a second type of *hebben*/*krijgen* + *te*-infinitive construction with a deontic modal meaning. The examples in (184) show that in such cases the *te*-infinitive often seems acceptable both in front of and after the finite verb in clause-final position. The numbers between brackets provide the results of a Google search (7/15/2012) on the strings [*te doen heeft wat*], [*heeft te doen wat*], [*tegenslagen te verwerken had*] and [*tegenslagen had te verwerken*], and show that the *te*-infinitives preferably precede *hebben* in clause-final position but that the alternative order is still reasonably common.

(184) a. dat Jan maar <te doen> heeft <te doen> wat ik zeg. [27/8]
that Jan PRT to do has what I say
'that Jan only needs to do as I say.'
b. dat ze veel tegenslagen <te verwerken> had/kreeg <te verwerken>. [61/7]
that she many setbacks to process had/got
'that she had to cope with many setbacks.'

It is not so clear what examples of the type in (184) tell us; they are after all somewhat idiomatic and seem to belong to the formal register. This holds especially for example (184a): (185a) shows that this example cannot occur in the perfect tense, as a result of which we cannot test whether it exhibits the IPP-effect. The (b)-examples in (185) show that example (184b) does have a perfect-tense counterpart; the facts that the IPP-effect does not occur and that the *te*-infinitive must precede the past participle *gehad* strongly suggest that the *te*-infinitive is non-verbal in nature. This means that the order *had te verwerken* in (184b) may be a case of hypercorrection, a common feature of constituents looking like verbal elements (here: *te verwerken*); see Haeseryn et al. (1997:111).

(185) a. *Hij heeft maar <te doen> hebben/gehad <te doen> wat ik zeg.
he has PRT to do have/had what I say
b. Ze heeft veel tegenslagen <te verwerken> gehad/gekregen <*te verwerken>.
she has many setbacks to process had/gotten
b′. *Ze heeft veel tegenslagen <te verwerken> hebben/krijgen <te verwerken>.
she has many setbacks to process had/get

Because of the problems discussed above we will put the examples in (184) aside together with many other more or less fixed expressions with *hebben*/*krijgen* mentioned in Haeseryn et al. (1997:1029ff.). The fact that these expressions normally allow, prefer or even require the *te*-infinitive to be to the left of the clause-final verbs strongly suggests that the *te*-infinitives involved are non-verbal in nature; the less frequent cases in which these non-verbal *te*-infinitives follow the clause-final verbs should again be seen as hypercorrection or imperfect learning of the more formal register.

IV. Komen + te-*infinitive*

This subsection concludes with a discussion of examples such as (186a). The (b)-examples show the by now familiar properties of constructions with a non-verbal *te*-infinitive: there is no IPP-effect and the *te*-infinitive precedes the verbs in clause-final position.

(186) a. Jan komt dat niet te weten.
Jan comes that not to know
'Jan won't find that out.'

b. Jan is dat niet <te weten> gekomen <*te weten>.
Jan is that not to know come$_{\text{part}}$
‘Jan hasn’t found that out.’
b′. *Jan is dat niet <te weten> komen <te weten>.
Jan is that not to know come$_{\text{inf}}$

The examples in (187) constitute a potential problem for the claim that *komen* does not function as a non-main verb when combined with a *te*-infinitive because they exhibit all the hallmarks of constructions with a verbal *te*-infinitive: they may exhibit the IPP-effect and when they do the *te*-infinitive must follow the verbs in clause-final position. According to Haeseryn et al. (1997:983) the form in (187b′) is the more common one, which was confirmed by a Google search on the strings [*duur te staan gekomen*] and [*duur komen te staan*]. We should, however, put this example aside since it is clearly idiomatic in nature: the meaning is non-compositional and paradigmatically restricted, as is clear from the fact that neither *duur* nor *staan* can be replaced by some other form.

(187) a. Dat komt Peter duur te staan.
that comes Peter expensive to stand
‘That will cost Peter dearly.’
b. Dat is Peter duur <te staan> gekomen <*te staan>. [138]
that is Peter expensive to stand come$_{\text{part}}$
‘That has cost Peter dearly.’
b′. Dat is Peter duur <*te staan> komen <te staan>. [429.000]
that is Peter expensive to stand come$_{\text{inf}}$
‘That has cost Peter dearly.’

Other cases mentioned by Haeseryn et al. (1997) in which the *te*-infinitive exhibits verbal behavior are given in (188), but since these examples have an idiomatic flavor we will ignore them as well. Note, however, that if one were to argue that such constructions are productively formed and thus part of Dutch °core grammar, we would have to modify our earlier claim in such a way that besides the semi-aspectual verbs discussed in 6.3.1, the semi-aspectual non-main verb *komen* is also able to select a *te*-infinitive. This would not affect our more significant claim that *te*-infinitives are non-verbal in constructions that do not exhibit the IPP-effect or allow the *te*-infinitive to precede the verbs in clause-final position.

(188) a. dat zij snel daarna is komen te overlijden.
that she soon after.that is come to die
‘that she died soon after that.’
b. dat hij lelijk is komen te vallen.
that he nastily is come to fall
‘that he had a nasty fall.’
c. dat dat nare jochie naast me kwam te zitten.
that that nasty boy next.to me came to sit
‘that that nasty boy was placed next to me.’

For completeness’ sake, note further that (188c) does not have a past perfect counterpart with *te*: **dat het nare joch naast me is komen te zitten*—the perfect-tense construction without *te* is acceptable but has a different (more agentive) interpretation than the simple past form: *dat het nare joch naast me is komen zitten* ‘that the nasty boy took a seat next to me’.

6.3.3. Conclusion

The previous sections have discussed non-main verbs taking a *te*-infinitive as their complement, and has shown that there are reasons for assuming that this option arises with semi-aspectual verbs only. Other constructions that could potentially involve non-main verbs with a *te*-infinitive were shown to actually involve a main verb and a *te*-infinitive with some other syntactic function, such as complementive or postnominal modifier. The two types of constructions can be identified by generalizing the first two properties of semi-aspectual (non-main) and main verbs *zitten*, *liggen*, *staan* and *hangen* in Table (189) to all constructions involving a V + *te*-V combination

(189) Properties of main and non-main verbs combining with a *te*-infinitive

	MAIN VERB	NON-MAIN VERB
IPP	—	+
ORDER W.R.T. (OTHER) CLAUSE-FINAL VERBS	non-verbal *te*-infinitive precedes the clause-final verbs	verbal *te*-infinitive follows the clause-final verbs
CAUSATIVIZATION	+	—

The conclusion that non-main verbs trigger the IPP-effect and require the *te*-infinitive to precede the clause-final verbs is important given that it will simplify our description of the clause-final °verb cluster. We can simply postulate that *te*-infinitives are obligatorily placed in final position, and we do not have to introduce any complicated argumentation to account for the deviant behavior of the *te*-infinitives that can be found with the verbs discussed in Section 6.3.2 on “unclear cases”; these *te*-infinitives do not function as the main verb of the clause and are therefore not part of the verbal complex.

6.4. Non-main verbs selecting a bare infinitive

This section discusses a number of non-main verbs taking a bare infinitive as their complement. Section 6.4.1 starts with a discussion of the aspectual verbs *gaan* ‘to go’, *komen* ‘to come’ and *blijven* ‘to stay’; an example is given in (190a). While the aspectual verbs are generally taken to be non-main verbs, this is controversial for the verb *zijn* in the so-called absentive construction in (190b), which has also been analyzed as a copular construction. Section 6.4.2 will argue against analyzing *zijn* as a copular verb and provides some evidence in favor of the more traditional view that it functions as a non-main verb.

(190) a. De kat *gaat* muizen *vangen*.
the cat goes mice catch
‘The cat is going to catch mice.’

b. De kat is muizen *vangen*.
the cat is mice catch
‘The cat is off catching mice.’

We conclude this section with a discussion of the use of the verb *doen* 'to do' in examples such as (191b); this use of *doen* is restricted to cases in which the verb that would normally appear as the finite verb of the clause is topicalized. We will argue that *doen* is like English *to do* in that it is inserted as a last resort: it saves the structure from ungrammaticality given that it allows the tense and agreement features of the clause to be expressed.

(191) a. Ik wandel niet graag.
I walk not gladly
'I don't like to walk.'
b. Wandelen doe ik niet graag.
walk do I not gladly
'I don't like to walk.'

6.4.1. Aspectual verbs

This section discusses the aspectual verbs, that is, inchoative *gaan* 'to go' and *komen* 'to come', and continuative *blijven* 'to stay'. Examples are given in (192), in which the °verbal complexes are given in italics. Subsection I begins by showing that the meaning contribution of the verbs in these examples is aspectual in nature, and Subsection II shows that as a result of this the bare infinitive selected by the aspectual verb must have an internal temporal structure, that is, it must be dynamic.

(192) a. De kat *gaat* muizen *vangen*.
the cat goes mice catch
'The cat is going to catch mice.'
b. Marie *komt* morgen mijn computer *repareren*.
Marie comes tomorrow my computer repair
'Marie will come tomorrow to repair my computer.'
c. Els *blijft* zijn stelling *betwisten*.
Els remains his claim contest
'Els continues to contest his claim.'

Subsection III continues by showing that there is no evidence that the aspectual verbs are able to take °arguments, which is the main reason to consider them non-main verbs, and subsection IV shows that the bare infinitives are verbal (and not nominal) in nature. The discussion is concluded with two digressions: Subsection V discusses the claim in Haeseryn et al. (1997) that *gaan* sometimes functions as a future auxiliary and argues that this claim is incorrect; Subsection VI compares examples such as (192a) with examples like *De kat gaat uit muizen vangen* 'lit.: The cat is going out catching mice' and will argue that despite the seeming similarity between them, the two constructions have totally different structures.

I. Meaning contribution of the aspectual verbs

The verbs *gaan* and *komen* are also used as main verbs denoting movement, and *blijven* as a main verb denoting lack of movement; in such cases the verb is typically combined with a directional/locational °complementive that denotes the (new) location.

(193) a. Jan gaat weg/naar Amsterdam.
Jan goes away/to Amsterdam
‘Jan is going away/to Amsterdam.’
b. Jan komt boven/naar Amsterdam.
Jan comes upstairs/to Amsterdam
‘Jan is coming upstairs/to Amsterdam.’
c. Jan blijft buiten/in Amsterdam.
Jan stays outside/in Amsterdam
‘Jan stays outside/in Amsterdam.’

For what will follow it is important to note that examples like (193a&b) express not only that the °logical SUBJECT *Jan* of the adpositional complementive is undergoing a change of location, but also have certain implications concerning the location of the speaker/addressee. Let us assume that every discourse has a DEICTIC CENTER, normally taken as the “here and now” of the speaker and/or the hearer by default. An example such as (193a) with *gaan* ‘to go’ then suggests that Amsterdam is not part of the deictic center, whereas examples such as (193b) with *komen* ‘to come’ suggest that it is. Examples such as (193c) with *blijven* ‘to stay’ are more neutral in this respect; Amsterdam may or may not be part of the deictic center.

It should be noted that the deictic center is not only dependent on the choice of verb but also by the subject of the construction. Consider the primeless examples in (194) with a first person pronoun as subject: example (194a) is normally construed such that Utrecht is not part of the deictic center, whereas (194b) is construed such that Utrecht is part of the deictic center, which is taken as the “here and now” of the addressee. The primed examples with a second person pronoun show a similar contrast with one crucial difference: example (194a′) is again construed such that Utrecht is not part of the deictic center, whereas (194b′) is construed such that Utrecht is part of the deictic center, which is, however, taken as the “here and now” of the speaker in this case.

(194) a. Ik ga naar Utrecht.
I go to Utrecht
‘I’m going to Utrecht.’
b. Ik kom naar Utrecht.
I come to Utrecht
‘I’m coming to Utrecht.
a′. Je gaat toch naar Utrecht?
you go PRT to Utrecht
‘You’re going to Utrecht, aren’t you?’
b′. Je komt toch naar Utrecht?
you come PRT to Utrecht
‘You’re coming to Utrecht, aren’t you?’

Sometimes the deictic center can/must be determined on the basis of contextual information. In example (195a), the deictic center may be construed as the “here or now” of the speaker/addressee (the default interpretation), but also as the “here and now” of the subject *Jan*. Example (195b) cannot receive the default interpretation but requires deictic center to be construed as the “here and now” of Jan’s parents.

(195) a. Jan gaat vaak bij zijn ouders op bezoek.
Jan goes often with his parents on visit
‘Jan visits his parents often.’
b. Jan komt vaak bij zijn ouders op bezoek.
Jan comes often with his parents on visit
‘Jan visits his parents often.’

The spatial implications of the examples in (193) can also be present when *gaan* ‘to go’, *komen* ‘to come’ and *blijven* ‘to stay’ take an infinitival complement. As the acceptability judgments on the presence of the adverbial phrases *daar* ‘there’ and *hier* ‘here’ show, examples such as (196a) with *gaan* strongly prefer that the location at which Jan will stay is not part of the deictic center, whereas examples such as (196b) with *komen* strongly prefer that it is; examples such as (196c) with *blijven* are again not sensitive to this effect. The use of the percentage sign indicates that examples with the less preferred adverbs do occur on the internet.

(196) a. Jan gaat daar/$^{\%}$hier een tijdje logeren.
Jan goes there/here a time stay
‘Jan will stay there for some time.’
b. Jan komt hier/$^{\%}$daar een tijdje logeren.
Jan comes here/there a time stay
‘Jan will stay here for some time.’
c. Jan blijft hier/daar een tijdje logeren.
Jan stays here/there a time stay
‘Jan will stay here/there for some time.’

The examples in (196) are not only strictly locational but also aspectual in nature: the verbs *gaan* and *komen* also express inchoative aspect and thus imply that the °eventuality denoted by the infinitive will only be realized after speech time; the verb *blijven* also expresses continuative aspect and thus implies that the eventuality denoted by the infinitive is ongoing at speech time. The examples in (197) show that the verbs *gaan* and *blijven* can also have a purely aspectual meaning: example (197a) can be used when the speaker is already in bed and is simply announcing that he is going to sleep and example (197c) with *blijven* does not imply that Jan will remain in the deictic center. A purely aspectual reading of *komen* is not easy to get: an example such as (197b) strongly suggests that the speaker still has to join the addressee in the bed(room).

(197) a. Ik ga zo slapen. [purely aspectual]
I go soon sleep
‘I’m about to go to sleep.’
b. Ik kom zo slapen. [movement + aspectual]
I come soon sleep
‘I’ll come to bed soon.’
c. Jan blijft maar zeuren. [purely aspectual]
Jan stays PRT nag
‘Jan keeps nagging.’

II. Restrictions on the bare infinitive

Since the aspectual verbs express inchoative/continuative aspect, we expect that they cannot be combined with stative predicates; the predicate must be dynamic in the sense of Verkuyl (1972/2005). This is illustrated by means of the contrast between the two examples in (198); note that we found one case such as (198b), but in that case, *gaat ziek zijn* clearly means something like “is going to simulate being ill”.

(198) a. Jan gaat ziek worden.
Jan goes ill become
b. *Jan gaat ziek zijn.
Jan goes ill be

Things are, however, not so simple given that it is easily possible to find examples such as (199b). Although it is not clear to us how to account for the contrast between the examples in (198) and (199), it is important to note that example (199b) receives a dynamic meaning: such examples are typically used when the speaker announces that something is going to happen that will make Jan angry.

(199) a. Jan gaat boos worden.
Jan goes angry become
b. Jan gaat boos zijn.
Jan goes angry be

The examples in (200a) show that all aspectual verbs can readily be used with activities; the constructions as a whole simply indicate that the activity will start/is continuing. Whereas the inchoative verbs *gaan* and *komen* are fully acceptable with accomplishments, the continuative verb *blijven* triggers a special effect: the use of the diacritic “$” in (200b) indicates that this verb is only possible if the sentence allows a repetitive reading. Example (200c) shows that the verbs *gaan* and *blijven* are also compatible with achievement verbs and refer to respectively the starting point and the continuation of the melting process; the fact that *komen* gives rise to an unacceptable result may be due to the fact discussed in subsection I that the lexical meaning of the corresponding main verb is difficult to suppress; cf. example (197b). Note that we did not aim at capturing the aspectual differences between the three verbs in the translations.

(200) a. Jan gaat/komt/blijft een tijdje logeren. [activity]
Jan goes/comes/stays a time stay
‘Jan will be staying for some time.’
b. Jan gaat/komt/$^{\$}$blijft dat liedje zingen. [accomplishment]
Jan goes/comes/stays that song sing
‘Jan will be singing that song.’
c. Het ijs gaat/*komt/blijft smelten. [achievement]
the ice goes/comes/stays melt
‘The ice will/continues to melt.’

The aspectual nature of the verbs *gaan, komen* and *blijven* predicts that the eventuality denoted by the bare infinitive must have an internal temporal structure. This means that verbs that occur instantaneously are expected to be impossible. The actual situation is, however, more complex: examples such as (201), for example, are possible but trigger a special effect: examples such as (201a) suggest that the eventuality does have a temporal extension, and examples such as (201b) receive a repetitive reading.

(201) a. De lamp gaat omvallen.
the lamp goes fall.over
‘The lamp is going to fall down.’
b. De lamp blijft omvallen.
the lamp stays fall.over
‘The lamp keeps falling down.’

If a repetitive reading clashes with our knowledge of the world, as in (202a), the verb *blijven* yields an impossible result. It is very hard to find cases in which *gaan* is excluded: examples such as (202b) are normally perfectly acceptable under a semelfactive reading.

(202) a. Jan gaat/*blijft overlijden.
Jan goes/stays die
‘Jan is going to die.’
b. Jan gaat niezen/knipogen.
Jan goes sneeze/blink
‘Jan is going to sneeze/blink’

The acceptability of (202b) thus suggests that it is generally possible for speakers to assign an internal temporal structure (beginning—main event—conclusion) to verbs of this type. An alternative would be to claim that *gaan* is not an aspectual but a future auxiliary, but we will show in Subsection V that there is little evidence to support such a claim.

III. There is no evidence that aspectual verbs take arguments

The reason for treating the aspectual verbs *gaan*, *komen* and *blijven* as non-main verbs is that there is no clear evidence to the contrary. There is no clear reason for assuming that the subject of the clause is an argument of the infinitive. The examples in (203) further show that, unlike in the case of deontic modal verbs, the bare infinitival complement cannot be pronominalized.

(203) a. Jan gaat/komt/blijft werken. a′. *Jan gaat/komt/blijft dat.
Jan goes/comes/stays work Jan goes/comes/stays that
b. Jan moet/kan werken. b′. Jan moet/kan dat.
Jan must/can work Jan must/can that

The ungrammaticality of (203a′) is, of course, expected given that the main verbs *gaan*, *komen* and *blijven* are monadic °unaccusative verbs and hence allow at most one nominal argument; the examples in (204) show that it is very likely that the aspectual verbs are also unaccusative, given that they take the auxiliary *zijn* in the perfect tense.

(204) a. Jan is/*heeft daar gaan zwemmen.
Jan is/has there go swim
b. Jan is/*heeft hier komen werken.
Jan is/has here come work
c. Jan is/*heeft daar blijven logeren.
Jan is/has there stay stay

The examples in (205) therefore show that it is also impossible to pronominalize the bare infinitival complement together with the subject of the clause. In this respect the aspectual verbs differ from the epistemic modal verbs, which do allow this.

(205) a. Jan gaat/komt/blijft werken. a′. *Dat gaat/komt/blijft.
Jan goes/comes/stays work that goes/comes/stays
b. Jan moet/kan nu wel werken. b′. Dat moet/kan nu wel.
Jan must/can now PRT work that must/can now PRT

Note in passing that the impossibility of pronominalization makes it difficult to decide what the syntactic structure of construction as a whole is. Do the aspectual verbs resemble the deontic modals in entering °a control structure, that is, a structure like [NP V_{ASP} [PRO ... V]], or do they resemble the epistemic modals in entering a °subject raising construction, that is, a structure like [NP_i V_{ASP} [t_i ... V]]? It is not entirely clear what would count as sufficient evidence for one of the two structures, but examples such as (206a) suggest that the raising analysis may be the correct one: the subject of the main clause clearly functions as the external argument (subject) of the bare infinitive and it would be unclear how it could be semantically licensed by the aspectual verb. This conclusion also seems to be supported by the fact that (206b) has the currently popular idiomatic reading of “to go bankrupt”.

(206) a. De boom gaat sterven.
the tree goes die
‘The tree is going to die.’
b. Die spaarbank gaat omvallen.
that savings.bank goes prt-fallen
‘That savings bank is going to collapse.’

IV. The bare infinitive is verbal in nature

The impossibility of pronominalization illustrated in Subsection III implies that it is highly unlikely that the bare infinitives involved are nominalizations; the bare infinitives must therefore be verbal in nature, which is also supported by the fact that the perfect-tense examples in (207) exhibit the IPP-effect. We will not try to give an English rendering of these examples but simply note that the examples in (207a&b) express that the inception of the eventuality of swimming/working is completed (while the eventuality itself may still be going on), whereas example (207c) seems to suggest that the visiting eventuality is fully completed.

(207) a. dat Jan daar is gaan/*gegaan zwemmen.
that Jan there is go/gone swim
b. dat Jan hier is komen/*gekomen werken.
that Jan here is come_{inf}/$\text{come}_{\text{part}}$ work
c. dat Jan daar is blijven/*gebleven logeren.
that Jan there is stay/stayed stay

V. The verb gaan *is not a future auxiliary*

Haeseryn et al. (1997:976ff.) claim that *gaan* can be used as a future auxiliary, because an example such as (208a) is normally interpreted in such a way that it refers to a future eventuality of raining. This claim seems untenable, however, in view of the fact that *gaan* + infinitive constructions also occur in the perfect tense; the perfect-tense example in (208b) makes it crystal clear that *gaan* only pertains to the starting point of the eventuality, which is situated in the actualized part of the present-tense interval. The future interpretation of (208a) therefore cannot be attributed to the use of *gaan*, but reflects the fact that the simple present more generally situates eventualities in the non-actualized part of the present-tense interval; see Section 1.5.2 for detailed discussion.

(208) a. Het gaat regenen.
it goes raining
'It is going to rain.'
b. Het is gaan regenen.
it is go rain
'It has started to rain.'

Haeseryn et al. (1997:978) further note that there is a large number of more or less fixed expressions consisting of *gaan* + bare infinitive that seem to denote future events. These involve, for example, the bare infinitives *oversteken* 'to cross a street', *promoveren* 'to take a doctoral degree', *trouwen* 'to marry', *van baan veranderen* 'change jobs', *verhuizen* 'to move house'. The fact that these collocations can normally also appear in the present perfect again shows that we are not dealing with future auxiliaries. For the examples in (209), it is not very clear what the meaning contribution of *gaan* is but it seems that it emphasizes the processes that preceded the actual acts of marrying and taking a degree.

(209) a. Ik ben gaan trouwen omdat ik zwanger was.
I am go marry because I pregnant was
'I decided to get married because I was pregnant.'
b. Ik ben gaan promoveren omdat ik onderzoek leuk vind.
I am go take.degree because I research nice consider
'I decided to take my PhD degree because I like research.'

In short, the fact that the non-main verb *gaan* can be used in perfect-tense constructions and the fact that such constructions situate the starting point of the eventuality denoted by the main in the actualized part of the present-tense interval shows that *gaan* is not a future, but an aspectual auxiliary. The fact that present-tense constructions with *gaan* often refer to eventualities in the non-actualized part of the present-tense interval is not due to the verb *gaan*, but reflects a more general property of the present tense.

VI. Vissen gaan *versus* uit vissen gaan

Subsection I has shown that the main verb counterparts of the aspectual verbs *gaan* 'to go', *komen* 'to come' and *blijven* 'to stay' denote (lack of) movement, and that they typically take a locational or directional °complementive; (210a) illustrates this again with an example in which the complementive has the form of the verbal particle *uit* 'out'. The connotation of movement is not necessarily present in the aspectual use of these verbs: the verb *gaan* in examples such (210b) may simply express inchoative aspect.

(210) a. Jan gaat uit. [main verb]
Jan goes out
‘Jan is going out.’
b. Jan gaat vissen. [aspectual verb]
Jan goes fish
‘Jan is going to fish’

This subsection discusses the more special construction in (211a); the contrast with (211b) seems to show that this construction is restricted to the movement verb *gaan* ‘to go’ (although there is a seemingly similar construction with *zijn* ‘to be’, which will be discussed in Section 6.4.2, sub V, and which, at first sight at least, seems to constitute a kind of in-between category). The construction typically refers to “enjoyable” activities which are performed at some location not part of the deictic center, which is typically taken as the home or the workplace of the referent of the subject of the sentence. Typical examples are *uit eten gaan* ‘to eat out’, *uit jagen gaan* ‘to go out hunting’, *uit dansen gaan* ‘to go out dancing’ and *uit winkelen gaan* ‘to go out shopping’. It should be noted, however, that there are also cases like *uit werken gaan* ‘to go out cleaning’ and somewhat obsolete expressions like *uit koken/wassen gaan* ‘to go out cooking/washing’ for performing domestic duties at other people’s homes. The question we want to investigate here is whether *gaan* functions as a main or as an aspectual verb in such constructions, and we will argue that the former is the case.

(211) a. Jan gaat uit vissen. [main/aspectual verb?]
Jan goes out fish
‘Jan is going out fishing.’
b. *Jan komt/blijft uit vissen.
Jan comes/stays out fish

A first observation in favor of assuming that *gaan* functions as a main verb in (211a) is that the particle *uit* does not function as a complementive of the bare infinitive *vissen* ‘to fish’, as is clear from the unacceptability of (212) with *uit* present. This seems to leave us with just one option and that is that *uit* functions as a complementive of the verb *gaan*. This, in turn, suggests that *gaan* is a main verb on the assumption that complementives are unlikely to be selected by non-main verbs.

(212) Jan vist (*uit).
Jan fishes out

A second observation that disfavors a non-main verb analysis of the verb *gaan* is that the bare infinitive does not exhibit verbal behavior: example (213a′) shows that the bare infinitive cannot follow the verb *gaan* and example (213b′) shows that it does not trigger the IPP-effect. The aspectual constructions in the primeless examples are added to illustrate the normal behavior of verbal bare infinitives.

(213) a. dat Jan <vissen> gaat <vissen>.
that Jan fish goes
‘that Jan is going to fish.’
a′. dat Jan uit <vissen> gaat <*vissen>
that Jan out fish goes
‘that Jan is going out fishing.’
b. dat Jan is gaan/*gegaan vissen.
that Jan is go/gone fish
‘that Jan has gone fishing.’
b′. dat Jan uit vissen is gegaan/*gaan.
that Jan out fish is gone/go
‘that Jan has gone out fishing.’

In tandem, the two observations in (212) and (213) lead to the conclusion that *gaan* functions as a main verb in examples such as (211a), which leaves us with the question what function the bare infinitive has. An important observation is that the bare infinitive in the primed examples in (213) is placed in between the complementive *uit* and the main verb *gaan*. The fact that complementives/verbal particles cannot normally be separated from the verbs in clause-final position suggests that the bare infinitive is *part of* the complementive. This is supported by the fact illustrated in (214a) that the sequence *uit* + bare infinitive can be placed in clause-initial position and by the fact that this sequence may be used in the absolute *met* construction in (214b).

(214) a. Uit vissen is hij nog niet gegaan.
out fish is he not yet gone
‘He hasn’t gone out fishing yet.’
b. [Met Jan uit vissen] hebben we eindelijk rust.
with Jan out fish have we finally peace
‘With Jan out fishing we finally have peace and quiet.’

More evidence in support of the claim that the sequence *uit* + bare infinitive is a constituent is that the infinitive must follow the particle; the examples in (215) show that the bare infinitive can neither be placed more leftward in the °middle field nor be placed in clause-initial position by means of topicalization or *wh*-movement.

(215) a. Jan is <*vissen> uit <vissen> gegaan.
Jan is fish out gone
b. *Vissen$_i$/Wat$_i$ is Jan uit t_i gegaan.
fish/what is Jan out gone

In fact, the constituent consisting of the sequence *uit* + bare infinitive is entirely opaque, as is clear from the fact that internal arguments of the bare infinitives cannot escape this sequence either. This will be especially clear by comparing the unacceptable example in (216b) with the fully acceptable aspectual construction *Wat ging de kat vangen?* ‘What was the cat going to catch?’.

(216) a. De kat ging <*muizen> uit <muizen> vangen.
the cat went mice out catch
'The cat went out catching mice.'
b. *Muizen$_i$/Wat$_i$ ging de kat uit t_i vangen.
mice/what went de cat out catch

Since example (212) has already shown that the particle *uit* is not selected by the verb *vissen* 'to fish', the bare infinitive *vissen* in (211a) must be a complement or a modifier of the adposition *uit*. The latter option is the most likely one for semantic reasons: the particle verb *uitgaan* 'to go out' is typically used to express that the subject is involved in some (outdoor) recreative activity and the bare infinitive can therefore be seen as a modifier specifying this activity, which explains the fact noted earlier that we are generally dealing with "enjoyable" activities. Since °adjuncts (but not complements) are typically °islands for extraction, assuming modifier status for the phrase headed by the bare infinitive may also account for the impossibility of movement in examples like (215) and (216).

The discussion above suggests that example (211a) has essentially the same clausal structure as (210a); we are dealing with the main verb *gaan*, which selects a complementive in the form of the verbal particle *uit*. The bare infinitive is not selected by the verb *gaan* but functions as a modifier of the verbal particle. That we are not dealing with an aspectual structure such as (210b) receives more support from the fact that the lexical meaning of the main verb *gaan* 'to go' can be suppressed in such examples, but not in examples such as (211a). The conclusions we have drawn above are tentative in nature: the syntactic behavior of the *uit vissen gaan* construction has received virtually no attention in the literature; see Paardekooper (1986:136), as well as Haslinger (2007: Section 2.6) for a discussion of the related *uit vissen zijn* construction, which will be discussed in Section 6.4.2, sub V.

6.4.2. Zijn + *bare infinitive (absentive construction)*

If *zijn* is used as a non-main verb, it normally functions as a perfect auxiliary. There is, however, also a more restricted use of *zijn* in which it selects a bare infinitive; we illustrate this use in (217a). De Groot (2000) has called this construction the ABSENTIVE as it expresses that the referent of the subject of the clause is "absent" in a sense to be made precise below; we will follow De Groot by rendering this meaning aspect by means of the particle *off* in the English translations. Although we discuss the absentive construction as part of this chapter on non-main verbs, it is controversial whether we are indeed dealing with a °verbal complex *is vissen* in example (217a); Haslinger (2007:ch.2) has argued that we are actually dealing with a copular construction in which the bare infinitive functions as a nominal °complementive. Note that the absentive construction is typically found in the northern varieties of Dutch (De Schutter 1974). This may be related to the fact that the perfect-tense counterpart of (217a) in (217b) requires the use of the old Germanic infinitival form *wezen* instead of the more recent form *zijn*. The form *wezen* is also restricted to the northern varieties of Dutch (where it is on the decline as well); cf. De Rooij (1986).

(217) Jan is vissen.
Jan is fish
'Jan is off fishing.'
b. Jan is wezen/*zijn vissen.
Jan is be/be fish
'Jan has been off fishing.'

The discussion of the absentive construction is organized as follows. We begin the discussion in Subsection I by briefly considering a number of meaning aspects of the absentive construction. Subsection II deals with the semantic restrictions on the bare infinitive selected by *zijn*. Subsection III continues by showing that there is no straightforward evidence that the verb *zijn* is an argument taking verb, and it will also point to certain complications related to the application of the pronominalization test we proposed for establishing (non-)main status for verbs. Subsection IV reviews the available evidence in favor of the two analyses sketched above and argues that this evidence is not fully conclusive to choose between the two options; we will nevertheless show that the non-main verb analysis is better equipped to handle the relevant data than the copular construction analysis. Subsection V concludes the discussion by comparing the absentive construction in (217) with the seemingly similar construction in (218), in which the absentive meaning aspect is expressed by the particle *uit* 'out'; we will show that the latter construction differs from the absentive in that it is a run-of-the-mill copular construction.

(218) Jan is uit vissen.
Jan is out fish
'Jan is out fishing.'

The absentive construction has not received much attention in the literature to date; see Sassen (1977-8) and Haeseryn et al. (1997;1033-5) for reviews of work preceding De Groot (2000) and Haslinger (2007:ch.2). The discussion in the following subsections will show that there are still many obscurities that need more attention than we are able to give here. We will therefore leave these to future research.

I. Meaning

The absentive construction exhibits certain semantic similarities to clauses containing the aspectual verbs *gaan* 'to go' and *komen* 'to come' discussed in Section 6.4.1. These verbs may be purely aspectual but may also be used such that the lexical meaning of the corresponding main verbs *gaan* and *komen* remains active; in that case, aspectual *gaan* and *komen* express not only inchoative aspect but also that the referent of the subject of the clause undergoes some change of location with respect to the DEICTIC CENTER, which is normally contextually determined or, by default, taken as the "here and now" of the speaker and/or the addressee. Under the default interpretation, the examples in (219) express that Jan will leave/join the speaker/addressee in order to go fishing; the adverbs marked with a dollar sign require the context to provide additional information. See Section 6.4.1, sub II, for a more detailed discussion of the notion of deictic center.

(219) a. Jan gaat daar/$^{\%}$hier een tijdje vissen.
Jan goes there/here a time fish
‘Jan will go there in order to fish a while.’
b. Jan komt hier/$^{\%}$daar een tijdje vissen.
Jan comes here/there a time fish
‘Jan will come here in order to fish a while.’

The absentive construction is like the aspectual construction with *gaan* in that it expresses that the subject of the clause is not present at the implied deictic center; under its default interpretation, example (220a) expresses that Jan is not in the vicinity of but is in fact out of reach of the speaker/addressee. Note in passing that the notion “out of reach” is essentially pragmatically determined; it often involves physical distance but may also include other factors. For example, it is not normal to say (220a) when Marie is in a room adjacent to the one where the speaker is located, but it is possible to say (220b) when the speaker is in a room adjacent to the bathroom. Conventions concerning privacy make Marie sufficiently out of the speaker’s reach in the latter case to justify the use of the absentive—although Haeseryn et al. (1997:1035) claim that even in this case the “physical distance” reading is the most prominent one.

(220) a. Marie is werken.
Marie is work
‘Marie is off working’
b. Marie is douchen.
Marie is take.a.shower
‘Marie is off taking a shower.’

The absentive construction furthermore expresses that Jan is engaged in the activity of fishing in a broad sense. The addition *in a broad sense* is needed to account for the aspectual difference between the absentive and the progressive *aan het* + infinitive constructions such as (221b), which are discussed in Section 1.5.3, sub I.

(221) a. Jan is vissen. [absentive]
Jan is fish
‘Jan is off fishing.’
b. Jan is aan het vissen. [progressive *aan het* + infinitive construction]
Jan is AAN HET fish
‘Jan is fishing.’

Whereas (221b) necessarily implies that the °eventuality of Jan fishing includes the moment of speech, example (221a) need not imply this; it covers a larger range of activities including the leaving of the deictic center, the travelling to the place where the activity denoted by the bare infinitive takes place, the performance of the activity itself, and the return to the deictic center—as long as Jan is engaged with one of these activities, sentence (221a) will be considered true. That this is the case is clear from the fact that the speaker may actually start to use (221a) at the moment that Jan has left the house (and is thus out of the speaker’s reach). In fact, examples such as (222) are very frequent when the speaker wants to announce that he is leaving in order to do something (and will thus be out of the addressee’s reach).

(222) Ik ben vissen!
I am fish
'I'm off fishing.'

Note in passing that the use of utterances such as (222) is otherwise very restricted in speech for pragmatic reasons; the requirement that the referent of the construction has left the deictic center implies that the speaker and the addressee are not involved in face-to-face interaction. Such utterances are very common, though, in written communication. In this respect, examples such as (222) differ considerably from perfect-tense constructions such as *Ik ben wezen vissen* 'I have been off fishing', which are very common in speech because they do not imply absence at the moment of speech, but at some moment preceding it; see Sassen (1977-8) for more discussion.

The discussion above has shown that absentive is typically used when the subject of the clause (i) has left the deictic center, (ii) is out of reach of the speaker/addressee, and (iii) is involved in a broad sense in the activity denoted by the bare infinitive. De Groot further claims that the absentive implies that the subject will return to the deictic center after a certain period of time, which is predictable on the basis of pragmatic knowledge or former experience. This is, however, contested by Haslinger (2007:ch.2), who provides the idiomatic expression in (223a) as a counterexample to this claim. Given the idiomatic nature of the expression, it is not immediately clear how strong this argument is, so we will leave this issue open. Haslinger seems correct, however, in claiming that the time span during which the subject will be out of reach need not be predictable; examples such as (223b) are completely natural.

(223) a. Jan is hemelen.
Jan is be.in.heaven
'Jan has died.'
b. Jan is fietsen en ik heb geen idee wanneer hij terug is.
Jan is cycle and I have no idea when he back is
'Jan is off cycling and I've no idea when he'll be back.'

Although De Groot may somewhat overstate the relevance of pragmatic knowledge, he is certainly right in emphasizing the relevance of the speaker/hearer's knowledge of the world in that the projection of the bare infinitives typically denotes eventualities that have a typical setting or that are typical for the referent of the subject of the clause. If we take the deictic center to include Marie's home, her husband may use example (224a) to refer a series of events starting with Marie leaving the house, getting into her car, driving to the post office, dropping the letter into the letterbox, and returning home. And the use of an example such as (224b) would be strange if Marie was not a regular soccer player.

(224) a. Marie is even een brief posten.
Marie is for.a.moment a letter post
'Marie is off for a moment posting a letter.'
b. Marie is voetballen.
Marie is play.soccer
'Marie is off playing soccer.'

The meaning of the absentive is non-compositional in the sense that it expresses the subject's absence without there being any overt material available that could be held responsible for that meaning aspect. That this meaning aspect is really present is shown again by the question-answer pairs in (225) that show that the sentence *Hij is vissen* 'He is off fishing' can not only be used as an answer to a question like *Wat is Jan aan het doen?* 'What is Jan doing?' but also to a question like *Waar is Jan?* 'Where is Jan?'.

(225) a. Wat is Jan aan het doen? Hij is vissen.
what is Jan AAN HET do he is fish
'What is Jan doing? He's off fishing.'
b. Waar is Jan? Hij is vissen.
where is Jan he is fish
'Where is Jan? He's off fishing.'

The acceptability of the question answer-pair in (225b) may simply be due to the fact that the use of the absentive involves extensive knowledge of the subject's routine, more specifically, that he is normally not performing this activity of fishing at the deictic center. Haslinger (2007:ch.2), however, claims that it is syntactically encoded. We will not discuss her proposal here because it is crucially based on the assumption that absentive constructions involve °control, that is, have the representation NP_i BE [PRO_i .... V_{inf}]. This is, however, implausible given that *zijn* is an unaccusative verb and is therefore rather expected to be in a °subject raising construction: NP_i BE [t_i .... V_{inf}]. We refer the reader to Subsections III and IV for relevant discussion.

II. Semantic restrictions on the bare infinitive

De Groot (2000) and Haslinger (2007) show that there are a number of semantic restrictions on the phrase headed by the bare infinitive. The most important ones are that the subject of the clause is agentive and that the eventuality expressed by this phrase has a certain duration. The bare infinitive is therefore normally an (in)transitive verb denoting an activity or an accomplishment.

(226) a. Jan is wandelen.
Jan is walk
'Jan is off walking.'
b. Jan is een boterham eten.
Jan is a sandwich eat
'Jan is off eating a sandwich.'

Example (227a) shows that °unaccusative verbs do not seem to be possible. This also accounts for De Groot's observation illustrated in (227b) (for which he provides a separate semantic account) that examples such as (226a) become infelicitous when we add a directional complementive, because this makes the movement verb unaccusative. Clear evidence for this is provided by perfect auxiliary selection; see the contrast between *Jan heeft/*is gewandeld* 'Jan has walked' and *Jan is/*heeft naar Groningen gewandeld* 'Jan has walked to Groningen'.

(227) a. *Jan is vertrekken/vallen/stijgen/emigreren.
Jan is leave/fall/rise/emigrate
b. *?Jan is naar Groningen wandelen.
Jan is to Groningen walk
'Jan is off walking to Groningen.'

Another restriction on the use of the absentive is that the eventuality denoted by the bare infinitive is seen as a discrete unit that is performed in an uninterrupted fashion. This is clear from the fact that when the infinitive denotes an accomplishment, the referent of the subject is only expected to return to the deictic center after he has completed the eventuality. The two examples in (228), for example, have different implications for the time span that Marie will be absent; while this time span may be short in the case of (228a), example (228b) strongly suggests that Marie is spending a sabbatical in some far-off place where she will write the book.

(228) a. Marie is een brief schrijven.
Marie is a letter write
'Marie is off writing a letter.'
b. Marie is een boek schrijven.
Marie is a book write
'Marie is off writing a book.'

The nature of the semantic restrictions on the bare infinitives is sometimes somewhat obscure, as is clear from the fact that De Groot and Haslinger occasionally have different acceptability judgments. We will therefore not delve more deeply in this issue but leave it to future research, for which the studies by De Groot and Haslinger provide excellent starting points.

III. There is no evidence that the verb zijn *'to be' takes arguments*

There is no clear evidence for assuming that the verb *zijn* 'to be' in the absentive construction is predicational in nature, that is, able to take nominal arguments. The reason for this is that pronominalization cannot be used as a test for determining whether we are dealing with a main verb in this case. In order to see this, consider the copular construction in (229).

(229) a. Jan is ziek en Marie is het/dat ook.
Jan is ill and Marie is it/that also
'Jan is ill and Marie is it too'
b. Marie is al docent maar Jan is het/dat nog niet
Marie is already teacher but Jan is it/that not yet
'Marie is a teacher already, but Jan isn't yet.'

The problem is that these examples show that the pronouns *het* and *dat* do not only pronominalize nominal arguments but also adjectival and nominal complementives, from which it follows that we cannot conclude from the acceptability of *Jan/Marie is dat ook* in the second conjunct of the examples in (229) that the copula *zijn* is a two-place predicate. According to the so-called small clause analysis discussed in Section 2.2.4, the complementive and its SUBJECT will be generated as a single phrase, and the surface structure is subsequently derived by raising the noun phrase from its base position into the subject position of the clause. On this analysis, the subject of the clause is an argument of the complementive and the copular is only needed to express morphologically the tense (present) and agreement features (third person singular).

(230) a. Jan is [$_{\text{SC}}$ t_i ziek].
Jan is ill
b. Marie is [$_{\text{SC}}$ t_i docent].
Marie is teacher

Judgments on pronominalization in absentive constructions furthermore tend to vary from speaker to speaker and from construction to construction. Consider the examples in (231a). Examples such as (231a) are given as grammatical in Haslinger (2007), and some of our informants indeed accept them but others consider them marked. Examples such as (231b) are not discussed by Haslinger, but again accepted by some of our informants but considered unacceptable by others.

(231) a. $^{\%}$Jan is zwemmen en Marie is het/dat ook.
Jan is swim and Marie is it /that too
'Jan is off swimming and Marie too.'
b. $^{\%}$Jan is een boek kopen en Marie is het/dat ook.
Jan is a book buy and Marie is that too
'Jan is off buying a book and Marie too.'

The variability in judgments makes it very hard to draw any clear conclusions with respect to the question as to whether or not pronominalization is possible. It may be the case that speakers who reject pronominalization as marginal or unacceptable simply favor omission of the entire clause, as in the fully acceptable and completely natural examples in (232). Speakers who accept pronominalization in (231), on the other hand, may interpret the second conjunct as some kind of copular construction, that is, with the pronoun functioning as a complementive.

(232) a. Jan is zwemmen en Marie ook.
Jan is swim and Marie too
'Jan is off swimming and Marie too.'
b. Jan is een boek kopen en Marie ook.
Jan is a book buy and Marie too
'Jan is off buying a book and Marie too.'

The main finding of this subsection is that the pronominalization test cannot be used in complementive constructions in order to determine the °adicity of the verb, because pronominalization of complementives is possible as well. In addition, the judgments on pronominalization of the phrase headed by the bare infinitival are somewhat unclear.

IV. Is the bare infinitive nominal or verbal in nature?

The discussion in Subsection III made it clear that there is no clear evidence in favor of the claim that *zijn* in the absentive construction is an *n*-place predicate, that is, an argument taking verb. This seems to leave open two syntactic analyses: the verb *zijn* functions as a regular copular verb and is thus combined with a nominal small-clause complement, as in (233a), or *zijn* functions as a non-main verb that is combined with the projection of an infinitival main verb, as in (233b).

(233) a. Jan is [$_{SC}$ t_i [$_{NP}$ een boek kopen]]. [copular construction analysis]
Jan is a book buy
'Jan is off buying a book.'
b. Jan is [$_{VP}$ t_i [een boek kopen]]. [non-main verb analysis]
Jan is a book buy
'Jan is off buying a book.'

Semantic considerations seem to favor the analysis in (233b), given that BARE-INF nominalizations like *een boek kopen* 'buying a book' normally do not denote properties that can be attributed to the referent of the subject of a copular construction (although Haslinger, 2007:41, explicitly claims that phrases like *een boek kopen* do denote properties in absentive constructions), but this subsection will show that the syntactic tests for establishing the categorial status of the infinitive do not provide straightforward results: some support the copular construction analysis in (233a), whereas others support the non-main verb analysis in (233b).

The two analyses in (233) make different predictions when it comes to word order. If we are dealing with a copular construction, the presumed BARE-INF nominalization functions as a complementive and is therefore expected to precede the copular in clause-final position; if we are dealing with a construction in which *zijn* functions as a non-main verb, the bare infinitive must be a main verb and is therefore expected to be able to follow *zijn* in clause-final position. Haslinger (2007:ch.2) claims that the infinitive must precede the verb *zijn* and thus that the copular construction analysis is the correct one.

(234) a. dat Jan <vissen> is <$^{\%}$vissen>.
that Jan fish is
'that Jan is off fishing.'
b. dat Jan <een boek kopen> is <*een boek kopen>.
that Jan a book buy is
'that Jan is off buying a book.'

It is indeed the case that many of our informants prefer the order *vissen is* in (234a), but the alternative order *is vissen* is also accepted by at least some of these informants, for which reason we marked this order by means of a percentage sign; we also found the order *zijn*–infinitive on the internet for, e.g., the intransitive verbs *fietsen* 'to cycle', *logeren* 'to stay', *sporten* 'to do sport', *wandelen* 'to walk', *werken* 'to work', and *winkelen* 'to shop'. Haslinger notes the same thing in footnote 48 on page 63 but nevertheless claims the order *zijn*—infinitive to be ungrammatical, because speakers that accept this order in examples such as (234a) reject it when the infinitival phrase is more extensive, as illustrated in (234b). She fails to note, however, that the relevant order much improves if the infinitive and its object are separated by the verb *zijn*, as shown in (235a). Examples (235b&c) illustrate the same thing by means of examples that were taken from the internet:

our Google search (1/7/2013) on the strings [*boodschappen is doen*] and [*de hond is uitlaten*] resulted in, respectively, 56 and 31 hits, most of which instantiate the absentive construction.

(235) a. dat Jan een boek <kopen> is <%kopen>.
that Jan a book buy is
'that Jan is off buying a book.'
b. dat hij boodschappen is doen.
that he purchases is do
'that he's off doing his shopping.'
c. dat hij de hond is uitlaten.
that he the dog is out-let
'that he's off walking the dog.'

Note that embedded absentive constructions do not occur very frequently and are often difficult to find because of the intervention of other construction types (such as infinitival nominalizations in subject position followed by a finite verb in second position, e.g. *De hond uitlaten is leuk* 'Walking the dog is fun'), which makes it hard to compare the relative frequencies of the two word orders. We are therefore not able at this moment to say what the relative frequency of the object–*zijn*–infinitive and the object-infinitive-*zijn* order is.

Even if we interpret the fact that many speakers prefer the order infinitive–*zijn* in examples such as (234) as evidence in favor of the copular construction analysis, we cannot straightforwardly adopt it given that it wrongly predicts that the infinitive would also have to precede the clause-final °verb clusters in the corresponding perfect-tense constructions, as in (236).

(236) a. ??dat Jan vissen is geweest.
that Jan fish is been
b. *?dat Jan een boek kopen is geweest.
that Jan a book buy is been

Examples such as (236) are dubious, the normal perfect-tense forms being the ones given in (237); whereas the string [*is wezen vissen*] is very frequent, we found only one case on the internet with the string [*vissen is geweest*] that allowed an interpretation as an absentive construction; all other cases involved the progressive forms like *dat Jan aan het vissen is geweest* 'that Jan has been fishing' or forms with the particle *uit* like *dat Jan uit vissen is geweest*, which will be discussed in the next subsection. The fact that the bare infinitives in (237) follow the other verbs in clause-final position strongly militates against analyzing them as nominal complementives. Haeseryn et al. (1997:1033) provide similar judgments and add that examples such as (237) are typically found in the western part of the Netherlands.

(237) a. dat Jan is wezen vissen.
that Jan is be fish
'that Jan has been off fishing.'
b. dat Jan een boek is wezen kopen.
that Jan a book is be buy
'that Jan has been off buying a book.'

The contrast in acceptability between (236) and (237) thus favors the non-main verb analysis of the absentive construction. This analysis is also supported by the fact that these examples exhibit the °IPP-effect: *wezen* has the form of an infinitive and cannot be replaced by the participle form *geweest* ‘been’.

A potential problem for the non-main verb analysis is Haslinger’s claim that that the sequence *wezen* + infinitive in (237) may also precede the verb *zijn*, as shown in (238). This may open the possibility again to analyze the italicized parts as BARE-INF nominalizations with the function of complementive.

(238) a. dat Jan *wezen vissen* is.
that Jan be fish is
‘that Jan has been off fishing.’
b. dat Jan *een boek wezen kopen* is.
that Jan a book be buy is
‘that Jan has been off buying a book.’

However, a Google search (9/26/2012) revealed that the constructions in (238) actually do not occur; the (a)-examples in (239) show that whereas the order *is wezen vissen* in (237a) occurs more than 100 times, the order *wezen vissen is* was not found (none of the hits for this search string instantiated the relevant word order). The (b)-examples show that we found similar results for the transitive string *boodschappen is wezen doen*. This shows that the orders in (238) are not the ones normally found in Standard Dutch.

(239) a. Clause-final *is wezen vissen* [> 100]
a′. Clause-final *wezen vissen is* [0]
b. Clause-final *boodschappen is wezen doen* [26]
b′. Clause-final *boodschappen wezen doen is* [0]

The discussion above strongly suggests that in constructions with more than two verbs the infinitive must always be final in the clause-final verb cluster, and thus be separated from its objects (if present). This again militates against the copular construction analysis: on this analysis the infinitive heads a BARE-INF nominalization, and such nominalizations normally are impermeable by external elements, like the verb *zijn*. Furthermore, example (240b) shows that BARE-INF nominalizations are normally °islands for extraction.

(240) a. Jan verafschuwt [$_{DP}$ boeken kopen].
Jan loathes books buy
‘Jan loathes buying books.’
b. *Wat$_i$ verafschuwt Jan [$_{DP}$ *t*$_i$ kopen]?
what loathes Jan buy

Haslinger claims, however, that the object of a transitive verb can be *wh*-moved; her examples are given in (241). If correct (some speakers feel uncomfortable with examples of this type, for which reason we added a percentage sign to the (241b)), this would again show that the copular construction analysis is incorrect.

(241) a. De poes is [muizen vangen].
the cat is mice catch
‘The cat is off catching mice.’
b. $^{\%}$Wat$_{i}$ is de poes [*t*$_{i}$ vangen]?
what is the cat catch

The discussion above has shown that the copular construction analysis can be supported by the fact that many speakers prefer the order infinitive–*zijn* in imperfect-tense examples such as (234). The analysis runs into several problems, however, in perfect-tense constructions: the copular construction analysis predicts that the bare infinitive should precede *zijn*, but the reversed order seems to be the one that is actually preferred. Finally, the copular construction analysis implies that the infinitive functions as the °head of a BARE-INF nominalization and thus wrongly predicts that the infinitive cannot be split from its dependents. Given that the non-main verb analysis does not prohibit the infinitive–*zijn* order in (234) and is fully consistent with the other facts discussed in this subsection, it should be given more credit than it has received so far, although it still remains to be seen whether it will be tenable in the long run.

V. Vissen zijn *versus* uit vissen zijn

This subsection concludes our discussion by briefly comparing absentive constructions such as *Jan is vissen* ‘Jan is off fishing’ with constructions such as (242a), in which the absentive meaning is overtly expressed by means of the particle *uit* ‘out’. We start by showing that the *uit vissen zijn* construction is a more special form of the run-of-the-mill copular construction in (242b). The discussion will be relatively brief since we will see that the *uit vissen zijn* construction is very similar to the *uit vissen gaan* construction discussed in Section 6.4.1, sub VI.

(242) a. Jan is een dagje uit vissen
Jan is a day$_{\text{diminutive}}$ out fish
‘Jan is out fishing for the day.’
b. Jan is een dagje uit.
Jan is a day$_{\text{diminutive.}}$ out
‘Jan is out for the day (i.e. involved in some outdoor recreative activity).’

The claim that the sequence *uit vissen* in (242a) performs the same function as the particle *uit* in (242b) implies that it behaves as a constituent. That this is indeed the case is clear from the fact illustrated in (243a) that it may occur in sentence-initial position. Example (243b) further shows that the sequence cannot be interrupted by the verb in clause-final position; this also supports our proposal by showing that the infinitive cannot be construed as part of the verbal complex. Moreover, the word order of the phrase *uit vissen* is fixed: the infinitive *vissen*, cannot precede the particle *uit* or be separated from it by means of *wh*-movement: cf. **Jan is vissen uit* and **Wat is Jan uit?* ‘*What is Jan out?’; see also Haeseryn et al. (1997:1054).

(243) a. Uit vissen is hij nog niet geweest.
out fish is he not yet been
'He hasn't been out fishing yet.'
b. *dat Jan uit is vissen.
that Jan out is fish

For these reasons, we will analyze the constituent *uit* + infinitive as proposed in Section 6.4.1, sub VI, according to which the bare infinitive functions as a modifier of the adposition *uit*. This may also account for the fact that infinitives in the *uit vissen zijn* construction normally refer to recreational activities. A number of typical examples are given in (244), although there are also cases like *uit werken zijn* 'to be out working' and somewhat obsolete expressions like *uit wassen zijn* 'to be out washing', both having to do with performing domestic duties at other people's homes.

(244) a. uit eten zijn 'to be out lunching/dining'
b. uit jagen zijn 'to be out hunting'
c. uit dansen zijn 'to be out dancing'
d. uit winkelen zijn 'to be out shopping'

As for the *uit vissen gaan* construction, the claim that the phrase *uit vissen* syntactically behaves as a complementive can be supported by the fact illustrated by the primed examples in (245) that it must always precede the verbs in clause-final position and does not trigger the IPP-effect; the absentive constructions in the primeless examples were discussed in the previous subsections and added here for comparison.

(245) a. dat Jan <vissen> is <$^{\%}$vissen>.
that Jan fish is
'that Jan is off fishing.'
a′. dat Jan uit <vissen> is <*vissen>
that Jan out fish is
'that Jan is out fishing.'
b. dat Jan is wezen/*geweest vissen.
that Jan is be/been fish
'that Jan has been off fishing.'
b′. dat Jan uit vissen is geweest/*wezen
that Jan out fish is been/be
'that Jan has gone out fishing.'

The contrasts between the primeless and primed examples in (245) are important because they highlight the fact that the absentive does not exhibit the behavior that we might expect from a complementive construction, and thus enforce the conclusion from the previous subsection that the absentive construction is not a copular construction.

For completeness' sake, we want to conclude the discussion by noting that the bare infinitive is mostly not accompanied by an object or a modifier. Haeseryn et al. (1997:1054) provide example (246a) as a possible exception, but we have added a number sign to this example because the status of this example is unclear to us. Our informants consider this example marked and only tend to accept this string under the irrelevant reading, in which *vlinders vangen* functions as an afterthought. That (246a) is unacceptable under the intended reading seems to be supported by the fact that its embedded counterpart in (246b) is considered degraded by at least some speakers due to the fact that the placement of *vlinders vangen* in front of the verbs in clause-final position precludes the afterthought reading of *vlinders vangen*.

(246) a. #Meneer Prikkebeen is uit vlinders vangen.
mister Prikkebeen is out butterflies catch
'Mister Prikkebeen is out catching butterflies.'
b. %dat meneer Prikkebeen uit vlinders vangen is.
that mister Prikkebeen out butterflies catch is

6.4.3. *The non-main verb* doen *'to do'*

This section discusses the non-main verb *doen* 'to do'. This auxiliary and its cognates in other languages may occur in various syntactic contexts and have a wide variety of functions. Since the use of *doen* in Dutch is much more restricted than that of its cognates in English and specific Dutch/German dialects, it seems useful to set the stage by first focusing on these differences. We will discuss the Standard Dutch use of *doen* after that.

I. Standard Dutch doen *differs from its cognates in English and the Dutch dialects*

In many languages, verbs of the type of English *to do* seem to function as a "least marked" verbal element that may be inserted as a "last resort" to avoid ungrammaticality; see Grimshaw (2012). For instance, the examples in (247) show that English *do* surfaces as the finite verb in various types of constructions that would be unacceptable without it, such as negative clauses and clauses that require subject-auxiliary inversion if an auxiliary is present; see Huddleston and Pullum (2002:92ff.) for more detailed discussion.

(247) a. He did not want to come. [negative clauses]
a′. *He <wanted> not <wanted> to come.
b. What did he say? [*wh*-question]
b′. *What <said> he <said>?

The examples in (248) show that Dutch is different in that it does not need and, in fact, cannot have the auxiliary *doen* in such contexts. This difference between English and Dutch is probably related to the fact that whereas Dutch main verbs normally raise to the functional projections T and C (see Section 9.2 for these notions), English main verbs evidently do not do this.

(248) a. Hij wou niet komen. a′. *Hij deed niet willen komen.
he wanted not come he did not want come
b. Wat zei hij? b′. *Wat deed hij zeggen?
what said he What did he say

We will not discuss the reasons why English main verbs cannot move to T or C but refer the reader to the extensive literature on verb movement in English (e.g., Emonds 1976, Pollock 1989, Chomsky 1991), the Germanic languages (e.g., the studies collected in Haider & Prinzhorn (1985) and beyond (e.g., the studies collected in Lightfoot & Hornstein 1994); see also Broekhuis (2008: Section 4.1), for an attempt to provide a formal account of the available cross-linguistic variation.

Example (249a) shows that the English non-main verb *to do* can also be used to express emphasis when it is accented; see Huddleston and Pullum (2002:97ff.) for more detailed discussion. The (b)-examples in (249) show that the Dutch verb *doen* cannot be used in this way; instead, contrastive accent is assigned to, e.g., some modal particle.

(249) a. He DID go to the movies after all.
b. *Hij DEED uiteindelijk naar de film gaan.
he did in.the.end to the movies go
b′. Hij ging uiteindelijk TOCH naar de film.
he went in.the.end PRT to the movies

Finally, it can be observed that Dutch *doen* differs from English *to do* in that it cannot be used as a pro-verb. So whereas the verb *to do* in (250a) has the same semantic function as the italicized verb phrase in the first conjunct, the verb *deed* in (250b) does not; the construction is only grammatical if an explicit deictic pronoun like *dat* ‘that’ is present; we will return to examples such as (250b) in Subsection III, where it is argued that it would be a mistake to analyze the verb *doen* as a non-main verb there.

(250) a. Mary *made many mistakes,* and John did too.
b. Marie *maakte veel fouten* en Jan deed *(dat) ook.
Marie made many mistakes and Jan did that too

Standard Dutch *doen* differs not only from English *to do* but also from its cognates in many Dutch and German dialects, where this type of main verb is often used periphrastically to express the tense features; so besides simple-tense forms like *Hij werkt*, such dialects also allow forms like *Hij doet werken* (lit.: He does work). There is a debate on whether the use of *doen* adds additional (aspectual or modal) meaning aspects, but since the periphrastic construction does not occur in Standard Dutch, we will not go into this issue here; see Cornips (1994/1998), and Erb (2001:ch.5) for discussion and a review of the literature.

II. Dutch doen *as a “last resort” verb*

The differences between Dutch *doen* and English *to do* discussed in Subsection I do not alter the fact that they have one important property in common, namely that they are used as last resorts: they can be inserted only when this is needed to save the construction from ungrammaticality. In order to see this, let us consider now when *doen*-support is possible in Dutch. The following subsections will discuss three cases that potentially qualify for such an analysis: °VP-topicalization, °left dislocation and VP-pronominalization. We will see in Subsection III, however, that these three cases cannot be treated on a par.

A. VP-topicalization

Doen-support is common in cases of VP-topicalization, that is, cases in which a verbal projection is topicalized. A typical example is given in (251). One possible account for the insertion of *doen* is appealing to the °verb-second restriction on main clauses—because the main verb is part of the fronted VP, there is no verb available to satisfy this constraint, and the verb *doen* must therefore be inserted in order to save the resulting structure from ungrammaticality. Another possibility is saying that VP-topicalization makes it impossible to express the tense features of the clause on the main verb, and that *doen* must be inserted to make expression of these features possible. We prefer the latter option given that it correctly predicts that *do*-support is not restricted to main clauses but can also be found in embedded clauses; note that we will show shortly that the markedness of example (251b) is not due to the presence of *doen* but to VP-topicalization across the boundary of the embedded clause.

(251) a. [Haar verraden] doet hij niet.
her betray does he not
'He doesn't betray her.'
b. $^?$[Haar verraden] denk ik niet dat hij doet.
her betray think I not that he does
'I don't think he'll betray her.'

That we are dealing with "last resort" insertion can be supported in several ways. First, the examples in (252) show that VP-topicalization is an absolute prerequisite for *doen*-support; if the verb phrase is in clause-final position, *doen*-support is impossible both in main and in embedded clauses. For completeness' sake, note that pronouns normally precede negation, but that scrambling of the pronoun *haar* into a more leftward position does not improve the result in (252a) and that (252b) is unacceptable irrespective of the word order of the clause-final °verb cluster in the embedded clause.

(252) a. *Hij doet <haar> niet <haar> verraden.
he does her not betray
b. *Ik denk niet dat hij haar <verraden> doet <verraden>.
I think not that he her betray does

Second, the examples in (253) show that insertion of *doen* is only possible if there is no other verb that is able to satisfy the verb-second requirement and/or to express tense. Since the modal verb can perform these functions, insertion of *doen* is not needed and therefore excluded by the last resort nature of *doen*-support.

(253) a. *[Haar verraden] doet hij niet kunnen.
her betray does he not be.able
a′. [Haar verraden] kan hij niet.
her betray is.able he not
'He can't betray her.'

b. *[Haar verraden] denk ik niet dat hij doet kunnen.
her betray think I not that he does be.able
b′. $^{?}$[Haar verraden] denk ik niet dat hij kan.
her betray think I not that he is.able
‘I don’t think he can betray her.’

The markedness of (253b) shows that the markedness of (251b) is not due to the fact that *doen* is part of an embedded clause, but that VP-topicalization from an embedded clause gives rise to a somewhat marked result.

B. Left dislocation

Doen-support seems also possible in cases of °left dislocation in examples such as (254). It is a matter of debate whether or not the VP-topicalization constructions in (251) are derived from these left-dislocation constructions by deletion of the deictic pronoun *dat* in sentence-initial position. If so, the constructions in (254) may receive a similar analysis as the examples in (251).

(254) a. [Haar verraden], dat doet hij niet.
her betray that does he not
‘Betray her, that he won’t do.’
b. $^{?}$[Haar verraden], dat denk ik niet dat hij doet.
her betray that think I not that he does
‘Betray her, that I don’t think he will do.’

That we are dealing with “last resort” insertion of *doen* seems clear from the fact that it is impossible if some other verb is present that is able to satisfy the verb-second requirement and/or to express tense.

(255) a. *[Haar verraden], dat doet hij niet kunnen.
her betray that does he not be.able
a′. [Haar verraden], dat kan hij niet.
her betray that be.able he not
b. *[Haar verraden], dat denk ik niet dat hij doet kunnen.
her betray that think I not that he does be.able
b. $^{?}$[Haar verraden] dat denk ik niet dat hij kan.
her betray that think I not that he is.able

C. VP-pronominalization

Example (256a) shows that Dutch VP-topicalization involves the pronoun *dat* ‘that’ or *wat* ‘what’. The obligatory insertion of *doen* ‘to do’ in this example can perhaps be accounted for in the same way as in the case of topicalization and left dislocation of the verb phrase: since VP-pronominalization removes the main verb, some other verb is needed to satisfy the verb-second requirement and/or to express tense. The “last resort” nature of *doen*-support is, however, less clear given that *doen* is also possible if there is some other verb that can perform these functions (although some speakers may consider expression of *doen* as the less preferred option).

(256) a. Jan verraadde Marie en Peter deed dat ook.
Jan betrayed Marie and Peter did that too
‘Jan betrayed Marie and Peter did too.’
b. Jan verraadde Marie en Peter wilde dat ook (doen).
Jan betrayed Marie and Peter wanted that too do
‘Jan betrayed Marie and Peter wanted to do that too.’

III. Is doen *a uniform category?*

Subsection II discussed three construction types that potentially qualify for a *doen*-support analysis. We have seen, however, that these constructions differ with respect to what we may call the finiteness restriction: whereas *doen* must be finite in VP-topicalization and left-dislocation constructions, it can be non-finite in VP-pronominalization constructions. This raises the question as to whether the three cases can indeed be treated on a par; in order to answer this question the following subsections discuss some other properties of these constructions with *doen*.

A. VP split

The first two examples in (257) show that the object of the main verb *haar* ‘her’ need not be pied-piped by a topicalized/left-dislocated VP, but can also be stranded. VP-pronominalization, on the other hand, can never exclude the direct object; example (257c) is unacceptable if we add the direct object *haar* to the second conjunct; see Section 2.3.1, sub VII, for similar data with prepositional objects.

(257) a. Verraden doet hij haar niet.
betray does he her not
‘He doesn’t betray her.’
b. Verraden, dat doet hij haar niet.
betray that does he her not
‘He doesn’t betray her.’
c. Jan verraadde Marie en Peter deed dat (*haar) ook.
Jan betrayed Marie and Peter did that too
‘Jan betrayed Marie and Peter did too.’

This suggests that pronominalization differs in a crucial way from left dislocation and topicalization. It is important to note that the difference is not located in the verb *doen*, given that the acceptability judgments on (257) do not change when we substitute the modal verb *willen* for *doen*.

(258) a. Verraden wil hij haar niet.
betray wants he her not
‘He doesn’t want to betray her.’
b. Verraden, dat wil hij haar niet.
betray that wants he her not
‘He doesn’t want to betray her.’
c. Jan verraadde Marie en Peter wil dat (*haar) ook.
Jan betrayed Marie and Peter wants that too
‘Jan betrayed Marie and Peter wants that too.’

The fact that the object *haar* ‘her’ cannot be expressed in (257c) suggests that *doen* ‘to do’ can be analyzed as a regular transitive main verb in examples such as *Jan doet het graag* ‘Jan is doing it with pleasure’. The verb *doen* in (257b), on the other hand, cannot be analyzed as a main verb given that main verb *doen* is not a ditransitive verb: cf. **Jan doet het haar graag* (lit: *Jan is doing her it with pleasure). For completeness’ sake, observe that the contrast between (b)- and (c)-examples in (257) and (258) also shows that the two occurrences of *dat* have different functions: in the (c)-examples it clearly functions as a demonstrative pronoun with the function of direct object, whereas in the (b)-examples it does not.

B. Restrictions on the verb

The previous subsection suggested that *doen* is only used as a non-main verb in VP-topicalization and left-dislocation constructions; in VP-pronominalization contexts it is simply a main verb. This suggestion can be further supported by considering the restrictions on VP-pronominalization in the contexts of main verb *doen*. First, consider the examples in (259), which show that *doen* typically expresses an activity controlled by the subject of the clause; whereas its object pronoun *dat* can readily refer to activities like *reading a book* with an agentive subject, it is impossible for it to refer to non-controlled events like *getting something* or *knowing something* with a goal/experiencer subject. The fact that all examples are fully acceptable if the verb *doen* is omitted shows that it is not pronominalization as such that causes this deviance, but the use of *doen*.

(259) a. Jan wou dat boek lezen en Marie wilde dat ook (doen).
Jan wanted that book read and Marie wanted that also do
‘Jan wanted to read that book and Marie wanted to do that too.’
b. Peter zou dat boek krijgen en Els zou dat ook (*doen).
Peter would that book get and Els would that also do
‘Peter would get that book and Els would too.’
c. Jan wou het antwoord weten en Marie wou dat ook (*doen).
Jan wanted the answer know and Marie wanted that also do
‘Jan wanted to know the answer and Marie wanted that too.’

The VP-pronominalization construction in (259) contrasts sharply in this respect with the VP-topicalization and left-dislocation constructions in (260), which allow *doen* both with controllable activities and uncontrollable states. This holds both for cases in which the direct object of the proposed verb is pied-piped and for cases in which it is stranded.

(260) a. Dat boek lezen (dat) doet Marie graag.
that book read that does Marie gladly
‘Marie does like to read that book.’
a′. Lezen (dat) doet Marie dat boek graag.
read that does Marie that book gladly
b. Het boek krijgen (dat) doen we niet.
the book get that do we not
‘We will not get the book.’
b′. Krijgen (dat) doen we het boek niet.
get that do we the book not

c. Het antwoord zeker weten (dat) doet Els niet.
the answer certainly know that does Els not
‘Els does not know the answer for sure.’
c′. Zeker weten (dat) doet Els het antwoord niet.
certain know that does Els the answer not

C. A note on VP-topicalization

This previous subsections have shown that there are two additional facts supporting the claim that while VP-topicalization and left dislocation may involve non-main verb *doen*, VP-pronominalization always involves main verb *doen*. What we did not discuss is whether VP-topicalization must involve non-main verb *doen*. After all, it might well be the case that the presumed preposed VPs in the primeless examples in (260) are in fact nominalizations comparable to those in (261).

(261) a. [$_{NP}$ Dat boek lezen] (dat) is leuk.
that book read that is nice
‘Reading that book is nice.’
b. [$_{NP}$ Het boek krijgen] (dat) is leuk.
the book get that is nice
‘Getting the book is nice.’
c. [$_{NP}$ Het antwoord zeker weten] (dat) is belangrijk.
the answer certain know that is important
‘Knowing the answer for sure is important.’

It does not seem easy to find a conclusive answer to the question as to whether the preposed phrases in the primeless examples in (260) can also be nominalizations, but the fact that the examples in (262), in which the presumed nominalizations are clause-internal, are unacceptable seems to make this a very unlikely analysis.

(262) a. *Marie doet [$_{NP}$ dat boek lezen] graag.
Marie does that books read gladly
b. *We doen [$_{NP}$ het boek krijgen] niet.
we do the book get not
c. *Els doet [$_{NP}$ het antwoord zeker weten] niet.
Els does the answer certain know not

That the primed examples in (260) do not involve nominalizations seems uncontroversial since nominalizations behave as a unit under movement and are therefore normally not split by topicalization.

(263) a. Marie vindt boeken lezen leuk.
Marie considers books read nice
‘Marie considers reading books nice.’
b. *Lezen vindt Marie boeken leuk.
read considers Marie books nice

Chapter 7 Projection of verb phrases IIId: Verb clusters

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Introduction

This chapter is devoted specifically to the formation and the syntactic behavior of verb clusters. Verb clustering may occur in cases in which a main or a non-main verb takes a non-finite verbal projection as its °complement, that is, a phrase headed by a past/passive participle (from now on: participle phrase), a *te*-infinitive (*te*-infinitival), or a bare infinitive (bare infinitival). Some issues in this chapter are discussed in greater detail in the course of Section 5.2 and Chapter 6, but since verb clustering is one of the main issues in the scientific discussion of Dutch (and German) syntax, we assume that readers will welcome a more concise discussion that is more specifically focused on this topic.

Some descriptions of verb clustering take it more or les for granted that any string of verbs in clause-final position can be analyzed as a verb cluster—verb clusters are taken to arise whenever participles, *te*-infinitives, bare infinitives, and (in embedded clauses) the finite verb occur adjacent in clause-final position. Section 7.1 will show, however, that this is not sufficient and that at least the following two facts should be taken into consideration. First, Section 5.2.2.3 has shown that the grouping of verbs in clause-final position does not only arise as the result of verb clustering in the technical sense of the word, but can also be the result of a process that we referred to as remnant extraposition. Second, Section 6.3.2 has shown that participles and (*te*-)infinitives sometimes exhibit non-verbal (that is, nominal, adjectival, or adpositional) behavior. The exclusion of such cases simplifies the discussion of verb clustering enormously, and it will enable us to describe the syntactic behavior (more specifically, the linearization) of verb clusters by means of a small number of very simple generalizations.

After having discussed the ways in which we can recognize verb clusters, we will consider the order of the verbs in such clusters. Two different conceptions of order should be distinguished. Section 7.2 discusses the term hierarchical order, which is basically derived from the selectional properties of the verbs in the cluster: for instance, a perfect auxiliary selects a participial phrase and is therefore °superior to (that is, in a structurally higher position than) the participle in the participle phrase: ... *Aux* [$_{PartP}$ ... *Part* ...] .... Section 7.3 discusses the term linear order. In this context, it is crucial to note that languages like Dutch differ markedly from languages like English in that the hierarchical order of verbs cannot be read off their linear order. Whereas in English the superior verb must precede the structurally more embedded verbs, verb clustering in languages in Dutch may have the effect of disrupting this one-to-one correlation between hierarchical and linear order. This is illustrated in the (b)-examples in (1), which show that the participle *gezien* 'seen' may occupy various positions in the verb cluster.

(1) a. that John [must [have [seen that film]]].
b. dat Jan die film *moet hebben gezien*.
b′. dat Jan die film *moet gezien hebben*.
b″. dat Jan die film *gezien moet hebben*.

7.1. Recognizing verb clusters

Discussions of °verb clustering sometimes suffer from the fact that they take it for granted that clause splitting, that is, splitting of the embedded verbal projection by the °matrix verb as a result of which the verbs group together in clause-final position, as in (2), is sufficient to conclude that we are dealing with verb clustering. Section 5.2.2.3 has shown, however, that such groupings may not only arise as a result of verb clustering but also as a result of a process that we referred to as remnant extraposition; Section 7.1.1 briefly summarizes these findings in order to clarify the diagnostics we will use to distinguish verb clustering from other cases of clause splitting.

(2) dat Jan *dat boek* beweert *te lezen*.
that Jan that book claims to read
'that Jan is claiming to read that book.'

Another factor complicating the discussion of verb clustering is that non-finite verb forms may undergo °conversion to other categories. Section 6.2.3 has shown that in certain constructions past/passive participles and *te*-infinitives exhibit adjectival rather than verbal behavior, and Section 5.2.3 has shown that bare infinitives do not only appear as verbs but may also appear as nominalizations. Not taking these facts into account obscures the regularities underlying the linear word orders we find in verb clusters, and for this reason Section 7.1.2 will briefly discuss the means to exclude these apparent verbs from the discussion.

7.1.1. Clause splitting: verb clustering vs. (remnant) extraposition

Chapter 5 and Chapter 6 have discussed cases in which, respectively, a main and a non-main verb take a clause or a smaller verbal projection as their complement. We have seen that finite clauses introduced by the finite complementizer *dat* 'that' or *of* 'whether' and infinitival complement clauses introduced by the complementizer-like element *om* are normally in extraposed position, that is, placed after the °matrix verb in clause-final position. This is illustrated in the examples in (3), in which the matrix verb is underlined and the complement clause is in square brackets with the categorial label CP (= complementizer phrase). Since CPs do not allow splitting, we can put such cases aside for our present purpose.

(3) a. dat Jan verwacht [$_{CP}$ dat Peter zal komen].
that Jan expects that Peter will come
'that Jan expects that Peter will come.'
b. dat Jan betwijfelt [$_{CP}$ of Peter zal komen].
that Jan doubts whether Peter will come
'that Jan doubts whether Peter will come.'
c. dat Jan popelt [$_{CP}$ (om) PRO te komen].
that Jan is.eager COMP to come
'that Jan is eager to come.'

Infinitival clauses without the complementizer-like element *om* are sometimes also in extraposed position, but sometimes also allow or even require clause splitting, which is what we typically find if the complement clause is a bare infinitival clause. This is illustrated in the examples in (4) in which the dependent bare infinitival is in italics; in (4a) the matrix verb is a main verb, whereas in (4b) it is the aspectual non-main verb *gaan* ‘to go’. We underlined the verbs in order to push to the fore that clause splitting results in clustering of the verbs in clause-final position.

(4) a. dat ik *een liedje* hoorde *zingen*.
that I a song heard sing
‘that I heard singing a song.’
b. dat Jan *een boek* gaat *lezen*.
that Jan a book goes read
‘that Jan is going to read a book.’

The examples in (5) show that in the northern varieties of Dutch, verb clusters are normally impermeable. This is clear from the fact that the objects of the bare infinitives cannot follow the clause-final matrix verbs; see Section 7.4 for a discussion of a number of exceptional cases. The percentage signs indicate, however, that permeation of the cluster is possible in some southern varieties of Dutch, especially in West-Flanders; cf. Sections 5.2.3 and 6.2, and Barbiers (2008:ch.2). For ease of exposition, we will follow the northern intuitions in the discussions below and simply mark permeated verb clusters as unacceptable.

(5) a. %dat ik hoorde *een liedje* *zingen*.
that I heard a song sing
b. %dat Jan gaat *een boek* *lezen*.
that Jan goes a book read

Constructions such as (4) are not only special in requiring verb clustering, but also because they exhibit a special behavior in the perfect tense; while verbs governed by a perfect auxiliary normally appear as past participles, the non-finite verbs in (4) appear as infinitives if governed by a perfect auxiliary. This so-called *infinitivus-pro-participio* (IPP) effect is illustrated in (6).

(6) a. dat ik *een liedje* heb horen/*gehoord *zingen*.
that I a song have hear/heard sing
‘that I’ve heard singing a song.’
b. dat Jan *een boek* is gaan/*gegaan *lezen*.
that Jan a book is go/gone read
‘that Jan has started to read a book.’

Section 5.2.2.3 argues that verb clustering and the IPP-effect go hand in hand, and can in fact be used as diagnostic properties of structures exhibiting monoclausal behavior, that is, structures consisting of two separate clauses but behave as if we are dealing with one single clause; see Table 1.

Table 1: Structures exhibiting mono- and biclausal behavior

	MONOCLAUSAL	BICLAUSAL
VERB CLUSTERING	+	—
INFINITIVUS-PRO-PARTICIPIO	+	—

If so, the notions of clause splitting and verb clustering do not have the same extension: the extension of the latter is a subset of the extension of the former. That clause splitting need not involve verb clustering in the technical sense of the word can be shown by the examples in (7). Example (7a) first shows that *te*-infinitival complement clauses may also be split by the finite verb in clause-final position. This example differs from those in (4), however, in that the object of the infinitive may also follow the matrix verb in clause-final position, as is shown by (7b). Example (7a) also differs from those in (4) in that it does not exhibit the IPP-effect; in the perfect-tense example in (7c) the verb *beweren* 'to claim' surfaces in its participial form and cannot surface as an infinitive.

(7) a. dat Jan *dat boek* beweert *te lezen*.
that Jan that book claims to read
'that Jan is claiming to read that book.'
b. dat Jan beweert *dat boek* *te lezen*.
that Jan claims to read
'that Jan is claiming to read that book.'
c. dat Jan *dat boek* heeft beweerd/*beweren *te lezen*.
that Jan that book has claimed/claim to read
'that Jan has claimed to read that book.'

If verb clustering and the IPP-effect do go hand in hand, we have to conclude that (7a) does not involve verb clustering. Section 5.2.2.3 therefore analyzed (7a) as a case of remnant extraposition, that is, the infinitival clause is in extraposed position but its object is extracted from it by leftward movement across the finite verb; see Section 4.4.3, sub IV, for a more extensive introduction to this notion. The structure of this example is therefore as indicated in (8); see Reuland (1981), Den Besten & Rutten (1989), Rutten (1991), Broekhuis et al. (1995), and many others.

(8) dat Jan dat boek$_i$ beweert [t_i te lezen].
that Jan that book claims to read

Support for the analysis in (8) comes from the fact that if the embedded *te*-infinitive has two (or more) dependents, they may occur on different sides of the matrix verb *beweren*, although this option is generally considered marked, as compared to the two alternative orders.

(9) a. dat Jan beweert *Marie dat boek* *te geven*.
that Jan claims Marie that book to give
'that Jan is claiming to give Marie that book.'
b. $^{(?)}$dat Jan *Marie* beweert *dat boek te geven*.
c. dat Jan *Marie dat boek* beweert *te geven*.

Example (9b) can neither be derived by extraposition of the full *te*-infinitival nor by verb clustering, but it can be derived by what we have called remnant extraposition, that is, extraposition plus leftward movement of the indirect object *Marie*. If this analysis is viable, example (9c) can, of course, be analyzed in a similar way as (9b) by leftward movement of both the indirect and the direct object. The examples in (9) can thus be analyzed as in (10).

(10) a. dat Jan beweert [Marie dat boek te geven]. [extraposition]
b. dat Jan Marie$_i$ beweert [t_i dat boek te geven]. [remnant extraposition]
c. dat Jan Marie$_i$ dat boek$_j$ beweert [t_i t_j te geven]. [remnant extraposition]

Section 5.2.2.3 has also shown that some cases of splitting of *te*-infinitivals do involve verb clustering in the technical sense. Consider the primeless examples in (11), which at first sight suggest that *proberen* is just like *beweren*.

(11) a. dat Jan *dat boek* probeert *te lezen*.
that Jan that book tries to read
'that Jan is trying to read that book.'
b. dat Jan probeert *dat boek te lezen*.
that Jan tries that book to read
'that Jan is trying to read that book.'

However, when we consider the perfect-tense counterparts of these two examples in (12), we see that they exhibit different behavior with respect to the IPP-effect: whereas the verb *proberen* can appear either as a participle or as an infinitive in the split pattern, it must appear as a participle in the non-split pattern.

(12) a. dat Jan *dat boek* heeft geprobeerd/proberen *te lezen*.
that Jan that book has tried/try to read
'that Jan has been trying to read that book.'
b. dat Jan heeft geprobeerd/*proberen *dat boek te lezen*.
that Jan has tried/try that book to read
'that Jan has been trying to read that book.'

If verb clustering and the IPP-effect are two sides of the same coin, we should conclude that (11a) is actually ambiguous: it involves remnant extraposition if *proberen* surfaces as a participle in the corresponding perfect-tense construction in (12a), but verb clustering if it surfaces as an infinitive. This conclusion receives more support from a consideration of cases in which the infinitive has two or more dependents. The primeless examples in (13) show that the IPP-effect can only occur if *all* dependents precede the finite verb in clause-final position.

(13) a. dat Jan *Marie dat boek* heeft proberen *te geven*.
that Jan Marie that book has try to give
'that Jan has tried to give Marie that book.'
b. *dat Jan *Marie* heeft proberen *dat boek te geven*.
that Jan Marie has try that book to give
c. *dat Jan heeft proberen *Marie dat boek te geven*.
that Jan has try Marie that book to give

The examples in (14) show that all examples in (13) become acceptable if we replace the infinitive *proberen* by the participle *geprobeerd*, but then we are no longer dealing with verb clustering but with (remnant) extraposition. As in (9), placing the dependents of the infinitive on different sides of the matrix verb (here: *proberen*) is generally considered marked, as compared to the alternative orders.

(14) a. dat Jan *Marie dat boek* heeft geprobeerd *te geven.*
that Jan Marie that book has tried to give
b. $^{(?)}$dat Jan *Marie* heeft geprobeerd *dat boek* *te geven.*
that Jan Marie has tried that book to give
c. dat Jan heeft geprobeerd *Marie dat boek* *te geven.*
that Jan has tried Marie that book to give

The discussion above has revealed that there are two tests which we can apply in order to determine whether we are dealing with verb clustering or (remnant) extraposition: (i) only the former exhibits the IPP-effect, and (ii) only the latter allows permeation of the verbal sequence by the dependents of the embedded main verb (in the northern varieties of Dutch). Our discussion in Sections 7.2 and 7.3 will only consider cases that satisfy both tests.

*7.1.2. Conversion: Non-verbal uses of participles and (*te*-)infinitives*

For the description of verb clusters it is necessary to take into account that certain non-finite verb forms may undergo °conversion: past/passive participles and *te*-infinitives, for example, may be used as adjectives, and bare infinitives may be used as heads of nominal phrases. If such cases are wrongly analyzed as verbs, we will get a severely distorted picture of the behavior of verb clusters. The examples in (15), for instance, show that whereas verbal past participles can normally occupy any position in the clause-final verb cluster they belong to, their adjectival counterparts functioning as °complementives must precede the verb cluster. By not including adjectival participles like *geïrriteerd* in (15b), we eliminate the need for introducing complicated exception clauses in our generalization concerning word order in verb clusters.

(15) a. dat Jan het boek morgen <gelezen> zal <gelezen> hebben <gelezen>.
that Jan the book tomorrow read will have
'that Jan will have read the book tomorrow.'
b. dat Jan hierover <geïrriteerd> zal <*geïrriteerd> raken <*geïrriteerd>.
that Jan here-about annoyed will get
'that Jan will become annoyed about this.'

The examples in (16) show that something similar holds for *te*-infinitives; while verbal *te*-infinitives normally follow their governing verb, most speakers require that *te*-infinitives functioning as complementives precede the clause-final verb cluster; cf. A6.5.4. By not including adjectival *te*-infinitives like *te lezen* in (16b), we again eliminate the need to introduce complicated exception clauses in our generalization concerning word order in verb clusters.

(16) a. dat Jan dat boek <*te lezen> probeert <te lezen>.
that Jan that book to read tries
‘that Jan is trying to read that book.’
b. dat dit boek gemakkelijk <te lezen> is <$^{\%}$te lezen>
that this book easy to read is
‘that this book is easy to read.’

The examples in (17) show that in the case of bare infinitives we have to take into account that they can be nominalized: whereas verbal bare infinitives normally follow the other verbs in the verb cluster, BARE-INF nominalizations must precede the verb cluster. By not including nominalized bare infinitives like the first occurrence of *zwemmen* in (17b), we can simply say that bare infinitives must appear to the right of their governing verb in clusters containing three verbs.

(17) a. dat ik Jan <*zwemmen$_{\text{V}}$> wil zien <zwemmen$_{\text{V}}$>
that I Jan want see
‘that I want to see Jan swim.’
b. dat Jan <zwemmen$_{\text{N}}$> wil leren <zwemmen$_{\text{V}}$>
that Jan swim wants learn
‘that Jan wants to learn swimming/to swim.’

In short, if we do not sufficiently take the possibility of conversion into account, we will not be able to express the proper word order generalizations. For this reason the following subsections will discuss a number of cases that must be excluded from our discussion of verb clusters and formulate a number of preliminary word order generalizations that will be the point of departure for our discussion of word order in verb clusters in Section 7.3. The discussion will be relatively brief given that more detailed discussions can be found in Sections A9 and N1.3.1.2.

I. Past/passive participles

The examples in (18) show that past and passive participles can normally appear either before or after the perfect/passive auxiliary.

(18) a. dat Jan het boek nog niet <gebracht> heeft <gebracht>. [past]
that Jan the book not yet brought has
‘that Jan hasn’t brought the book yet.’
b. dat het boek morgen <gebracht> wordt <gebracht>. [passive]
that the book tomorrow brought is
‘that the book will be brought tomorrow.’

A complicating factor is that past/passive participles sometimes exhibit adjectival behavior as is clear from the fact that they may be used in prenominal attributive position, which is normally reserved for adjectives; this is shown for the participle *getrouwd* ‘married’ in the primeless examples in (19). That the participle is adjectival in nature in these examples is also clear from the fact that it exhibits adjectival inflection: in indefinite singular noun phrases headed by a neuter noun, it is inflected by the null affix -Ø, whereas it is inflected by *-e* in all other cases; see Section A1.2. The examples in (19) illustrate this for the neuter noun *stel* ‘couple’ only; we added examples with the adjective *aardig* ‘nice’ for comparison.

(19) a. een getrouwd-Ø stel a′. een aardig-Ø stel
a married couple a nice couple
b. het getrouwd-e stel b′. het aardig-e stel
the married couple the nice couple
c. (de) getrouwd-e stellen c′. (de) aardig-e stellen
the married couples the nice couples

The adjectival use of past/present participle is easy to detect in examples such as (19), in which it is used as a prenominal attributive modifier, but it is more difficult in other cases. Consider the examples in (20). Example (20a) has two interpretations, which can be brought to the fore by means of adverbial modification. Example (20b) shows that (20a) can have an activity reading, which can be enhanced by using a temporal adverbial phrase like *gisteren* 'yesterday' that refers to a relatively short time interval, and example (20c) shows that it also has a property reading which can be brought to the fore by means of adverbial phrases like *nog steeds* 'still'.

(20) a. dat het stel getrouwd is.
that the couple married is
b. dat het stel gisteren getrouwd is. [activity]
that the couple yesterday married is
'that the couple married yesterday.'
c. dat het stel nog steeds getrouwd is. [property]
that the couple yet still married is
'that the couple is still married.'

Section A9 accounted for these two readings of (20a) by assuming that this example is structurally ambiguous: on the activity reading we are dealing with a perfect-tense construction with the °verbal complex *is getrouwd* (that is, with a verbal participle), whereas on the property reading we are dealing with a copular construction with a complementive (that is, an adjectival participle). That this distinction is in the right direction is clear from example (21): since the prefix *on*- can only occur with adjectives, we correctly predict it to be blocked by the presence of an adverbial phrase like *gisteren* 'yesterday'.

(21) dat het stel nog steeds/*gisteren ongetrouwd is.
that the couple yet still/yesterday unmarried is
'that the couple is still unmarried.'

Furthermore, we correctly predict that the participle has the distribution of an adjectival complementive if an adverbial phrase like *nog steeds* 'still' is present: contrary to the past participle in (20b), the adjectival participle must occur left-adjacent to the verbs in clause-final position.

(22) a. dat het stel gisteren <getrouwd> is <getrouwd>. [activity]
that the couple yesterday married is
b. dat het stel nog steeds <getrouwd> is <$^{??}$getrouwd>. [property]
that the couple yet still married is

The claim that we are dealing with an adjectival participle in examples such as (22b) is important given that this enables us to put forward the word order generalization in (23) that past/passive participles may either precede of follow their auxiliary.

(23) **Generalization I**: Past/passive participles either precede or follow their governing auxiliary.

Observe that the case discussed in this subjection is just one instantiation of a larger set of constructions that may involve adjectival participles; we refer the reader to Sections 6.2.3 and 2.5.1.3, sub IID, for a discussion of more cases.

II. Te-*infinitives*

Te-infinitives normally follow their governing verb. This is illustrated in the examples in (24) for the modal verb *lijk*en and the semi-aspectual verb *zitten*.

(24) a. dat Jan dat boek <*te lezen > blijkt <te lezen>.
that Jan that book to read turns.out
‘that Jan turns out to be reading that book.’
b. dat Jan dat boek <*te lezen> zit <te lezen>.
that Jan that book to read sits
‘that Jan is reading that book.’

A complicating factor is that *te*-infinitives are like past/passive participles in that they sometimes exhibit adjectival behavior. Example (25a) clearly shows that they may be used in prenominal attributive position, which is normally reserved for adjectives. Example (25b) shows that these so-called modal infinitives are also used as °complementives: like run-of-the-mill adjectival complementives, they must precede the finite verb in clause-final position. For a detailed discussion of modal infinitives, we refer the reader to Section A9.

(25) a. de gemakkelijk te lezen boeken
the easy to read books
‘the books that are easy to read’
b. dat deze boeken gemakkelijk <te lezen> zijn <*te lezen>.
that these books easy to read are
‘that these books are easy to read.’

The claim that we are dealing with adjectival *te*-infinitives in examples such as (25) is important given that this enables us to put such cases aside as irrelevant for the description of verb clusters and to put forward the word order generalization in (26) that *te*-infinitives must follow their governing verb.

(26) **Generalization II**: *Te*-infinitives follow their governing verb.

The case of modal infinitives seems to be just one instantiation of a larger set of *te*-infinitives that can be used as complementives; another typical example is given in (27), which is again characterized by the fact that the *te*-infinitive exhibits the prototypical behavior of complementives that they occur left-adjacent to the verbs in clause-final position; we refer the reader to Section 6.2.3 for more examples of this sort and for more extensive discussion.

(27) dat de kat te weinig <te eten> heeft gekregen <*te eten>.
that the cat too little to eat has gotten
‘that the cat has had too little to eat.’

III. Bare infinitives

The distribution of bare infinitives seems to be slightly more complex than that of participles and *te*-infinitives. Although they normally follow their governing verb, they are sometimes also able to precede it if the verb cluster consists of no more than two verbs. So, while (28a) has the stylistically marked option of placing the verb *zwemmen* ‘to swim’ in front of its governing verb *gaan* ‘to go’, this word order is unacceptable in examples such as (28b) with a more complex verb cluster.

(28) a. dat Marie <zwemmen> gaat <zwemmen>.
that Marie swim goes
‘that Marie is going to swim.’
b. dat Marie <*zwemmen> zou <*zwemmen> gaan <zwemmen>.
that Marie swim would go
‘that Marie would be going to swim.’

A complicating factor is that bare infinitives may also be used as nominalizations, as is illustrated in (29); given that *zwemmen* functions as the subject of the clause, a nominalization analysis seems to be the only viable one; see Sections N1.3.1.2 and N2.3.3.2 for extensive discussion of this type of BARE-INF nominalization.

(29) Zwemmen is vermoeiend.
swim is tiring
‘Swimming is tiring.’

Of course, the possibility of nominalization does not create any problems in the case of aspectual non-main verbs like *gaan* ‘to go’ in (28), as such verbs cannot take nominal complements. Things are different, however, with verbs like *leren* ‘to learn/teach’, which can select a noun phrase as their complement. The examples in (30) show that *zwemmen* can be used with such verbs in the same positions as the noun phrase *iets nieuws* ‘something new’.

(30) a. dat Marie iets nieuws/zwemmen leert.
that Marie something new/swim learns
‘that Marie is learning something new/swimming.’
b. dat Marie iets nieuws/zwemmen zou leren.
that Marie something new/swim would learn
‘that Marie would learn something new/swimming.’

Since (28b) has shown that bare infinitives must follow their governing verbs in clusters of three verbs, the acceptability of (30b) with *zwemmen* would be very surprising if *zwemmen* were part of the verb cluster, but it falls into place quite naturally if we consider it a nominalization.

Example (31a) shows that *zwemmen* does not have to appear in front of the verb in clause-final position, but may also follow it. We indicated by means of subscripts that this goes hand in hand with a difference in categorial status of the bare infinitive: if it follows the verb *leren*, it is not a nominalization but a regular verb. This difference in categorial status can be made visible by means of the distribution of the IPP-effect in the corresponding perfect-tense examples: if the bare infinitive following *leren* is truly verbal, we would expect it to trigger the IPP-effect; if the bare infinitive preceding *leren* is nominal, we would expect it not to be compatible with the IPP-effect. The (b)-example in (31) show that these expectations are borne out.

(31) a. dat Marie <zwemmen$_N$> leert <zwemmen$_V$>.
that Marie swimming learns swim
‘that Marie is learning swimming/to swim.’
b. dat Marie heeft leren/*geleerd zwemmen$_V$.
that Marie has learn/learned swim
‘that Marie has learned to swim.’
b′. dat Marie zwemmen$_N$ heeft geleerd/*leren.
that Marie swimming has learned/learn
‘that Marie has learned swimming.’

We refer the reader to Section 5.2.3.1 for a more extensive discussion of the differences in syntactic behavior of verbal and nominal bare infinitives. Here we will simply repeat the tests that were proposed there to determine the categorial status of bare infinitives.

(32) The verbal and nominal use of bare infinitives

	INFINITIVAL CLAUSE	NOMINALIZATION
IS PART OF THE VERBAL COMPLEX	+	—
PRECEDES/FOLLOWS THE GOVERNING VERB	normally follows	precedes
TRIGGERS IPP-EFFECT	+	—
ALLOWS FOCUS MOVEMENT	—	+
MAY FOLLOW NEGATION EXPRESSED BY *NIET* ‘NOT’	+	—
CAN BE PRECEDED BY THE ARTICLE *GEEN* ‘NO’	—	+

Now that we have shown that examples in which bare infinitives precede the verb(s) in clause-final position must be instances of nominalizations, we can now put forward the generalization in (33). The part between parentheses is added to allow the option that bare infinitives precede their governing verb in clusters of no more than two verbs; we will return to that issue in Section 7.3.

(33) **Generalization III**: Bare infinitives follow their governing verb (in clusters consisting of three or more verbs).

IV. Aan het *+infinitive;*

The progressive *aan het* + *V*$_{\text{inf}}$ + *zijn* construction is problematic in the sense that it is not clear what the precise syntactic status of the *aan het* + *V*$_{\text{inf}}$ sequence is.

Section 1.5.3, sub I, argues that there are reasons for assuming that it is a °complementive PP headed by the preposition *aan*, but that there are also reasons for assuming that it is merely a non-finite form of the verb. Although we have left the issue undecided, we will not include the progressive construction in our discussion of verb clusters for the simple reason that the *aan*-phrase has the external distribution of a complementive: example (34b) shows that the sequence *aan het wandelen* must precede the verb(s) in clause-final position, which is surprising in view of the fact that in general verbs may follow their governing verb. The assumption that the *aan*-phrase is a prepositional complementive also accounts for the fact illustrated in (34c) that the verb *zijn* appears as a past participle in the perfect tense; if the *aan het* + V_{inf} sequence were a non-finite verb form, we would wrongly expect the infinitival form *wezen* 'to be', given that such complex perfect-tense constructions normally exhibit the IPP-effect. For completeness' sake, example (34c′) shows that the *aan het* + V_{inf} sequence cannot follow the other clause-final verbs in the perfect tense either.

(34) a. Jan is aan het wandelen op de hei.
Jan is AAN HET walk on the moor
'Jan is walking on the moor.'
b. dat Jan <aan het wandelen> is <*aan het wandelen> op de hei.
that Jan AAN HET walk is on the moor
'that Jan is walking on the moor.'
c. dat Jan aan het wandelen is geweest/*wezen op de hei.
that Jan AAN HET walk is been/be on the moor
'that Jan has been walking on the moor.'
c′. *dat Jan is wezen/geweest aan het wandelen op de hei.
that Jan is be/been AAN HET walk on the moor

V. Summary

This section has shown that past/passive participles and (*te*-)infinitives can be non-verbal in nature: participles and *te*-infinitives sometimes exhibit adjectival behavior and bare infinitives can be nominalized. It implies that we must take care before concluding that such elements are part of a verb cluster: they may also function as a complementive or simply head a nominal direct object. This provides solid ground for excluding such cases from the discussion of verb clusters.

7.1.3. Conclusion

This section has discussed ways of recognizing apparent cases of verb clusters. Section 7.1.1 started by discussing the fact that sequences of verbs in clause-final position do not only arise as the result of verb clustering in the technical sense of the word, but can also be the result of a process that we referred to as remnant extraposition. In order to distinguish the two cases, we proposed to use the *infinitivus-pro-participio* effect as a diagnostic. According to this test (i) perception verbs like *horen* 'to hear' in (35a) obligatorily form a cluster with an embedded bare infinitive, (ii) propositional verbs like *beweren* 'to claim' in (35b) cannot form a cluster with an embedded *te*-infinitive, and (iii) °irrealis verbs like *proberen* 'to try' in (35c) optionally form a cluster with an embedded *te*-infinitive. We also discussed a number of additional facts supporting these conclusions.

(35) a. dat ik een liedje heb horen/*gehoord zingen. [IPP obligatory]
that I a song have hear/heard sing
'that I've heard singing a song.'
b. dat Jan dat boek heeft beweerd/*beweren te lezen. [IPP impossible]
that Jan that book has claimed/claim to read
'that Jan has claimed to read that book.'
c. dat Jan dat boek heeft geprobeerd/proberen te lezen. [IPP optional]
that Jan that book has claimed/claim to read
'that Jan has tried to read that book.'

Section 7.1.2 continued by showing that we cannot always decide at face value whether past/passive participles and (*te*-)infinitives are verbal and thus part of the clause-final verb cluster: past/passive participle and *te*-infinitives may exhibit adjectival behavior, as a result of which they may end up left-adjacent to the verb cluster in their syntactic function as complementive; bare infinitives may be nominalized, as a result of which they may end up left-adjacent to the verb cluster in their syntactic function as direct object. Since complementives and direct objects are not part of verb clusters, we should exclude such cases in our discussion of verb clusters. The merit of taking this decision is that it enables us to account for the word order in verb clusters by means of the three relatively simple generalizations in (36), which are based on Den Besten & Broekhuis (1989) and which will be taken as our point of departure in the investigation of the linearization of verb clusters in Section 7.3.

(36) a. **Generalization I**: Past/passive participles either precede of follow their governing auxiliary.
b. **Generalization II**: *Te*-infinitives follow their governing verb.
c. **Generalization III**: Bare infinitives follow their governing verb (in clusters consisting of three or more verbs).

7.2. The hierarchical order of verbs in verb clusters

Verbs in a verb cluster are in a selectional relationship, and thus also in a certain hierarchical (structural) relation. In order to clarify the notion of hierarchy in verb clusters, consider (37a): since we know that the modal verb *must* selects a bare infinitival and that the perfect auxiliary *to have* selects a participle phrase, the base-generated hierarchical structure of this example must be as indicated by the bracketing. This bracketing shows that the modal verb is °superior to the auxiliary (as well as the participle), and that the auxiliary is superior to the participle. Example (37b) also shows that in English the superiority relation between verbs is straightforwardly reflected by their linear order: superior verbs precede the structurally lower ones.

(37) a. John [must [have [seen that film]]].
b. John must have seen that film.

This is not the case in languages like Dutch, however: the processes involved in the creation of verb clusters may disrupt the one-to-one correspondence between hierarchical and linear order. For example, verb clustering may linearize the hierarchical structure in (38a) in various ways, as indicated in the (b)-examples.

(38) a. Jan [moet [hebben [de film gezien]]].
b. dat Jan die film *moet hebben gezien*.
b′. dat Jan die film *moet gezien hebben*.
b″. dat Jan die film *gezien moet hebben*.

Subsection II will therefore propose a procedure for mechanically determining the underlying hierarchical order of verbs in verb clusters. This procedure will show, for instance, that in (39a) the modal verb *willen* ‘to want’ is superior to the perfect auxiliary *hebben*, whereas in (39b) the auxiliary is superior to the modal.

(39) a. dat Jan dat boek morgen <gelezen> wil <gelezen> hebben <gelezen>.
that Jan that book tomorrow read wants have
‘that Jan wants to have read that book by tomorrow.’
b. dat Jan dat boek altijd al heeft willen lezen.
that Jan that book always already has wanted read
‘that Jan has always wanted to read that book.’

Subsection III will show that the investigation of superiority relations reveals certain systematic hierarchical restrictions between verbs entering a single verb cluster; the contrast between the two examples in (40), for instance, will be argued to show that perfect auxiliaries may select verbal projections with an aspectual verb as their °head, but that aspectual verbs are not able to select verbal projections with a perfect auxiliary as their head.

(40) a. dat Jan dat boek is gaan lezen.
that Jan that book is go read
‘that Jan has started to read that book.’
b. *dat Jan dat boek gaat hebben gelezen.
that Jan that book goes have read

I. Notational conventions

Before we start our investigation, we want to introduce a number of notational conventions that may facilitate the discussion. If possible, we will distinguish the verbs in our schematic representations of verb clusters by means of denominators like *Aux(iliary)* for auxiliary verbs, *Asp*(*ectual*) for aspectual verbs, *Modal* for modal verbs, and *Main* for the most deeply embedded main verb. By using en-dashes to indicate linear order, we can schematically represent the verb clusters in (39) as in (41).

(41) a. Modal–Aux–Main [wil hebben gelezen]
a′. Modal– Main–Aux [wil gelezen hebben]
a″. Main–Modal–Aux [gelezen wil hebben]
b. Aux–Modal–Main [heeft willen lezen]

Furthermore, we will use numeral indices to indicate the hierarchical order; V_{i+1}–V_i expresses that V_{i+1} is superior to V_i, due to the fact that the former verb selects the projection of the latter verb as its complement. This means that we can now simultaneously express the linear and the hierarchical order of the verbs in the verb clusters in (39) by means of the representations in (42).

(42) a. Modal$_3$–Aux$_2$–Main$_1$ [wil hebben gelezen]
a′. Modal$_3$–Main$_1$–Aux$_2$ [wil gelezen hebben]
a″. Main$_1$–Modal$_3$–Aux$_2$ [gelezen wil hebben]
b. Aux$_3$–Modal$_2$–Main$_1$ [heeft willen lezen]

Observe that the use of shorthand “Main” in (41) and (42) is somewhat misleading because we have argued that modal verbs like *willen* ‘to want’ are also main verbs. By restricting the use of the most deeply embedded main verb (that is, by not using “Main$_2$”, “Main$_3$”, etc), this will probably not lead to any misinterpretations.

In order to avoid confusion, it is also important to note that the numbering convention is not used consistently in the linguistic literature: in many studies on verb clusters, counting does not start with the most deeply embedded verb, but with the most superior one, e.g., the finite verb in main clauses. We opt for the former option for practical reasons, more specifically because it will enable us to compare examples like (43a) and (43b) while keeping the numeral indices constant.

(43) a. dat Jan dat boek heeft willen lezen. [Aux$_3$-Modal$_2$-Main$_1$]
that Jan that book has wanted read
‘that Jan has wanted to read that book.’
b. dat Jan dat boek wil lezen. [Modal$_2$-Main$_1$]
that Jan that book wants read
‘that Jan wants to read that book.’
c. dat Jan dat boek leest. [Main$_1$]
that Jan that book reads
‘that Jan is reading that book.’

II. A procedure for determining hierarchical order

Detecting the hierarchical relations between verbs is easy in English as they can be read off the linear order of the verbs. Things are different, however, in the Germanic OV-languages, as these seem to allow the verbs in verb clusters to be linearized in various language-specific orders. For example, the cluster formed by the verbs in examples such as *dat Jan dat liedje heeft moeten zingen* ‘that Jan has had to sing that song’, with the hierarchical order indicated in the header of (44) surfaces in various linear orders depending on the language in question:

(44) • [...Aux$_3$ [...Modal$_2$ [... Main$_1$ ...]]]
a. Aux$_3$–Modal$_2$–Main$_1$: Dutch
b. Aux$_3$–Main$_1$–Modal$_2$: German
c. Modal$_2$–Aux$_3$–Main$_1$: —
d. Modal$_2$–Main$_1$– Aux$_3$: Afrikaans
e. Main$_1$–Aux$_3$–Modal$_2$: —
f. Main$_1$–Modal$_2$–Aux$_3$: Frisian

Example (44) shows that four out of the six logically possible linear orders occur as a neutral order in some major Germanic OV-language. There are only two linear orders that do not occur as such: the orders in (44c&e) are rare and occur in stylistically/intonationally marked contexts only; see Schmid & Vogel (2004) for a selection of German dialects, and Barbiers et al. (2008:ch.1) for Dutch dialects.

The variation we find shows that the linear order of verbs in verb clusters does not necessarily reflect their underlying hierarchical order. Fortunately, there is a simple procedure to establish the latter order, which is based on the assumption that the most superior (structurally highest) verb in the cluster shows up as the finite verb in finite clauses: by omitting this verb, the next most superior verb will surface as the finite verb, etc. By applying this procedure to example (45a), we can provide syntactic evidence for the hierarchical structure proposed in the header of (44); omission of the finite auxiliary forces the modal verb to surface as the finite verb in (45b), and by also omitting this modal, the verb *zingen* will surface as the finite verb in (45c).

(45) a. dat Jan dat liedje heeft$_{finite}$ moeten$_{inf}$ zingen$_{inf}$. [Aux$_3$–Modal$_2$–Main$_1$]
that Jan that song has must sing
‘that Jan has had to sing that song.’
b. dat Jan dat liedje moet$_{finite}$ zingen$_{inf}$. [Modal$_2$–Main$_1$]
that Jan that song must sing
‘that Jan has to sing that song.’
c. dat Jan dat liedje zingt$_{finite}$. [Main$_1$]
that Jan that song sings
‘that Jan is singing that song.’

As it happens, the linear order of the verbs in (45) reflects their hierarchical order in a one-to-one fashion. We will therefore apply the same procedure to example (46a), in which the linear order does not correspond in a one-to-one fashion to the underlying hierarchical order *[... Modal [... Aux [... Main ...]]]*.

(46) a. dat Jan dat liedje zou$_{finite}$ gezongen$_{part}$ hebben$_{inf}$. [Modal$_3$–Main$_1$–Aux$_2$]
that Jan that song would sung have
‘that Jan would have sung that song.’
b. dat Jan dat liedje gezongen$_{part}$ had$_{finite}$. [Main$_1$–Aux$_2$]
that Jan that song sung had
‘that Jan had sung that song.’
c. dat Jan dat liedje zong$_{finite}$. [Main$_1$]
that Jan that song sang
‘that Jan sang that song.’

Although the hierarchical order of the verbs in a given verb cluster will normally also be clear from the selection restrictions imposed by the verbs involved, it is certainly useful to be able to support analyses proposed on the basis of such restrictions independently by means of the simple omission test proposed here.

III. Restrictions on hierarchical order

This section discusses a number of restrictions on the hierarchical order of verbs in verb clusters. The main issue is: What types of verbal projections can be selected by what types of verbs? Subsection A starts with a discussion of the basic cluster types of two verbs that can be created by embedding a main verb under a non-main verb or some other main verb that triggers verb clustering. The investigation in the later subsections in a sense inverts the procedure for determining the hierarchical organization of verb clusters proposed in Subsection II by considering the question of how the basic cluster types discussed in Subsection A can be extended by embedding them under some non-main verb, or an additional main verb that triggers verb clustering. The discussion will show that it is not the case that anything goes: there are certain restrictions on what counts as acceptable verb combinations. The existence of such restrictions is clearest in clusters of three or more verbs with just one single main verb, and Subsection B will therefore discuss these first. Subsequently, Subsection C and D will address verb clusters of three or more verbs with, respectively, two and three main verbs. It is possible to construct clusters with four or more main verbs, but such clusters are rarely attested in actual language use and resist syntactic investigation due to the fact that the meanings expressed by such clusters are normally quite far-fetched; for this reason, we will not attempt to discuss such cases in a systematic way.

A. Verb clusters of two verbs

An absolute restriction on verb clusters is that the most deeply embedded verb must be a main verb. In our examples we will generally use the transitive verb *lezen* ‘to read’ for practical reasons instead of an intransitive or an unaccusative verb: (i) some of the superior verbs may impose an animateness restriction on the subject of their verbal complement; (ii) the placement of the direct object of *lezen* provides a clue for the analysis of the construction—verb clustering requires that it precede the superior verb; (iii) infinitival transitive verbs like *lezen* can be passivized whereas intransitive and unaccusative verbs cannot.

Sections 5.2 and Chapter 6 have shown that main verbs can be selected by various types of main and non-main verbs. In what follows, we will discuss a small, representative sample of such verbs triggering verb clustering. We will take the subject °control verb *proberen* ‘to try’ and the °subject raising (SR) verb *schijnen* ‘to seem’ in (47) as representatives of the class of main verbs selecting *te*-infinitivals, and the modal verb *moeten* ‘must/be obliged’, the perception verb *zien* ‘to see’, and the causative/permissive verb *laten* ‘to make/let’ in (48) as representatives of the class of main verbs selecting bare infinitivals. The verb clusters in these examples are given in italics, and the superior main verbs are underlined.

(47) a. dat Jan dat boek *probeert te lezen*. [Control$_2$–Main$_1$]
that Jan that book tries to read$_{inf}$
‘that Jan is trying to read that book.’
b. dat Jan dat boek *schijnt te lezen*. [SR$_2$–Main$_1$]
that Jan that book seems to read$_{inf}$
‘that Jan seems to be reading that book.’

(48) a. dat Jan dat boek *moet lezen*. [Modal$_2$–Main$_1$]
that Jan that book must read$_{inf}$
‘that Jan must/is obliged to read that book.’
b. dat Jan haar dat boek *ziet lezen*. [Perc$_2$–Main$_1$]
that Jan her that book sees read$_{inf}$
‘that Jan sees her read that book.’
c. dat Jan haar dat boek *laat lezen*. [Caus$_2$–Main$_1$]
that Jan her that book makes read$_{inf}$
‘that Jan makes/lets her read that book.’

Non-main verbs can also be divided into several classes. First, the examples in (49) show that perfect and passive auxiliaries select verbs in the form of a participle. Example (49c) contains the ditransitive particle verb *voorlezen* ‘to read aloud’, since *krijgen*-passivization requires that an indirect object be promoted to subject. Note that the participles may also follow the auxiliaries; we will ignore this here but return to it in Section 7.3, where we will discuss the linearization of verb clusters. The verb clusters in (49) are again given in italics, and the non-main verbs are underlined.

(49) a. dat Jan dat boek *gelezen heeft*. [Main$_1$–Perf$_2$]
that Jan that book read$_{part}$ has
‘that Jan has read that book.’
b. dat dat boek *gelezen wordt*. [Main$_1$–Pass$_2$]
that that book read$_{part}$ is
‘that that book is being read.’
c. dat het kind dat boek *voorgelezen krijgt*. [Main$_1$–Pass$_2$]
that the child that book prt-read$_{part}$ gets
‘that the child is being read that book aloud.’

Second, the examples in (50) show that there are also non-main verbs selecting infinitival complements: aspectual verbs like *gaan* ‘to go’ select bare infinitivals, whereas semi-aspectual verbs like *zitten* ‘to sit’ select *te*-infinitivals (if they are finite).

(50) a. dat Jan dat boek *gaat lezen*. [Asp$_2$–Main$_1$]
that Jan that book goes read$_{inf}$
‘that Jan is going to read that book.’
b. dat Jan dat boek *zit te lezen*. [Semi-asp$_2$–Main$_1$]
that Jan that book sits to read$_{inf}$
‘that Jan is reading that book.’

B. Larger verb clusters with one main verb

The verb clusters in the examples discussed in Subsection A can be extended by adding one or more verbs that triggers verb clustering. That it is not a random affair can readily be observed in larger verb clusters with a single main verb, that is, extensions of the verb clusters in (49) and (50) with a non-main verb. We start our discussion with extensions of the (semi-)aspectual examples in (50), after which we will proceed to the perfect/passive examples in (49). The examples in (51) first show that aspectual verbs like *gaan* ‘to go’ and semi-aspectual verbs like *zitten* ‘to zit’ may co-occur, but that the former must then be superior to the latter–cases like (51b), in which a semi-aspectual verb is superior to an aspectual verb, are unacceptable.

(51) a. dat Jan dat boek *gaat zitten lezen.* [Asp$_3$–Semi-asp$_2$–Main$_1$]
that Jan that book goes sit read$_{inf}$
‘that Jan is going to read that book.’
b. *dat Jan dat boek *zit* (*te*) *gaan lezen.* [Semi-asp$_3$–Asp$_2$–Main$_1$]
that Jan that book sits to go read$_{inf}$

The primeless examples in (52) show that (semi-)aspectual verbs can also co-occur with the perfect auxiliaries; aspectual verbs take the auxiliary *zijn*, whereas semi-aspectual verbs take the auxiliary *hebben* (just like their main verb counterparts). The primed examples show, however, that the perfect auxiliary must be superior to the (semi-)aspectual verb; they do not seem to be able to take a perfect phrase, that is, a phrase containing a perfect auxiliary as their complement (although examples such as (52a′) do occasionally occur on the internet). Example (52c) shows that examples such as (51a), which contain both an aspectual and a semi-aspectual verb, can also occur in the perfect tense; the auxiliary must then again be the most superior one in the cluster.

(52) a. dat Jan dat boek *is gaan lezen.* [Perf$_3$–Asp$_2$–Main$_1$]
that Jan that book is go read$_{inf}$
‘that Jan has been going to read that book.’
a′. *dat Jan dat boek *gelezen gaat hebben.* [Asp$_3$–Perf$_2$–Main$_1$]
that Jan that book read$_{part}$ goes have
b. dat Jan dat boek *heeft zitten* (*te*) *lezen.* [Perf$_3$–Semi-asp$_2$–Main$_1$]
that Jan that book has sit to read$_{inf}$
‘that Jan has been reading that book.’
b′. *dat Jan dat boek *gelezen zit* (*te*) *hebben.* [Semi-asp$_3$–Perf$_2$–Main$_1$]
that Jan that book read$_{part}$ sits to have
c. dat Jan dat boek *is gaan zitten lezen.* [Perf$_4$–Asp$_3$–Semi-asp$_2$–Main$_1$]
that Jan that book is go sit read$_{inf}$
‘that Jan has started to read that book.’

Although it is not possible to have more than one perfect or more than one passive auxiliary in a single clause, the examples in (53) show that it is possible for perfect and passive auxiliaries to co-occur. Example (53a) is marked with a percentage sign given that it is restricted to certain southern varieties of Dutch, but example (53b) is generally accepted.

(53) a. $^{\%}$dat dat boek *gelezen is geworden.* [Main$_1$–Perf$_3$–Pass$_2$]
that that book read$_{part}$ is been
‘that that book has been read.’
b. dat het kind dat boek *voorgelezen heeft gekregen.* [Main$_1$–Perf$_3$–Pass$_2$]
that the child that book prt-read$_{part}$ has got
‘that the child has been read that book aloud.’

The hierarchical order of the two auxiliaries is very strict: the perfect auxiliary is always superior to the passive auxiliary. In fact, it seems that passive auxiliaries are always very low in the structure, as is clear from (54a) in which the passive auxiliary is embedded under the aspectual verb *gaan* ‘to go’. Similar examples with semi-aspectual verbs like *zitten* ‘to sit’ seem rare though, and mainly restricted to main verbs and verbal expressions denoting acts of deception like *bedriegen*/*belazeren* ‘to deceive’ and *om de tuin leiden* ‘to lead down the garden path’ in the (b)-examples; in such cases, the semi-aspectual verb is again clearly superior to the passive auxiliary.

(54) a. dat Jan per maand betaald gaat worden. [Main$_1$–Asp$_3$–Pass$_2$]
that Jan per month paid goes be
‘that Jan is going to be paid per month.’
b. dat ik hier bedrogen/belazerd zit te worden. [Main$_1$–Semi-asp$_3$–Pass$_2$]
that I here deceived/deceived sit to be
‘that I’m being deceived here.’
b′. dat ik om de tuin geleid zit te worden. [Main$_1$–Semi-asp$_3$–Pass$_2$]
that I around the garden led sit to be
‘that I’m being led down the garden path.’

The discussion in this section has shown that there is a strict hierarchical order between the non-main verbs in verb clusters. This order is as given in (55), in which the connective “>” stands for “is superior to”.

(55) **Hierarchical order in verb clusters with one main verb**: perfect auxiliary > aspectual > semi-aspectual > passive auxiliary > main verb

C. Larger Verb clusters with two main verbs

This section discusses larger verb clusters with two main verbs, As our point of departure we will take examples in (47) and (48) from Subsection A, which are repeated here as (56) and (57) for convenience.

(56) a. dat Jan dat boek *probeert te lezen*. [Control$_2$-Main$_1$]
that Jan that book tries to read$_{inf}$
‘that Jan is trying to read that book.’
b. dat Jan dat boek *schijnt te lezen*. [SR$_2$–Main$_1$]
that Jan that book seems to read$_{inf}$
‘that Jan seems to be reading that book.’

(57) a. dat Jan dat boek *moet lezen*. [Modal$_2$–Main$_1$]
that Jan that book must read$_{inf}$
‘that Jan must/is obliged to read that book.’
b. dat Jan haar dat boek *ziet lezen.* [Perc$_2$–Main$_1$]
that Jan her that book sees read$_{inf}$
‘that Jan sees her read that book.’
c. dat Jan haar dat boek *laat lezen*. [Caus$_2$–Main$_1$]
that Jan her that book makes read$_{inf}$
‘that Jan makes/lets her read that book.’

We will extend these constructions by an additional non-main verb. In principle, this can be done in two different ways: we can add the non-main verb to the superior main verb, but we can also add it to the structurally lower one. The discussion in the following subsections will show that there are various restrictions. These are, however, normally not of a syntactic, but rather of a semantic or a pragmatic nature.

1. Perfect auxiliaries I: Perf$_3$-Main$_2$-Main$_1$

It seems easily possible to add a perfect auxiliary to the superior main verbs in (56) and (57) with the exception of the subject raising verb *schijnen*: most people consider examples such as (58b) at least marked. Observe that all examples exhibit the °*infinitivus-pro-participio* (IPP) effect, which is of course not surprising given that we have seen that this is a hallmark of verb clustering; cf. Section 7.1.1. For convenience, we will underline the added non-main verbs in the examples to come.

(58) a. dat Jan dat boek *heeft* *proberen* *te lezen*. [Perf$_3$–Control$_2$–Main$_1$]
that Jan that book has try to read$_{inf}$
‘that Jan has tried to read that book.’
b. $^?$dat Jan dat boek *heeft* *schijnen* *te lezen*. [Perf$_3$–SR$_2$–Main$_1$]
that Jan that book has seems to read$_{inf}$
‘that Jan has seemed to read that book.’

(59) a. dat Jan dat boek *heeft* *moeten* *lezen*. [Perf$_3$–Modal$_2$-Main$_1$]
that Jan that book has must read$_{inf}$
‘that Jan has had to read that book.’
b. dat Jan haar dat boek *heeft* *zien* *lezen*. [Perf$_3$–Perc$_2$-Main$_1$]
that Jan her that book has see read$_{inf}$
‘that Jan has seen her read that book.’
c. dat Jan haar dat boek *heeft* *laten* *lezen*. [Perf$_3$–Caus$_2$-Main$_1$]
that Jan her that book has make/let read$_{inf}$
‘that Jan has made/let her read that book.’

2. Perfect auxiliaries I: Main$_3$-Perf$_2$-Main$_1$

At first sight, it seems that control and subject raising verbs differ with respect to the question as to whether they are able to take a perfect *te*-infinitival as their complement: whereas (60b) is impeccable, example (60a) seems infelicitous.

(60) a. $^{\$}$dat Jan dat boek *gelezen* *probeert* te hebben. [Main$_1$-Control$_3$- Perf$_2$]
that Jan that book read$_{part}$ tries to have
‘that Jan tries to have read that book.’
b. dat Jan dat boek *gelezen* *schijnt* te hebben. [Main$_1$-SR$_3$- Perf$_2$]
that Jan that book read$_{part}$ seems to have
‘that Jan seems to have read that book.’

There is reason, however, to assume that the infelicitousness of (60a) is not due to some syntactic selection restriction imposed by *proberen*, but is related to the fact that *proberen* triggers an °irrealis reading of its complement: the °eventuality expressed by the *te*-infinitival must be located in the non-actualized part of the time interval evoked by the present/past tense of the °matrix clause—in the present, the eventuality is located *after* speech time. This seems to clash with the default reading of the perfect, which locates the completed eventuality in the actualized part of the relevant tense domain. The present perfect example (61a), for example, locates the eventuality *before* speech time by default; it normally expresses that Jan has read the book at speech time. It must be observed, however, that this default reading of the perfect is pragmatic in nature and can readily be canceled by adding an adverbial phrase like *morgen* 'tomorrow' that refers to a time interval in the non-actualized part of the tense domain; example (61b) locates the completed eventuality *after* speech time; see Section 1.5.4 for extensive discussion.

(61) a. Jan heeft het boek zeker gelezen.
Jan has the book certainly read
'Jan has certainly read the book.'
b. Jan heeft het boek morgen zeker gelezen.
Jan has the book tomorrow certainly read
'Jan will certainly have read the book by tomorrow.'

This suggests that the default reading of the perfect tense makes the assertion expressed by (60a) incoherent, Example (62) shows, however, that (60a) also becomes fully acceptable if we add the adverb *morgen* 'tomorrow'. This suggests that the unacceptability of (60a) is not due to some syntactic (or semantic) selection restriction either but is simply an effect of pragmatics: the addition of *morgen* provides additional temporal information that cancels the default reading of the perfect, as a result of which the eventuality expressed by the infinitival clause can be located in the non-actualized part of the present domain and the message becomes fully coherent.

(62) dat Jan het boek morgen *gelezen probeert te hebben*.
that Jan the book tomorrow prt-read$_{part}$ tries to have
'that Jan tries to have read the book by tomorrow.'

Note in passing that we cannot appeal to the IPP-effect in order to establish that we are indeed dealing with a verb cluster of three verbs in examples such as (62), given that it is impossible to add a second perfect auxiliary associated with the superior verb *proberen*: cf. **dat Jan dat boek morgen gelezen heeft proberen/geprobeerd te hebben*. It seems, however, very unlikely that (62) can be analyzed as a remnant extraposition construction: under such an analysis, the fact that the participle *gelezen* precedes the verb *proberen* can only be derived if we extract this participle from the verb cluster *gelezen te hebben* of the extraposed *te*-infinitival clause, but such movements have not been attested (or even considered as a possible option) in the existing literature. Nevertheless, we should note that we did find a small number of cases on the internet such as *gehoord/gezien beweert te hebben* 'claims to have heard/seen', despite the fact that there is strong evidence for assuming that *beweren* normally triggers (remnant) extraposition; we will ignore this problem here and leave the question as to whether or not these cases should be seen as accidental writing errors for future research.

Subsection C1 has shown that the perfect auxiliary can be readily added to the superior verb in clusters like Modal$_2$–Main$_1$; the relevant example is repeated here as (63a). Example (63b) shows that it is equally possible to add a perfect auxiliary to the embedded main verb.

(63) a. dat Jan dat boek *heeft moeten lezen*. [Perf$_3$–Modal$_2$–Main$_1$]
that Jan that book has must read
'that Jan has had to read that book.'
b. dat Jan dat boek *moet hebben gelezen*. [Modal$_3$–Perf$_2$–Main$_1$]
that Jan that book must have read
'that Jan has to have read that book.'

The two examples do, however, exhibit a conspicuous difference in interpretation: whereas the modal in (63a) receives a (directed) deontic "obligation" reading, the modal in (63b) receives an epistemic "necessity" interpretation; we refer the reader to Section 5.2.3.2, sub III, for a discussion of these types of modality. This contrast can also be demonstrated by the fact illustrated in (64) that the hierarchical order Perf$_3$–Modal$_2$–Main$_1$ requires the subject of the sentence to be able to control the eventuality expressed by Main$_1$, whereas the hierarchical order Modal$_3$–Perf$_2$–Main$_1$ does not require this.

(64) a. *dat dat huis *heeft moeten instorten*. [Perf$_3$–Modal$_2$–Main$_1$]
that that house has must prt.-collapse
b. dat dat huis *moet zijn ingestort*. [Modal$_3$–Perf$_2$–Main$_1$]
that that house must be prt.-collapsed
'that that house must have collapsed.'

It is not clear whether the difference in interpretation between the two examples in (63) has a syntactic origin. The past perfect counterpart of (63a) in (65a), for example, seems to be compatible both with a directed deontic and with an epistemic reading of the modal verb. That this is indeed the case is supported by the fact that the past perfect counterpart of (64a) in (65b) is also fully acceptable.

(65) a. dat Jan dat boek *had moeten lezen*. [Perf$_3$–Modal$_2$–Main$_1$]
that Jan that book has must read
'that Jan had been obliged to read that book.'
b. dat dat huis *had moeten instorten*. [Perf$_3$–Modal$_2$–Main$_1$]
that that house has must prt.-collapse
'that that house had had to collapse.'

Section 5.2.3.2, sub IIIC, has further argued that the epistemic reading of example (63b) is related to the default reading of the perfect tense, namely that the completed eventuality is placed in the actualized part of the present-tense interval (that is, *before* speech time). This correctly predicts that the deontic interpretation of the modal is possible in (66), in which we cancelled this default reading by adding an adverb like *morgen* 'tomorrow', which locates the eventuality in the non-actualized part of the present-tense interval.

(66) dat Jan dat boek morgen *moet hebben gelezen*. [Modal$_3$–Perf$_2$–Main$_1$]
that Jan that book tomorrow must have read
'that Jan must have read that book tomorrow.'

This leads to the conclusion that there does not seem to be any syntactic restriction that blocks the extension of the cluster Modal$_2$–Main$_1$ by adding a perfect auxiliary associated with either Modal$_2$ or Main$_1$.

This leaves us with the constructions containing perception and causative verbs. Subsection C1 has shown that perfect auxiliaries can be readily added to these verbs, but it seems impossible to add them to the embedded main verb; examples such as (67) are infelicitous.

(67) a. $^{\$}$dat Jan haar dat boek *ziet hebben gelezen.* [Perc$_3$–Perf$_2$–Main$_1$]
that Jan her that book sees have read$_{part}$
Compare: 'that Jan sees her have read that book.'

b. $^{\$}$dat Jan haar dat boek *laat hebben gelezen.* [Caus$_3$– Perf$_2$–Main$_1$]
that Jan her that book makes have read$_{part}$
Compare: 'that Jan makes/let her have read that book.'

The use of the dollar signs indicates that it is again not *a priori* clear whether the unacceptability of these examples is due a syntactic or a semantic/pragmatic restriction. We believe that there is reason to think of a constraint of the latter type. In the case of (67a), the reason for this is that examples such as *dat Jan haar dat boek ziet lezen* 'that Jan sees her read that book' express a notion of simultaneity: the eventuality of seeing occurs simultaneously with the eventuality expressed by the embedded bare infinitival, and the default reading of simple present locates these eventualities *at* speech time. This seems to clash with the default reading of the perfect tense in examples such as (67a), which locates the completed eventuality expressed by the infinitival complement in the actualized part of the present-tense interval, that is, *before* speech time.

Under its causative interpretation, the construction in (67b) is an irrealis construction in the sense that the eventuality expressed by the embedded bare infinitival is located *after* speech time, which again clashes with the default interpretation of the perfect, which locates the completed eventuality *before* speech time. Under its permissive interpretation, the eventuality expressed by the embedded bare infinitival is either located *at* or *after* speech time, and this again clashes with the default interpretation of the perfect. It should be noted, however, that the addition of an adverb like *morgen* 'tomorrow' does not seem to improve the result: $^{??}$*dat Jan haar morgen dat boek laat hebben gelezen*, perhaps because this construction is blocked by the simpler construction *dat Jan haar morgen dat boek laat lezen* 'that Jan will make her read that book tomorrow'. We will not pursue this issue any further.

The main finding of this subsection is that there is no reason for assuming a syntactic restriction that prohibits the selection of a perfect infinitival construction by the superior main verbs in (56) and (57). In some cases this leads to infelicitous results, but this seems due to semantic/pragmatic reasons.

3. Passive auxiliaries I: Pass$_3$-Main$_2$-Main$_1$

It seems impossible to passivize the superior verbs in the examples in (56) and (57) from the introduction to this subsection (p.1069). The fact that control verbs like *proberen* 'to try' resist passivization if they are part of a verb cluster strongly suggests that this is due to some syntactic constraint. Consider the examples in (68). The primeless examples illustrate again that *proberen* is not only able to select transparent *te*-infinitivals, which gives rise to verb clustering, but also opaque *te*-infinitivals, which gives rise to extraposition. The primed examples show that passivization is only possible if the complement is opaque/extraposed; cf. Koster (1984b). Observe that substituting an infinitive for the participle *geprobeerd* or changing the order of the verb cluster (or a combination of the two) will not affect the status of (68b′).

(68) a. dat Jan probeert (*om*) *het boek te lezen*. [extraposition]
that Jan tries COMP the book to read
'that Jan is trying to read the book.'
a′. dat er geprobeerd wordt (*om*) *het boek te lezen*.
that there tried is COMP the book to read
'that it is tried to read the book.'
b. dat Jan het boek *probeert te lezen*. [verb clustering]
that Jan the book tries to read
'that Jan is trying to read that book.'
b′. *dat er het boek *geprobeerd* wordt *te lezen*. [Control$_2$–Pass$_3$–Main$_1$]
that there the book tries be to read

The fact that *proberen* can be passivized if it selects an opaque *te*-infinitive suggests that there must be something special going on if *proberen* selects a transparent *te*-infinitive. However, there is no reason for assuming that this is due to some selection restriction, given that this can also be accounted for in terms of obligatory and optional control; see Section 5.2.1.3, sub III, for these notions. First, the implicit PRO-subject of opaque infinitival clauses is optionally controlled; it does not require an antecedent in the matrix clause, as a result of which the passive construction in acceptable. Second, the implicit PRO-subject of transparent infinitival clauses is obligatorily controlled in that it does require an antecedent in the matrix clause, as a result of which the passive construction is unacceptable. We refer the reader to Section 5.2.2.1 for a more detailed discussion of this. For completeness' sake, we should note that the discussion above has ignored the fact that (68b) can in principle also be analyzed as a remnant extraposition construction, that is, as a case with a semi-transparent *te*-infinitival; this does not really affect the argument given that Section 5.2.2.3 has shown that PRO-subjects of such infinitival clauses are also obligatorily controlled.

The fact that subject raising verbs like *schijnen* 'to seem' cannot be passivized is expected; Section 5.2.2.2, sub IC, has shown that such verbs are °unaccusative; since unaccusative verbs always resist passivization, there is nothing special to discuss here.

The examples in (69) show that main verbs selecting a bare infinitival cannot be passivized, regardless of whether the passivized verb surfaces as an infinitive or a participle. We give the examples with clusters in the order Pass$_3$–V$_2$–Main$_1$; changing this order will not affect the acceptability judgments.

(69) a. *dat (er) dat boek *wordt* *moeten/gemoeten* *lezen*. [Pass$_3$–Modal$_2$–Main$_1$]
that there that book is must$_{inf}$/must$_{part}$ read$_{inf}$
b. *dat (er) haar dat boek *wordt* *zien/gezien* *lezen*. [Pass$_3$–Perc$_2$–Main$_1$]
that there her that book is see/seen read$_{inf}$
c. *dat (er) haar dat boek *wordt* *laten/gelaten* *lezen*. [Pass$_3$–Caus$_2$–Main$_1$]
that there her that book is made$_{inf}$/made$_{part}$ read$_{inf}$

Because constructions with perception and causative verbs are often analyzed as heads of °AcI-constructions, the unacceptability of the (impersonal) passive constructions in (69b&c) need not surprise us as we may expect that passivization must involve promotion of the subject of the bare infinitival to subject of the matrix clause. This expectation is, however not borne out; the examples in (70) are also unacceptable.

(70) a. *dat zij dat boek *wordt* *zien/gezien* *lezen*. [Pass$_3$–Perc$_2$–Main$_1$]
that she that book is see/seen read$_{inf}$
b. *dat zij dat boek *wordt* *laten/gelaten* *lezen*. [Pass$_3$–Caus$_2$–Main$_1$]
that she that book is made$_{inf}$/made$_{part}$ read$_{inf}$

The fact that perception and causative verbs are not normally analyzed as control verbs (see Petter 1998:ch.4 for an alternative view) suggests that the unacceptability of passivization in (69) and (70) cannot be accounted for by an appeal to control theory. Since there is no obvious semantic/pragmatic reason for the impossibility of passivization either, it seems likely that we have to account for the unacceptability of these examples in terms of verb clustering; for one attempt of this type we refer to Bennis & Hoekstra (1989b).

4. Passive auxiliaries II: Main$_3$-Pass$_2$-Main$_1$

This subsection discusses passivization of the more deeply embedded verbs in the examples in (56) and (57) from the introduction to this subsection (p.1069). Let us first consider the case in (71), in which the superior verb is a control verb; (71a) involves regular passivization and (71b) *krijgen*-passivization. The reader can easily identify the two main verbs by keeping in mind that the most deeply embedded main verb (Main$_1$) appears as a participle; the control verb is the finite verb.

(71) a. $^{\%}$dat Jan gelezen probeert te worden. [Main$_1$–Control$_3$–Pass$_2$]
that Jan read$_{part}$ tries to be
'that Jan tries to be read.'
b. dat Jan dat boek voorgelezen probeert te krijgen. [Main$_1$–Control$_3$–Pass$_2$]
that Jan that book prt-read$_{part}$ tries to get
'that Jan is trying to be read that book aloud.'

The fact that the *krijgen*-passive can readily be embedded under *proberen* in (71b) suggests that the infelicitousness of (71a) has little to do with syntactic selection restrictions imposed by the verb *proberen*. Instead, it is reasonable to assume that it is due to the fact that we are dealing with an obligatory subject control construction;

the animate subject of *proberen* is simply not a suitable antecedent for the implied PRO-subject of the infinitival passive construction: $^{\$}$*Jan*$_i$ *probeert [PRO*$_i$ *gelezen te worden]*. Observe that we used a percentage sign in (71a) in order to express that some people may accept this example in the reading in which Jan is attempting to make other people read a body of work written by him; cf. *Louis Couperus wordt nog veel gelezen* ‘Louis Couperus is still read a lot’. That our account in terms of obligatory subject control is on the right track is also suggested by the fact that completely parallel examples are acceptable if subject control leads to a result compatible with the selection restriction imposed by the passive construction on the subject. This is illustrated in the primeless examples in (72), in which the animate subject of *proberen* is a suitable antecedent for the PRO-subject of the infinitival passive construction: *Jan*$_i$ *probeert [PRO*$_i$ *ontslagen/verkozen te worden]*. The primed examples are added to show that we get the IPP-effect in the perfect tense, from which we may conclude that we are indeed dealing with verb clustering—the same is, of course, supported by the fact that the passive participles precede the verb *proberen*.

(72) a. dat Jan *ontslagen probeert* te worden. [Main$_1$–Control$_3$–Pass$_2$]
that Jan dismissed tries to be
‘Jan Jan is trying to get dismissed.’

a′. dat Jan *ontslagen heeft proberen/*geprobeerd te worden*.
that Jan dismissed has try/tried to be
‘Jan Jan has tried to get dismissed.’

b. dat Jan *verkozen probeert* te worden. [Main$_1$–Control$_3$–Pass$_2$]
that Jan elected tries to be
‘that Jan is trying to get elected.’

b′. dat Jan *verkozen heeft proberen/*geprobeerd te worden*.
that Jan elected has try/tried to be
‘that Jan has tried to get elected.’

The examples in (73) show that subject raising verbs like *schijnen* are quite capable of taking a passivized *te*-infinitival: (73a) involves a regular and (73b) a *krijgen*-passive. The most deeply embedded main verb (Main$_1$) again appears as a participle, while the subject raising verb is the finite verb.

(73) a. dat dat boek door Els *gelezen schijnt* te worden. [Main$_1$–SR$_3$–Pass$_2$]
that that book by Els prt-read$_{part}$ seems to be
‘that that book seems to be read by Els.’

b. dat Marie dat boek *voorgelezen schijnt* te krijgen. [Main$_1$–SR$_3$–Pass$_2$]
that Marie that book prt-read$_{part}$ seems to get
‘that Marie seems to be read that book to.’

The examples in (74) show that modal, perception and causative verbs are able to select a passivized bare infinitival. The acceptability of the results sometimes depends on the embedded main verb, for which reason we replaced the verb *lezen* by the main verb *slopen* ‘to demolish’ in (74b&c).

(74) a. dat dat boek morgen *gelezen moet zijn*. [Main$_1$–Modal$_3$–Pass$_2$]
that that book tomorrow read$_{part}$ must have.been
‘that that book must have been read by tomorrow.’
b. dat Jan het huis (door Els) gesloopt zag worden. [Main$_1$–Perc$_3$–Pass$_2$]
that Jan the house by Els demolished saw be
‘that Jan saw the house be demolished (by Els).’
c. %dat Jan het huis (door Els) gesloopt liet worden. [Main$_1$–Caus$_3$–Pass$_2$]
that Jan the house by Els demolished let be
‘that Jan made/let the house be demolished (by Els).’

A percentage sign is added to (74c) because some speakers object to this example, and the same seems to hold to a lesser extent for (74b). There is reason for assuming that this is not related to a selection restriction imposed by the causative/perception verb. Instead, it seems related to the fact that there is an alternative way of expressing the passive meaning with the help of AcI-verbs. This is illustrated in the examples in (75), which show that the subjects can simply be omitted or be replaced by agentive *door*-PPs.

(75) a. dat Jan Els het huis zag slopen.
that Jan Els the house saw demolish
‘that Jan saw Els demolish the house.’
a′. dat Jan het huis (door Els) zag slopen.
that Jan the house by Els saw demolish
b. dat Jan Els het huis liet slopen.
that Jan Els the house made demolish
‘that Jan made/let Els demolish the house.’
b′. dat Jan het huis (door Els) liet slopen.
that Jan the house by Els let demolish

One possible account for the markedness of (74c) is an appeal to syntactic °blocking; for one reason or another, speakers simply value the structure in (75b′) higher than the one in (74c). If so, we may conclude our discussion by saying that the superior main verbs in (56) and (57) do not impose any restrictions on the voice of their infinitival complement.

5. Semi-aspectual and Aspectual verbs I: Asp$_3$-Main$_2$-Main$_1$

The examples in (76) show that the addition of a (semi-)aspectual verb on top of control structures such as (56a) seems possible. Some people may find example (76b) somewhat marked as given, but it becomes completely acceptable if we add an adverbial phrase of duration like *al de hele dag* ‘already the whole day’: *dat Jan dat boek al de hele dag zit te proberen te lezen*.

(76) a. dat Jan dat boek *gaat proberen te lezen*. [Asp$_3$–Control$_2$–Main$_1$]
that Jan that book goes try to read$_{inf}$
‘that Jan is going to try to read that book.’
b. dat Jan dat boek *zit te proberen te lezen*. [Semi-Asp$_3$–Control$_2$–Main$_1$]
that Jan that book sits to try to read$_{inf}$
‘that Jan is trying to read that book.’

A problem with the examples in (76) is that we cannot prove that we are dealing with verb clusters of the type Asp$_3$-Main$_2$-Main$_1$. The reason is that perfect auxiliaries must be superior to the (semi-)aspectual verbs; cf. example (55) in Subsection B. This means that we can make sequences of the form Perf$_4$–Asp$_3$–Control$_2$-Main$_1$, as shown in (77), but not of the form Asp$_4$–Perf$_3$–Control$_2$–Main$_1$, which are needed to check whether the IPP-effect applies to the control verb *proberen*.

(77) a. dat Jan dat boek *is gaan proberen te lezen*.
that Jan that book is go try to read$_{inf}$
‘that Jan has been going to try to read that book.’
b. dat Jan dat boek *heeft zitten proberen te lezen*.
that Jan that book has sits try to read$_{inf}$
‘that Jan has been trying to read that book.’

Given that the examples in (78) must be analyzed as extraposition constructions (with the extraposed clause underlined), we must leave the option open that the examples in (76) are not instances of verb clustering but remnant extraposition constructions.

(78) a. dat Jan *gaat proberen* dat boek te lezen. [extraposition]
that Jan goes try that book to read$_{inf}$
‘that Jan is going to try to read that book.’
b. dat Jan *zit te proberen* dat boek te lezen. [extraposition]
that Jan sits to try that book to read$_{inf}$
‘that Jan is trying to read that book.’

Nevertheless, in the absence of solid reasons for claiming that the examples in (76) cannot be analyzed as a verb-clustering construction, we will provisionally assume that it is in fact a possible analysis (besides the remnant extraposition analysis).

The examples in (79) show that the addition of a (semi-)aspectual verb on top of subject raising constructions such as (56b) is impossible. It may be the case that the infelicitousness of these examples is related to the earlier noted fact that subject raising verbs do not readily appear as non-finite verbs, but it seems equally plausible to assume that it is due to the evidential modality expressed by *schijnen*: the infinitival clause simply does not satisfy the semantic selection restriction of (semi-)aspectual verbs that their complements refer to an activity controlled by the subject of the clause (cf. Section 6.3.1, sub II).

(79) a. *dat Jan dat boek *gaat schijnen te lezen*. [Asp$_3$–SR$_2$–Main$_1$]
that Jan that book goes seem to read$_{inf}$
b. *dat Jan dat boek *zit te schijnen te lezen*. [Semi-Asp$_3$–SR$_2$–Main$_1$]
that Jan that book sits to seem to read$_{inf}$

The examples in (80) show that the addition of a (semi-)aspectual verb on top of modal structures such as (57a) also gives rise to degraded results. For completeness’ sake, it should be noted that examples such as (80a) do occasionally occur on the internet, but we have the impression that these are just erroneous forms that are used instead of the fully acceptable form *moet gaan lezen* ‘must go read’. The question as to whether this suggestion is indeed on the right track we will leave to future research. It is again plausible to assume that the unacceptability of the examples in (80) is due to the fact that the modal phrases do not satisfy the semantic selection restriction of (semi-)aspectual verbs that their complement refer to an activity controlled by an agent.

(80) a. *dat Jan dat boek *gaat moeten lezen*. [Asp$_3$–Modal$_2$–Main$_1$]
that Jan that book goes must read$_{inf}$
b. *dat Jan dat boek *zit te moeten lezen*. [Semi-Asp$_3$–Modal$_2$–Main$_1$]
that Jan that book sits to must read$_{inf}$

The results are different for the AcI-constructions with the perception verb *zien* and the causative verb *laten*. The examples in (81) show that it is possible to add the aspectual verb *gaan* to the examples in (57b&c). We added the particles *nog* and *wel* to facilitate the intended posterior-to-speech-time reading; without these particles some speakers may have problems with this construction.

(81) a. dat Jan haar dat boek nog wel *gaat zien lezen*. [Asp$_3$–Perc$_2$–Main$_1$]
that Jan her that book yet AFF goes see read$_{inf}$
‘that Jan will eventually see her read that book.’
b. dat Jan haar dat boek *gaat laten lezen*. [Asp$_3$–Caus$_2$–Main$_1$]
that Jan her that book goes make read$_{inf}$
‘that Jan is going to make/let her read that book.’

The examples in (82), on the other hand, show that it is not possible to add the semi-aspectual verb *zitten* to the examples in (57b&c).

(82) a. *dat Jan haar dat boek *zit te zien lezen*. [Semi-asp$_3$–Perc$_2$–Main$_1$]
that Jan her that book sits to see read$_{inf}$
b. *dat Jan haar dat boek zit te *laten lezen*. [Semi-asp$_3$–Caus$_2$–Main$_1$]
that Jan her that book sits to let read$_{inf}$

The acceptability of the examples in (81) strongly suggests that the unacceptability of the examples in (82) is not due to some syntactic constraint, given that the semi-aspectual verb *zitten* can normally be embedded under aspectual *gaan*. It is therefore more likely that the unacceptability of (82) is due to some semantic incompatibility between the semi-aspectual verbs and the verbs *zien* and *laten* This might be independently supported for the verb *zien* by the contrast between the two examples in (83), in which *zien* takes a nominal object.

(83) a. Welke film ga je zien?
which movie go you see
‘Which movie are you going to see/watch?’
b. *Welke film zit je te zien?
which movie sit you to see
Intended reading: ‘Which movie are you watching?’

The acceptability contrast indicated in (83) is confirmed by a Google search (7/16/2013): whereas the (colloquial) question in (83a) occurs more than twenty times on the internet, the question in (83b) does not occur at all. We cannot provide similar evidence for causative *laten* as this verb does not allow nominal complements.

6. Semi-aspectual and Aspectual verbs II: Main$_3$–Asp$_2$-Main$_1$

Generally speaking, it seems possible to add a (semi-)aspectual verb associated with the structurally lower main verbs of the examples in (56) and (57) from the introduction to this subsection (p.1069), although we will see that there are certain complications which deserve attention. The examples in (84) show that whereas the addition of an aspectual verb such as *gaan* is fully acceptable, the addition of a semi-aspectual verb such as *zitten* gives rise to a degraded result.

(84) a. dat Jan dat boek *probeert te gaan lezen*. [Control$_3$–Asp$_2$–Main$_1$]
that Jan that book tries to go read$_{inf}$
‘that Jan is trying to start to read that book.’
b. $dat Jan dat boek *probeert te zitten lezen*. [Control$_3$–Semi-asp$_2$–Main$_1$]
that Jan that book tries to sit read$_{inf}$
Compare: ‘that Jan is trying to be reading that book.’

The acceptability of example (84a) strongly suggests that the unacceptability of example (84b) cannot be due to some syntactic constraint, given that semi-aspectual verbs like *zitten* can normally be embedded under aspectual verbs like *gaan*, but that there must be some semantic/pragmatic reason for it. This is quite plausible: the fact that semi-aspectual *zitten* locates the eventuality expressed by the infinitival clause *dat boek lezen* ‘to read that book’ in a temporal interval that *includes* speech time clashes with the fact that the verb *proberen* triggers an °irrealis reading, that is, locates the eventuality expressed by the infinitival clause *after* speech time.

The acceptability of the examples in (85) show that it is easily possible to add a (semi-)aspectual verb associated with the structurally lower main verbs in subject raising contexts. Nothing special needs to be said here.

(85) a. dat Jan dat boek *schijnt te gaan lezen*. [SR$_3$–Asp$_2$–Main$_1$]
that Jan that book seems to go read$_{inf}$
‘that Jan seems to be going to read that book.’
b. dat Jan dat boek *schijnt te zitten* (*te*) *lezen*. [SR$_3$–Semi-asp$_2$–Main$_1$]
that Jan that book seems to sit to read$_{inf}$
‘that Jan seems to be reading that book.’

The examples in (86) show that the (semi-)aspectual verbs may also occur embedded under the modal verb *moeten*. The translations suggest that the modal can be interpreted either as an epistemic or as a directed deontic modal, but judgments are not very sharp.

(86) a. dat Jan dat boek *moet gaan lezen*. [Modal$_3$–Asp$_2$–Main$_1$]
that Jan that book must go read$_{inf}$
‘that Jan must go reading that book.’
b. dat Jan dat boek *moet zitten lezen*. [Modal$_3$–Semi-asp$_2$–Main$_1$]
that Jan that book must sit read$_{inf}$
‘that Jan must be reading that book.’

That the epistemic reading is possible seems clear and it can also be supported by the fact that it is the most conspicuous reading of the examples in (87), in which the (semi-)aspectual verb is preceded by an additional perfect auxiliary. The representation of the clusters in (87) is: Modal$_4$–Perf$_3$–AsP$_2$/Semi-asp$_2$–Main$_1$

(87) a. dat Jan dat boek moet zijn gaan lezen.
that Jan that book must be go read$_{inf}$
‘that Jan must have started to read that book.’
b. dat Jan dat boek moet hebben zitten lezen.
that Jan that book must have sit read$_{inf}$
‘that Jan must have been reading that book.’

The deontic reading of the examples in (86) seems less prominent, which is perhaps also suggested by the fact that the examples in (88), in which the modal verb is preceded by a perfect auxiliary, seem less acceptable. We leave the status of clusters of the type Perf$_4$–Modal$_3$–Asp$_2$/Semi-asp$_2$–Main$_1$ as an issue for future research.

(88) a. $^{?}$dat Jan dat boek heeft moeten gaan lezen.
that Jan that book has must go read$_{inf}$
b. $^{?}$dat Jan dat boek heeft moeten zitten lezen.
that Jan that book has must sit read$_{inf}$

The acceptability of the verb clusters in (89) with the perception verb *zien* ‘to see’ seems to depend on tense marking. Example (89a) is somewhat odd which may be related to the fact that AcI-constructions with perception verbs normally express a notion of simultaneity; examples such as *dat Jan haar dat boek ziet lezen* ‘that Jan sees her read that book’ express that the eventuality of seeing is simultaneous with the eventuality expressed by the embedded bare infinitival. The problem with (89a) is due to the fact that while the simple present on the verb *zien* locates these eventualities *at* speech time, the aspectual verb *gaan* locates the eventuality expressed by the infinitival clause *after* speech time. The past-tense example in (89b′) seems more acceptable; it expresses that Jan witnessed the beginning of the eventuality of her reading the book.

(89) a. $^{\$}$dat Jan haar dat boek *ziet gaan lezen.* [Perc$_3$–Asp$_2$–Main$_1$]
that Jan her that book sees go read$_{inf}$
‘that Jan sees her start reading that book.’
b. dat Jan haar dat boek *zag gaan lezen.* [Perc$_3$–Asp$_2$–Main$_1$]
that Jan her that book saw go read$_{inf}$
‘that Jan saw her start reading that book.’

The fact that examples (90a&b) are both acceptable shows that the semi-aspectual verb *zitten* does not raise similar problems as *gaan*, which is consistent with the fact that *zitten* locates the eventuality expressed by the bare infinitival in a temporal interval that *includes* speech time.

(90) a. dat Jan haar dat boek *ziet zitten lezen.* [Perc$_3$–Semi-asp$_2$–Main$_1$]
that Jan her that book sees sit read$_{inf}$
‘that Jan sees her reading that book.’
b. dat Jan haar dat boek *zag zitten lezen.* [Perc$_3$–Semi-asp$_2$–Main$_1$]
that Jan her that book saw sit read$_{inf}$
‘that Jan saw her reading that book.’

For completeness' sake, note that the account of the markedness of example (89a) given above receives further support from the acceptability of present-tense ACI-constructions with an illusory reading in (91), which were briefly discussed at the end of Section 5.2.3.3, sub I; in such constructions, simultaneity is not implied and the contradiction does not arise.

(91) Ik zie haar dat boek nog wel een keer gaan lezen.
I see her that book PRT PRT a time go read
'I envisage that she'll eventually start reading that book.'

The examples in (92) with *laten* 'to make/let' are also acceptable. However, the fact that the aspectual verb *gaan* locates the eventuality *after* speech time in the non-actualized part of the present-tense interval favors the causative interpretation of (92a). The fact that the semi-aspectual verbs locate the eventuality in a temporal interval that *includes* speech time makes the permissive reading of (92b) the most plausible one.

(92) a. dat Jan haar dat boek *laat* *gaan* *lezen*. [Caus$_3$–Asp$_2$–Main$_1$]
that Jan her that book makes go read$_{inf}$
'that Jan makes her start reading that book.'
b. dat Jan haar dat boek *laat* *zitten* *lezen*. [Caus$_3$–Semi-asp$_2$–Main$_1$]
that Jan her that book lets sit read
'that Jan lets her read that book.'

To conclude, we want to note that some speakers find AcI-constructions with (semi-)aspectual verbs somewhat harder to get with transitive than with intransitive verbs. This also seems reflected by our Google searches; it is relatively easy to find examples with intransitive verbs like *werken* 'to work' or *slapen* 'to sleep', but more difficult to find examples with transitive verbs like *lezen* 'to read'.

7. Conclusion

The subsections above have shown that there do not seem to be many syntactic restrictions on the formation of larger clusters with two main verbs. The superior main verbs in the verb clusters in (56) and (57) from the introduction to this subsection (p.1069), which are given in abstract form in the leftmost column of Table 2, seem to allow their complements to contain all the non-main verb types which we discussed, and which are mentioned in the top row of Table 2. This is indicated in the cells by means of the numeral *1*, which indicates that the auxiliary in the header of the relevant column can be associated with the embedded main verb (= Main$_1$): in general we were able to account for the less felicitous cases by appealing to semantics and/or pragmatics, which we indicated in the table with a number sign before the numeral 1. In as far as there are syntactic restrictions, these seem to involve the superior main verbs: see the shaded cells without the numeral 2. First, passive auxiliaries are special in that they can only be associated with lower main verbs; we suggested that this is directly related to verb clustering (in a way that perhaps still has to be discovered). Second, subject raising verbs are special in that they cannot normally occur in a non-finite form; this may reflect some deeper syntactic or morphological property of verb clusters, but we have seen that there are reasons to attribute this to more accidental semantics/pragmatics properties of the constructions involved; we leave this open for future research. There are a number of other cases that seem infelicitous, but these seem to have a semantic/pragmatic origin and are therefore marked with a hash sign before the numeral 2. The passive AcI-constructions that we indicated to be marked may be disfavored by some speaker due to syntactic blocking;

Table 2: Verb clusters with two main verbs and one non-main verb

	perfect	passive	aspectual	semi-aspectual
CONTROL$_2$-MAIN$_1$	2/1	1	2/1	2/$^\#$1
SR$_2$–MAIN$_1$	1	1	1	1
MODAL$_2$–MAIN$_1$	2/1	1	1/$^\#$2	1/$^\#$2
PERC$_2$–MAIN$_1$	2/$^\#$1	1 (MARKED)	2/1	1/$^\#$2
CAUS$_2$–MAIN$_1$	2/$^\#$1	1 (MARKED)	2/1	1/$^\#$2

The conclusion that the restrictions related to the embedded main verb are not always syntactic in nature is important because it is often claimed that the superior main verbs impose lexically encoded, syntactic selection restrictions on the substantive verbal contents of their infinitival complements. Our survey above does not corroborate this point of view; the formal restrictions imposed by these verbs are restricted to the morphological form (*te*-infinitive or bare infinitive) of the verbs they °govern. All other restrictions seem to be semantic/pragmatic in nature.

D. Larger verb clusters with three main verbs

This subsection investigates the hierarchical structures of verb clusters with three main verbs by extending the structures in (47) and (48) from Subsection A, which are repeated here as (93) and (94), with one main verb that selects a transparent infinitive. We begin with constructions containing an additional subject raising verb since such verbs seem to be the most permissive.

(93) a. dat Jan dat boek *probeert te lezen*. [Control$_2$-Main$_1$]
that Jan that book tries to read$_{inf}$
'that Jan is trying to read that book.'
b. dat Jan dat boek *schijnt te lezen*. [SR$_2$–Main$_1$]
that Jan that book seems to read$_{inf}$
'that Jan seems to be reading that book.'

(94) a. dat Jan dat boek *moet lezen*. [Modal$_2$–Main$_1$]
that Jan that book must read$_{inf}$
'that Jan must/is obliged to read that book.'
b. dat Jan haar dat boek *ziet lezen*. [Perc$_2$–Main$_1$]
that Jan her that book sees read$_{inf}$
'that Jan sees her read that book.'
c. dat Jan haar dat boek *laat lezen*. [Caus$_2$–Main$_1$]
that Jan her that book makes read$_{inf}$
'that Jan makes/lets her read that book.'

1. Clusters of the type SR$_3$-V$_2$–Main$_1$

Clusters with three main verbs, in which the highest verb is a subject raising verb like *schijnen* 'to seem' seem to exhibit few restrictions, the main one being that stacking of subject raising verbs, as in (95), is prohibited.

(95) a. $^{\$}$dat Jan dat boek *lijkt* *te schijnen* *te lezen.* [SR$_3$–SR$_2$–Main$_1$]
that Jan that book appears to seem to read$_{inf}$
b. $^{\$}$dat Jan dat boek *blijkt* *te schijnen* *te lezen.* [SR$_3$–SR$_2$–Main$_1$]
that Jan that book turns.out to seem to read$_{inf}$

We did not mark these examples with an asterisk because it is not *a priori* clear whether their unacceptability is due to a syntactic restriction. One argument in favor is that the subject raising verbs *lijken* 'to appear', *schijnen* 'to seem', and *blijken* 'to turn out' seem to resist appearing as non-finite forms more generally; see the discussion in Subsection C. It is also likely, however, that the examples in (95) are excluded because the raising verbs express incompatible or even contradictory evidential information; see Section 5.2.2.2, sub II, for a discussion of the evidential meanings of these verbs.

Example (96) shows that *schijnen* can take a projection of a control verb as its complement. Note that there are two options: one in which *proberen* takes a transparent *te*-infinitival, represented in (96a), and one in which it takes a semi-transparent *te*-infinitival, represented in (96b).

(96) a. dat Jan dat boek *schijnt te proberen te lezen.* [SR$_3$–Control$_2$–Main$_1$]
that Jan that book seems to try to read
'that Jan seems to try to read that book.'
b. dat Jan <dat boek> *schijnt te proberen* <dat boek> te lezen. [SR$_2$–Control$_1$]
that Jan that book seems to try to read
'that Jan seems to try to read that book.'

The examples in (96) show that the linear string *dat Jan dat boek schijnt te proberen te lezen* can in principle receive two analyses: one analysis in which the *te*-infinitive is part of the verb cluster, and one with remnant extraposition of the infinitival complement clause of *proberen*. It raises the question as to whether they are both available. This can be checked by taking into consideration their perfect-tense counterparts in (97a&b): examples (97a) exhibits the IPP-effect, which requires that the *te*-infinitive be part of the verb cluster; example (97b) does not exhibit this effect, which shows that we are dealing with remnant extraposition. Although these examples are somewhat marked due to their complexity, speakers tend to accept them both. For completeness' sake, we added the fully acceptable extraposition example in (97c): that this example is preferred to the other two may be due to (i) the fact that it has a smaller verb cluster than (97a), and (ii) the fact that it differs from (97b) in that it does not involve the marked option of leftward movement of the object from the extraposed clause. The verb clusters in these examples are given in italics.

(97) a. $^{?}$dat Jan dat boek *schijnt te hebben proberen te lezen*. [verb clustering]
that Jan that book seems to have try to read
'that Jan seems to have tried to read that book.'
b. $^{?}$dat Jan dat boek *schijnt te hebben geprobeerd* te lezen. [remnant extrap.]
that Jan that book seems to have tried to read
'that Jan seems to have tried to read that book.'
c. dat Jan *schijnt te hebben geprobeerd* dat boek te lezen. [extraposition]
that Jan seems to have tried that book to read
'that Jan seems to have tried to read that book.'

Despite the fact that (97a&b) are judged as marked, we provisionally conclude from the discussion above that all three options occur. The examples in (98) show that it is easily possible to embed the constructions with modal, perception and causative verbs in (94) under the subject raising verb *schijnen*.

(98) a. dat Jan dat boek *schijnt te moeten lezen*. [SR$_3$–Modal$_2$–Main$_1$]
that Jan that book seems to must read$_{inf}$
'that Jan seems to be obliged to read that book.'
b. dat Jan haar dat boek *schijnt te zien lezen*. [SR$_3$–Perc$_2$–Main$_1$]
that Jan her that book seems to see read$_{inf}$
'that Jan seems to see her read that book.'
c. dat Jan haar dat boek *schijnt te laten lezen*. [SR$_3$–Caus$_2$–Main$_1$]
that Jan her that book seems to make/let read$_{inf}$
'that Jan seems to make/let her read that book.'

We conclude from the discussion above that subject raising verbs do not impose any syntactic restrictions on their infinitival complement; the fact that stacking of subject raising verbs, as in (95), is impossible may have a semantic reason.

2. Clusters of the type Control$_3$-V$_2$–Main$_1$

It seems possible to stack control verbs, although the resulting structures may be somewhat "heavy" semantically. An example is constructed in (99a) by adding the verb *weigeren* 'to refuse' on top of the verbs in (93a). The IPP-effect in (99b) shows that the verb *weigeren* can indeed participate in verb clustering.

(99) a. dat Jan dat boek *weigert te proberen te lezen*.
that Jan that book refuses to try to read$_{inf}$
'that Jan refuses to try to read that book.'
b. dat Jan dat boek *heeft weigeren te proberen te lezen*.
that Jan that book has refuse to try to read
'that Jan has refused to try to read that book.'

It seems harder to establish, however, that *weigeren* and *proberen* together can be verb-clustering verbs in the same structure at the same time, that is, that the *te*-infinitive *te lezen* can indeed be part of the verb clusters in (99). This is because we can also analyze these examples as cases in which *proberen* takes a semi-transparent infinitival clause, that is, in which it is involved in remnant extraposition; cf. the examples in (100) with leftward movement of the direct object of the extraposed complement clause of *proberen*.

(100) a. dat Jan <dat boek> *weigert te proberen* <dat boek> te lezen.
that Jan that book refuses to try to read$_{inf}$
‘that Jan refuses to try to read that book.’
b. dat Jan <dat boek> *heeft weigeren te proberen* <dat boek> te lezen.
that Jan that book has refuse to try to read
‘that Jan has refused to try to read that book.’

Unfortunately, we cannot appeal to the IPP-effect to show that both analyses are available due to the fact that the infinitival complement of *weigeren* ‘to refuse’ cannot be used in a perfect-tense construction: cf. *Jan weigert te zingen* ‘Jan refuses to sing’ versus $^{\$}$*Jan weigert te hebben gezongen* ‘Jan refuses to have sung’. However, in the absence of evidence that examples (99) cannot be analyzed as verb-clustering constructions, we will provisionally assume that this is in fact a possible analysis (besides the remnant extraposition analysis). There are in fact more complexities involved in the analysis of example (99b). For example, the infinitival complement of *weigeren* need not be transparent but may also be semi-transparent, as is unambiguously shown by the lack of the IPP-effect in the examples in (101a&b). In these cases it is again not clear whether the verb *proberen* selects a transparent or a semi-transparent *te*-infinitival clause. That the latter is at least possible is clear from the fact that the direct object may also follow the verb *proberen*; this is shown in (101c), in which the complement clause of *proberen* is underlined.

(101) a. dat Jan dat boek *heeft geweigerd* te proberen te lezen. [remnant extrap.]
that Jan that book has refused to try to read
‘that Jan has refused to try to read that book.’
b. dat Jan *heeft geweigerd* dat boek te proberen te lezen. [extraposition]
that Jan has refused that book to try to read
‘that Jan has refused to try to read that book.’
c. dat Jan *heeft geweigerd* te proberen dat boek te lezen.
that Jan has refused to try that book to read
‘that Jan has refused to try to read that book.’

The discussion above has shown that example (99a) is at least four ways ambiguous with respect to verb clustering and remnant extraposition: the verbs *weigeren* and *proberen* can both trigger verb clustering, they can both be involved in remnant extraposition, or they can have different values in this respect. The choice between verb clustering or remnant extraposition can be decided by the IPP-effect in the case of *weigeren*, but not in the case of *proberen*, as the latter is not selected by a perfect auxiliary. The postulate of structural ambiguity evoked by the verb *proberen* is therefore based on the fact that we do not have any compelling reason for assuming that it is not there. For completeness’ sake, we want to note that acceptability judgments on the perfect-tense examples in (99) to (101) are not uniform: the (presumed) uniform verb-clustering order in (99b) and the uniform extraposition order in (101c) seem to be best, whereas all other cases are judged to have some intermediate status.

Example (102) shows that *proberen* ‘to try’ cannot embed a subject raising construction with *schijnen*. We mark this example with the dollar sign, because it is not clear whether we are dealing with a syntactic restriction. The reason may again be due to the fact that such control verbs trigger an °irrealis reading on their infinitival complements in the sense that they assert something about a potential future event. The unacceptability of (102) may therefore be due to the fact that the verb *schijnen* does not denote an event, but expresses that the speaker has evidence of some kind for assuming that the proposition embedded under it is true.

(102) $^{\$}$dat Jan dat boek probeert te *schijnen* *te lezen*. [Control$_3$–SR$_2$–Main$_1$]
that Jan that book tries to seem to read$_{inf}$

The examples in (103) show that embedding the constructions with modal, perception and causative verbs in (48) under *proberen* gives rise to varying results. Because examples such as *dat Jan haar probeert te zien optreden* ‘that Jan tries to see her perform’ seem fully acceptable, we will assume that verb clusters of the form in (103b&c) are syntactically well-formed, and concentrate below on the infelicitous example (103a).

(103) a. $^{\$}$dat Jan dat boek *probeert te moeten lezen*. [Control$_3$–Modal$_2$-Main$_1$]
that Jan that book tries to must read$_{inf}$
Compare: ‘that Jan tries to have to read that book.’
b. $^{?}$dat Jan haar dat boek *probeert te zien lezen*. [Control$_3$–Perc$_2$-Main$_1$]
that Jan her that book tries to see read$_{inf}$
‘that Jan tries to see her read that book.’
c. dat Jan haar dat boek *probeert te laten lezen*. [Control$_3$–Caus$_2$-Main$_1$]
that Jan her that book tries to make/let read$_{inf}$
‘that Jan tries make/let her read that book.’

The unacceptability of the modal example in (103a) may again be due to the fact that such control verbs trigger an irrealis reading on their infinitival complement, but now we have to consider two different options: one in which the modal has an epistemic “necessity” reading and one in which it has a deontic “obligation” reading. Providing an account for the first case seems relatively simple given that the infinitival modal clause *dat boek te moeten lezen* is incompatible with an irrealis interpretation: the modal *moeten* does not denote an eventuality but expresses that the proposition embedded under it will occur in the non-actualized part of the present tense domain. The fact that the deontic “obligation” reading is also impossible in (103a) may be due because it is simply implausible in this context. That there is no general ban on the embedding of infinitival deontic modal clauses under *proberen* is clear from the contrast between the two examples in (104): whereas it is plausible for Jan to try to obtain permission to come, it seems less plausible for him to try to obtain an obligation to come. The fact that (104a) is fully acceptable shows that verb clusters of the type Control$_3$–Modal$_2$-Main$_1$ are possible.

(104) a. dat Jan probeert te mogen komen. [Control$_3$–Modal$_2$-Main$_1$]
that Jan tries to be.allowed.to come
‘that Jan tries to be allowed to come.’
b. $^{\$}$dat Jan probeert te moeten komen. [Control$_3$–Modal$_2$-Main$_1$]
that Jan tries to must come
Compare: ‘that Jan tries to have to come.’

We conclude from the discussion above that control verbs do not impose any syntactic restrictions on their infinitival complement in verb-clustering contexts; the fact that infinitival complements with an evidential or epistemic modal reading are impossible is due to the fact that they do not satisfy the semantic selection restriction that infinitival complement clauses of control verbs like *proberen* impose an irrealis interpretation on their infinitival complement.

3. Clusters of the type Modal$_3$-V$_2$–Main$_1$

The examples in (105) show that modal verbs like *moeten* ‘must/be obliged’ can take an infinitival complement containing the control verb *proberen*, but cannot take infinitival complements containing the subject raising verb *schijnen*. The unacceptability of (105b) may be due to the fact that subject raising verbs like *schijnen* resist appearing as non-finite forms more generally but may also point into the direction that their evidential meaning is semantically incompatible with the meaning of modal verbs like *moeten*. We will leave this issue open here.

(105) a. dat Jan dat boek *moet proberen te lezen.* [Modal$_3$–Control$_2$-Main$_1$]
that Jan that book must try to read$_{inf}$
‘that Jan must try to read that book.’
b. $^{\$}$dat Jan dat boek *moet schijnen te lezen*. [Modal$_3$–SR$_2$–Main$_1$]
that Jan that book must seem to read$_{inf}$

The examples in (106) show that modal verbs of the type *moeten* ‘must’, *kunnen* ‘can’ and *willen* ‘want’ can co-occur in various kinds of combinations: in (106a) we see two dispositional modal verbs, in (106b) an epistemic/dispositional and a dispositional modal verb, in (106c) an epistemic and a non-directed deontic verb, and even more combinations are possible.

(106) a. dat Jan die sonate morgen *wil kunnen spelen*. [M$_3$–M$_2$–Main$_1$]
that Jan that sonata tomorrow wants can play
‘that Jan wants to be able to play that sonata tomorrow.’
b. dat Jan dat probleem snel *moet kunnen oplossen*. [M$_3$–M$_2$–Main$_1$]
that Jan that problem quick must can prt.-solve
‘that Jan must be able to solve that problem quickly.’
c. dat het probleem snel opgelost *moet kunnen worden*. [M$_3$–M$_2$–Main$_1$]
that the problem quick prt.-solved must can be
‘that it must be possible to solve the problem quickly.’

The examples in (107) show that modal verbs can also be combined felicitously with perception and causative/permission verbs.

(107) a. dat Jan haar dat boek *kan zien lezen.* [Modal$_3$–Perc$_2$–Main$_1$]
that Jan her that book can see read$_{inf}$
‘that Jan can see her read that book.’
b. dat Jan haar dat boek *moet laten lezen.* [Modal$_3$–Caus$_2$–Main$_1$]
that Jan her that book must make read$_{inf}$
‘that Jan must make/let her read that book.’

4. Clusters of the type Perception$_3$-V$_2$–Main$_1$

The examples in (108) show that perception verbs like *zien* ‘to see’ can take an infinitival complement containing the control verb *proberen* as its complement, but not infinitival complements containing the subject raising verb *schijnen*. The unacceptability of (108b) may be due to the fact that subject raising verbs such as *schijnen* resist appearing as non-finite forms more generally but may also point into the direction that they are semantically incompatible with perception verbs given that they do not refer to an eventuality that can be directly observed by means of the senses (here: vision).

(108) a. dat Jan haar een fiets *ziet proberen te stelen.* [Perc$_3$–Control$_2$-Main$_1$]
that Jan her a bicycle sees try to read$_{inf}$
‘that Jan sees her try to steal a bicycle.’
b. $^{\$}$dat Jan haar een fiets *ziet schijnen te stelen.* [Perc$_3$–SR$_2$-Main$_1$]
that Jan her a bicycle sees seem to steal$_{inf}$

The examples in (109) show that adding a perception verb to the constructions with modal, perception and causative verbs in (48) gives rise to varying results. Example (109a) is unacceptable, and this may have a similar reason as the unacceptability of (108b): bare infinitival complements with a modal verb do not refer to eventualities that can be directly observed by means of the senses. The markedness of examples like (109b&c), which are normally taken to be grammatical (cf. Kroch and Santorini 1991), does not seem syntactic in nature, but is probably due to the computational complexity of these examples: in the English renderings of these examples it is very easy to identify the relevant verb-subject pairs on the basis of linear order because the subject is always left-adjacent to the verb it belongs to, but in Dutch the identification requires for each pair that various elements be skipped. The difficulty of establishing the relevant pairs (even in reading) suggests that there might be a psycholinguistic reason for the markedness of Dutch examples like (109b&c).

(109) a. $^{\$}$dat Jan haar dat boek *zag moeten lezen.*
that Jan her that book saw must read
Compare: ‘that Jan saw her be obliged to read that book.’
b. $^{?}$dat Jan Marie de merel *zag horen zingen.*
that Jan Marie the blackbird saw hear leave
‘that Jan saw Marie hear the blackbird sing.’
c. $^{?}$dat Jan Marie haar hond *zag laten zwemmen.*
that Jan Marie her dog saw make swim
‘that Jan saw Marie make/let her dog swim.’

5. Clusters of the type Causative$_3$-V$_2$–Main$_1$

The examples in (110) show once again that causative *laten* ‘to make/let’ can take an infinitival complement with the control verb *proberen* as its complement, but that infinitival complements with a subject raising verb such as *schijnen* are impossible. The unacceptability of (110b) may be due to the fact that subject raising verbs like *schijnen* resist appearing as non-finite forms more generally but may also point into the direction that they are semantically incompatible with causative *laten* due to the fact that they do not denote activities.

(110) a. dat Jan Marie dat boek *laat proberen te lezen.* [Caus$_3$–Control$_2$-Main$_1$]
that Jan Marie that book makes try to read$_{inf}$
‘that Jan lets Marie try to read that book.’
b. $^{\$}$dat Jan Marie dat boek *laat schijnen te lezen.* [Caus$_3$–SR$_2$-Main$_1$]
that Jan Marie that book makes seem to read$_{inf}$

The examples in (111) show that adding the causative verb to the constructions with modal, perception and causative verbs in (94) gives rise to varying results. Example (111a) is unacceptable and this may again have a semantic reason: epistemic modal verbs do not refer to an eventuality, and the use of deontic modals simply seem to give rise to implausible scenarios. Examples such as (111b) are perhaps somewhat marked but we do find examples of this type (often with one or more omitted lower subjects) on the internet: cf. *Die twee jongens die ze laten horen zingen* with the intended reading “those two boys that they make (us) hear sing”. Examples such as (111c) are again difficult to interpret, although we found surprisingly many cases of this sort on the internet (mainly with the two lower subjects omitted) with infinitives like *registreren* ‘to register’, *vastleggen* ‘to record’, and *onderzoeken* ‘to investigate’ by searching for the string [*laten laten*]: cf. *Die buurgemeente heeft in 2007 laten laten onderzoeken hoe ...* (approximately: In 2007 the local authority has made someone make someone investigate how ...’).

(111) a. $^{\$}$dat Jan haar dat boek *laat moeten lezen.*
that Jan her that book makes must read
Compare: ‘that Jan lets/makes her be obliged to read that book.’
b. $^{?}$dat Jan Marie de merel *laat horen zingen.*
that Jan Marie the blackbird lets hear sing leave
‘that Jan makes Marie hear the blackbird sing.’
c. $^{??}$dat Jan Marie haar hond *laat laten zwemmen.*
that Jan Marie her dog make make swim
‘that Jan makes Marie make/let her dog swim.’

6. Summary

Table 3 summarizes the findings of this subsection. Virtually all verb clusters in the examples in (93) and (94) from the introduction to this subsection (p.1083) can be extended by means of an additional main verb, although clusters with embedded subject raising verbs are exceptional. The exceptional status of raising verbs may be due to a restriction that disfavors these verbs to appear as non-finite forms (although they do occur in more formal texts), but we have seen that there are also reasons for assuming that semantic restrictions are at play; we leave it to future research to investigate this option. Modal verbs are exceptional in that they cannot be embedded under perception and causative verbs; we have seen that there are again reasons for assuming that this is due to the fact that perception and causative verbs require that their infinitival complement refers to an eventuality. Clusters marked with one or more question marks seem grammatical but are not very felicitous, and we have suggested that this may be due to the computational complexity that they involve.

Table 3: Verb clusters with three main verbs

	CONTROL$_3$	SR$_3$	MODAL$_3$	PERC$_3$	CAUS$_3$
CONTROL$_2$-MAIN$_1$	+	+	+	+	+
SR$_2$–MAIN$_1$	—	—	—	—	—
MODAL$_2$–MAIN$_1$	+ (DEONTIC)	+	+	—	—
PERC$_2$–MAIN$_1$	+	+	+	?	?
CAUS$_2$–MAIN$_1$	+	+	+	?	??

E. Conclusion

This section has investigated the restrictions on the hierarchical order of verbs in verb clusters. The main issue is: What types of verbal projections can be selected by what types of verbs? The discussion has shown that there are restrictions on what counts as acceptable verb combinations. It seems, however, that these restrictions are not of a syntactic, but of a semantic/pragmatic nature. For example, we have seen that the fact that subject raising verbs like *schijnen* cannot normally be embedded under other verbs may be related to the fact that such raising verbs do not denote eventualities but express evidential modality. We have seen that other restrictions may be of a pragmatic nature, or may even be related to computational complexity.

7.3. The linear order of verbs in verb clusters

Section 7.2 has discussed the hierarchical order of verbs in verb clusters, and has shown that hierarchical order does not correspond in a one-to-one fashion to linear order. For example, verb clustering may linearize the hierarchical structure in (112a) in various ways, as indicated in the (b)-examples.

(112) a. Jan [moet [hebben [de film gezien]]].
b. dat Jan die film *moet hebben gezien*.
b′. dat Jan die film *moet gezien hebben*.
b″. dat Jan die film *gezien moet hebben*.

In order to be able to discuss in a satisfactory way the linearization of verb clusters, it is important to determine which strings of verbs do (not) constitute instantiations of such clusters; here we assume that the reader is familiar with the discussion of this issue in Section 7.1. That section also suggested that if we put aside those strings of verbs that do not make up verb clusters, the linearization of standard Dutch verb clusters can be described by means of the three generalizations in (113).

(113) a. **Generalization I**: Past/passive participles either precede or follow their governing auxiliary.
b. **Generalization II**: *Te*-infinitives follow their governing verb.
c. **Generalization III**: Bare infinitives follow their governing verb (in clusters consisting of three or more verbs).

The present section investigates the linearization of verb clusters in more detail by taking these generalizations as its point of departure, and shows that they indeed provide a descriptively adequate account of the attested word order patterns found in standard Dutch, although we will also point out a number of complications.

Subsection I starts with a description of clusters of two verbs. Subsection II continues with clusters of three (and more) verbs. The literature on verb clusters normally focuses on verb clusters including a finite verb, that is, clusters in finite embedded clauses such as (114a), but we will also look at the counterparts of such clusters in (extraposed) infinitival clauses such as (114b).

(114) a. Marie denkt [dat Jan dat boek *probeert te lezen*].
Marie believes that Jan that book tries to read
'Marie thinks that Jan is trying to read that book.'
b. Marie verzocht Jan$_{i}$ [om PRO$_{i}$ dat boek *te proberen te lezen*].
Marie requested Jan COMP that book to try to read
'Marie requested Jan to try to read that book.'

Furthermore, we will diverge from general practice by also discussing the word order of verb clusters in main clauses such as (115), that is, clauses in which the finite verb is not part of the cluster but occupies the second position of the clause. Of course, this only makes sense in structures with more than two verbs. Although it might be defensible to claim that (115) involves a clause-final cluster of no more than two verbs, we will discuss such examples in the discussion of verb clusters of three verbs for practical reasons.

(115) Jan *wil* dat boek *proberen te lezen*.
Jan wants that book try to read
'Jan wants to try to read that book.'

For an introduction to the notational conventions that will be used in the discussion in the following sections, we refer the reader to Section 7.2, sub I.

I. Clusters of two verbs

This section discusses the linearization of verb clusters of two verbs. In order to be able to evaluate the generalizations in (113), we will divide such clusters on the basis of the morphological form of the embedded main verb, as in (116). The numeral indices express the hierarchical relation between the verbs in question: V$_{i+1}$–V$_{i}$ indicates that V$_{i+1}$ is °superior to V$_{i}$, due to the fact that the former verb selects the projection of the latter verb as its complement.

(116) • Verb clusters of two verbs
a. Aux$_{2}$ + past/passive participle$_{1}$
b. V$_{2}$ + *te*-infinitive$_{1}$
c. V$_{2}$ + bare infinitive$_{1}$

A. Aux$_2$ + Participle$_1$: perfect-tense and passive constructions

There are two types of verb clusters of the type Aux$_2$ + Participle$_1$, one with a perfect and one with a passive auxiliary. These will be discussed in separate subsections.

1. Perfect-tense constructions

The examples in (117) show that past participles may either precede or follow the finite perfect auxiliary. When we consider the regional spread of the two word orders, it seems that the order Aux$_2$–Part$_1$ is only found in a restricted part of the Dutch-speaking area, which happens to include the prestigious varieties of the standard language spoken in the west/middle region of this area; the maps in Pauwels (1953), Gerritsen (1991) and Barbiers et al. (2005) all show that this order is rare in the varieties of Dutch spoken in Flanders and the more northern part of the Netherlands.

(117) a. dat Jan dat boek <gelezen> heeft <$^{\%}$gelezen>.
that Jan that book read has
‘that Jan has read that book.’
b. dat Marie naar Utrecht <gewandeld> is <$^{\%}$gewandeld>.
that Marie to Utrecht walked is
‘that Marie has walked to Utrecht.’

Observe that, for ease of parlance, we will follow the general practice of describing the difference in regional distribution of these orders as a north/south or Dutch/Flemish distinction, but the reader should be aware that the varieties spoken in the more northern region of the Netherlands pattern with the southern/Flemish region in this respect.

Speakers who allow the order Aux$_2$–Part$_1$ normally also allow the order Part$_1$–Aux$_2$. There is reason for assuming that the latter order (PART$_1$–AUX$_2$) is in fact the unmarked one for such speakers given that Barbiers et al. (2005) found that they rarely invert this order in reproduction tasks. It seems generally accepted now that the use of the Aux$_2$–Part$_1$ order is characteristic of written Dutch and the more formal registers of spoken Dutch (despite that it also frequently occurs in the more casual speech of many speakers); see Haeseryn (1990:ch.2) for a good review of the relevant literature on this issue. A corpus analysis by De Sutter (2005/2007) suggests that even in written Dutch the Aux$_2$–Part$_1$ order is a secondary one given that this order is mainly used in relatively simple sentences; there is a negative correlation between the complexity of utterances and the frequency of the Aux$_2$–Part$_1$ order. We refer the reader to Section 6.2.1, sub III, for further discussion of such performance factors, and simply assume that standard Dutch allows the Aux$_2$–Part$_1$ order as a stylistically marked option.

The examples in (118) show that we find basically the same variation in *te*-infinitivals in extraposed position: both orders are acceptable (and occur frequently on the internet). It seems reasonable to assume that the Part$_1$–Aux$_2$ order is again the unmarked one, but to our knowledge this has not been investigated so far.

(118) a. dat Jan denkt het boek al <gelezen> te hebben <$^{\%}$gelezen>.
that Jan thinks the book already read to have
'that Jan believes to already have read that book.'
b. dat Jan denkt al van zijn ziekte <hersteld> te zijn <$^{\%}$hersteld >.
that Jan thinks already from his illness recovered to be
'that Jan believes to already have recovered from his illness.'

2. Passive constructions

Like past participles, passive participles may either precede or follow their auxiliary in the northern varieties of Standard Dutch, but it seems that the relative frequency of the order Aux$_2$–Part$_1$ is lower in passives than in perfect-tense constructions. The southern varieties are reported to allow the Part$_1$–Aux$_2$ order only; we indicated this in (119) by means of a percentage sign. See Haeseryn (1990: Section 2.2) and De Sutter (2005/2007) for detailed discussion.

(119) a. dat er buiten <gevochten> wordt <$^{\%}$gevochten>. [impersonal passive]
that there outside fought is
'that people are fighting outside.'
b. dat hij door de politie <gevolgd> wordt <$^{\%}$gevolgd>. [regular passive]
that he by the police followed is
'that he's followed by the police.'
c. dat ze een baan <aangeboden> kreeg <$^{\%}$aangeboden>. [*krijgen*-passive]
that she a job prt-offered got
'that she was offered a job.'

That both orders are possible is confirmed by the infinitival passive constructions in (120), which show that *te*-infinitivals in extraposed position allow both orders in standard Dutch. Our impression is that the Part$_1$–Aux$_2$ order is again the preferred one, especially in the case of the *krijgen*-passive. This seems confirmed by a Google search (6/3/2013): whereas the string [*aangeboden te krijgen*] resulted in 374 hits, the string [*te krijgen aangeboden*] resulted in no more than 68 hits, several of which did not instantiate the intended passive construction.

(120) a. Jan beweert door de politie <gevolgd> te worden <$^{\%}$gevolgd>
Jan claims by the police followed to be
'Jan claims to be followed by the police.'
b. Jan denkt snel een baan <aangeboden> te krijgen <$^{\%}$aangeboden>.
Jan thinks soon a job prt-offered to get
'Jan believes to be offered a job soon.'

Observe in passing that infinitival impersonal passive constructions do not occur. The reason for this is not immediately clear but may be related to the fact that propositional verbs like *beweren* 'to claim' and *denken* 'to think' trigger subject °control, that is, require there to be an overt PRO-subject in the infinitival clause.

3. Conclusion

The findings in this section are entirely in line with generalization I in (113a): past/passive participles either precede of follow their governing auxiliary. It should be noted, however, that the Aux$_2$–Part$_1$ order is a stylistically marked one, which may not be part of Dutch °core grammar but of the °periphery (consciously learned part) of the grammar; taking this position seems consistent with the fact that this order has been promoted for a long time by normative grammarians; see Section 6.2.1, sub III, for discussion. If so, we may simplify (113a) by saying that the participle must precede the auxiliary; although we will not take this step here for the northern varieties of Standard Dutch, this indeed seems necessary in order to provide a descriptively adequate account of the variety of Standard Dutch spoken in Flanders.

B. V$_2$ + te-*infinitive$_1$*

In clusters of the type V$_2$ + *te*-infinitive$_1$, the superior verb V$_2$ can be a main verb like the control verb *proberen* 'to try' or the °subject raising verb *schijnen* 'appear', or a semi-aspectual main verb like *zitten* 'to sit'. Given that these clusters all behave in the same way when it comes to linearization, it does not seem useful to discuss these cases in separate subsections. The clusters always behave in conformity with generalization II in (113b): *te*-infinitives follow their governing verb.

(121) a. dat Jan dat boek <*te lezen> probeert <te lezen>. [Control]
that Jan that book to read tries
'that Jan is trying to read that book.'
b. dat Jan dat boek <*te lezen> lijkt <te lezen>. [Subject Raising]
that Jan that book to read appears
'that Jan appears to be reading that book.'
c. dat Jan dat boek <*te lezen> zit <te lezen>. [Semi-aspectual]
that Jan that book to read sits
'that Jan is reading that book.'

Given this finding, it does not come as a surprise that we find the same ordering restriction in the extraposed *te*-infinitivals in (122). We did not include cases with *schijnen*: infinitival clauses with evidential modal verbs normally give rise to a semantically infelicitous result. The rare examples with *schijnen* 'appear', *lijken* 'seem' and *blijken* 'turn out' that we encountered on the internet do, however, behave in conformity with generalization II.

(122) a. dat Jan ontkent dat boek <*te lezen> te proberen <te lezen>.
that Jan denies that book to read to try
'that Jan denies to be trying to read that book.'
b. dat Jan ontkent dat boek <*te lezen> te zitten <te lezen>.
that Jan denies that book to read to sit
'that Jan denies to be reading that book.'

C. V$_2$ + bare infinitive$_1$

Although bare infinitives normally follow their governing verb, it has been observed that this is not always the case in clusters of two verbs. This has been observed for modal verbs in Reuland (1983), Den Besten & Broekhuis (1989), Koopman (1994) and Haeseryn et al. (1997:1072-3).

(123) a. dat hij het vliegtuig niet <zien> kan <zien>.
that he the airplane not see is.able
‘that he can’t see the airplane.’
b. dat hij haar <spreken> moet <spreken>.
that he her speak must
‘that he must speak to her.’

The stylistically marked Main$_1$-Modal$_2$ order is pervasive in especially somewhat older literary prose and poetry, but can also be found in the literary work of the last century. For example, a manual search in Vestdijk’s (600 page) novel *Kind tussen vier vrouwen*, which was written in 1933, resulted in 24 cases for the verb *kunnen* ‘may/be able’, 6 cases for *moeten* ‘must/be obliged’, 3 cases for *mogen* ‘be allowed’, 8 cases for *willen* ‘want’, and 31 cases for *zullen* ‘will’. The same novel also provided 8 cases with the aspectual verb *gaan* ‘to go’; examples are given in (124).

(124) a. ... alsof Jan Breedevoort hem knijpen ging. [*Verzamelde Romans* 1, 378]
as.if Jan Breedevoort him pinch went
‘... as if Jan Breedevoort was going to pinch him.’
b. ... alsof hij hen [...] de keel afsnijden ging. [*Verzamelde Romans* 1, 473]
as.if he them the throat prt.-cut went
‘... as if he was going to cut their throats.’

There seems to be some disagreement in the literature on the question as to whether perception verbs allow the deviant order in °AcI-constructions: Reuland (1983) claims that such orders are unacceptable, Haeseryn et al. consider them archaic, and Den Besten & Broekhuis (1989) and Koopman (1994) regard them as acceptable. For this reason we marked the examples in (125), adapted from Reuland and Den Besten & Broekhuis, with a percentage sign.

(125) a. dat Marie Peter de ratten <$^{\%}$vangen> zag <vangen>.
that Marie Peter the rats catch saw
‘that Marie saw Peter catch the rats.’
b. dat Marie hem <$^{\%}$lopen> zag <$^{\%}$lopen>.
that Marie him walk saw
‘that Marie saw him walk.’

Examples with perception verbs were not found in Vestdijk’s novel (although they can be encountered elsewhere), but it does have cases of AcI-constructions with *laten* ‘to make/let’: example (126a) involves permissive and (126b) causative *laten*. Examples of this sort are also accepted by Den Besten & Broekhuis, but Koopman (1994) claims that examples like these are acceptable with a permissive reading only; examples like these are not discussed by Reuland and Haeseryn et al.

(126) a. ... zoals een poes een gewond muisje nog [...] trippelen laat. [*VR* 1, 226]
like a cat an injured mouse still trip let
‘... like a cat lets an injured mouse trip for a while.’
b. Ik wil dat je het vandaag lezen laat. [*VR* 1, 387]
I want that you it today read make
‘I want that you make [someone] read it today.’

That the order Main$_1$-Modal$_2$ is fairly special is clear from the fact that it can only occur if certain special conditions are met. Den Besten & Broekhuis note, for example, that this order is less acceptable if the object of the embedded main verb is indefinite and in a position adjacent to the verb cluster; this is illustrated in (127). They further suggest that this restriction is prosodic in nature, but since this suggestion has not been tested so far, we leave it to future research to investigate whether it is on the right track.

(127) a. dat Marie dat boek waarschijnlijk lezen wil.
that Marie that book probably read wants
‘that Marie probably wants to read that book.’
b. $^?$dat Marie waarschijnlijk een boek lezen wil.
that Marie probably a book read wants
Intended: ‘that Marie probably wants to read a book.’

That the order Main$_1$-Modal$_2$ is special is also clear from the fact that it cannot occur in infinitival clauses. We illustrate this in (128) for clusters with a superior modal verb only.

(128) a. Jan beweerde het vliegtuig niet <*zien> te kunnen <zien>.
Jan claimed the airplane not see to be.able
‘Jan claimed not to be able to see the airplane.’
b. Jan hield vol haar <*spreken> te moeten <spreken>.
Jan insisted prt. her speak to had.to
‘Jan insisted on having to speak to her.’

As far as we know, it has not been investigated to what extent the stylistically marked order Main$_1$-Modal$_2$ occurs in spontaneous speech of speakers of Standard Dutch, and consequently it is not clear whether it should be considered part of Dutch °core grammar or of its periphery. This issue is important given that it may affect our evaluation of the various theoretical accounts of verb clustering. We have to leave the issue to future research for want of relevant information. We refer the reader to Barbiers (2008: Section 1.3.1) for a discussion of the dialectal distribution of the two word orders.

D. Summary and generalizations

The subsections above investigated the generalizations in (113), repeated here in a slightly different form as (129). The generalizations as formulated here can account for the unmarked word orders in verb clusters of two verbs.

(129) a **Generalization I**: Past/passive participles either precede or follow their governing auxiliary.
b. **Generalization II**: *Te*-infinitives follow their governing verb.
c. **Generalization III**: Bare infinitives follow their governing verb.

It should be noted that generalization I is too permissive for the southern varieties of Standard Dutch, which seem to require the participle to precede the auxiliary. The formulation of generalization III in (129c) differs from the one in (113c) in that we omitted the supplementary clause that the generalization is restricted to clusters with more than two verbs. The reason for doing this is that it is not *a priori* clear at this point whether the order Main$_1$-Modal$_2$ should be considered part of Dutch °core grammar: it may be restricted to the written/formal register and thus be part of the periphery of the grammar.

II. Clusters of three or more verbs

This section discusses the linearization of verb clusters of three (or more) verbs. In order to be able to evaluate the generalizations in (129), we will classify such clusters on the basis of the morphological form of the most deeply embedded main verb, as in (130). The numeral indices express the hierarchical relation between the verbs in question: V$_{i+1}$–V$_i$ indicates that V$_{i+1}$ is °superior to V$_i$ since the former verb selects the projection of the latter verb as its complement.

(130) • Verb clusters of three verbs
a. V$_3$ + Aux$_2$ + past/passive participle$_1$
b. V$_3$ + V$_2$ + *te*-infinitive$_1$
c. V$_3$ + V$_2$ + bare infinitive$_1$

It is easily possible to form verb clusters of four or more verbs, but these are relatively rare in everyday use; a more or less natural example is *dat Jan dat boek zou moeten hebben kunnen lezen* ‘that Jan should have been able to read that book’. The principles that underlie the word order of such clusters do not differ from those that underlie the order of clusters of three verbs. We will therefore not systematically discuss such larger clusters, but simply discuss some cases if expedient. The following subsections will discuss the clusters in (130) in the order given there.

A. V$_3$ + Aux$_2$ + Participle$_1$: perfect-tense and passive constructions

Past participles arise if a perfect auxiliary immediately governs the most deeply embedded main verb *Main*$_1$; if a perfect auxiliary governs some higher verb V$_n$, where n > 1, we normally get the °*infinitivus-pro-participio* (IPP) effect. This is illustrated in (131).

(131) a. dat Jan dat boek morgen moet hebben gelezen. [Modal$_3$-Aux$_2$-Main$_1$]
that Jan that book tomorrow must have read$_{part}$
‘that Jan has to have read that book by tomorrow.’
b. dat Jan dit boek heeft moeten/*gemoeten lezen. [Aux$_3$-Modal$_2$-Main$_1$]
that Jan this book has must/must$_{part}$ read
‘that Jan has had to read that book.’

Passive participles are also found as the as the single most deeply embedded main verb (= Main$_1$) only, for the simple reason that passivization of some higher verb V$_n$, where n >1, is normally not possible.

(132) dat de radio moet worden gerepareerd. [Modal$_3$-Aux$_2$-Main$_1$]
that the radio must be repaired
‘that the radio must be repaired.’

Consequently, when discussing the linear order of verb clusters with a past/passive participle, we can focus on strings of the form V$_3$ + Aux$_2$ + Participle$_1$. We will show that generalization I, according to which past/passive participles either precede of follow their governing auxiliary is correct for the variety of Standard Dutch spoken in the Netherlands, but not for that spoken in Belgium. We will further show that the participles need not be adjacent to their auxiliary but can actually occur in several positions in the cluster. We conclude with a discussion of one notable exception to the otherwise robust generalization that participles are the most deeply embedded verb in verb clusters, viz., cases in which a passive auxiliary is governed by a perfect auxiliary.

1. Perfect-tense constructions

We start our discussion of perfect-tense constructions with main clauses, that is, structures in which the finite verb is in second position. Structures of this type do not seem to show an exceptional behavior: the examples in (133) show that the past participle may either precede or follow the auxiliary. We should, however, make the same proviso as in Subsection IA, that the Aux$_2$–Part$_1$ order is only found in a restricted part of the Dutch-speaking area, which happens to include the prestigious varieties of the standard language spoken in the west/middle region of this area. More generally, the Part$_1$–Aux$_2$ order seems to be the more common one in speech.

(133) a. Jan moet dat boek morgen <gelezen> hebben <$^{\%}$gelezen>.
Jan must that book tomorrow read$_{part}$ have
‘Jan must have read that book by tomorrow.’
b. Els zal vanmorgen <vertrokken> zijn <$^{\%}$vertrokken>.
Els will this.morning left$_{part}$ be
‘Els will have left this morning.’

The examples in (134) show that the placement options of past participles in embedded clauses are a little surprising. As the participle is governed by the auxiliary, we would expect these verbs to be adjacent, but as a matter of fact they can easily be separated by the finite modal verb.

(134) a. dat Jan dat boek <gelezen> moet <gelezen> hebben <$^{\%}$gelezen>.
that Jan that book read$_{part}$ must have
‘that Jan must have read that book.’
b. dat Els vanmorgen <vertrokken> zal <vertrokken> zijn <%vertrokken>.
that Els this.morning left$_{part}$ will be
‘that Els will have left this morning.’

For many speakers, the three word orders are simply more or less free alternatives, with the MODAL$_3$–AUX$_2$–PART$_1$ order *moet hebben gelezen* again being the stylistically most marked one. The varieties of standard Dutch spoken in the Netherlands and Belgium also seem to differ in that they exhibit different order preferences: several types of research reveal that speakers from the Netherlands prefer the PART$_1$–MODAL$_3$–AUX$_2$ order *gelezen moet hebben*, whereas speakers from Belgium prefer the MODAL$_3$–PART$_1$–AUX$_2$ order *moet gelezen hebben*. Other orders can be attested in some varieties of Dutch, but these are normally considered to be dialectal in nature; see Section 6.2.1, sub IV, for a more detailed discussion.

That speakers from the Netherlands have a preference to put the participle first in the verb cluster is also clear from the extraposed *te*-infinitivals in (135); placement of the participle in position <2> gives rise to a degraded result for these speakers, whereas some of our Flemish informants readily accept this placement. Placement of the participle in position <1> is again restricted to the variety of Standard Dutch spoken in the Netherlands. Note that there is not much information about the regional spread of the verb orders in (135), so more careful research would be welcome.

(135) a. Jan beweert dat boek morgen <gelezen> te moeten <2> hebben <1>.
Jan claims that book tomorrow read$_{part}$ to must have
'Jan claims to have to have read that book by tomorrow.'
b. Els zegt morgen al <vertrokken> te zullen <2> zijn <1>.
Els says tomorrow already left to will be
'Els says that she will already have left tomorrow.'

The examples in (136) provide similar instances with a subject raising verb such as *schijnen*, which does not trigger extraposition of its infinitival complement but instead requires verb clustering; note that while (136a) is quite natural, some speakers may consider (136b) somewhat artificial due to the fact that more or less the same message can be expressed without the modal *zullen*. Placement of the participle in position <2> again gives rise to a degraded result for speakers from the Netherlands, whereas some of our Flemish informants have no qualms about accepting it. Placement of the participle in position <1> is again restricted to the Dutch variety of standard Dutch. Again, it should be mentioned that more careful research on the regional spread of the orders in (136) would be welcome.

(136) a. Jan schijnt dat boek morgen <gelezen> te moeten <2> hebben <1>.
Jan seems that book tomorrow read$_{part}$ to must have
'Jan seems to have to have read that book by tomorrow.'
b. Els schijnt morgen al <vertrokken> te zullen <2> zijn <1>.
Els seems tomorrow already left to will be
'It seems that Els will already have left tomorrow.'

Clusters with more than three verbs are possible but not very common in colloquial speech. It seems that participles can appear in all positions in the cluster, as is illustrated in (137) by means of the embedded counterparts of (136a). Example (137a) and (137b) seem again restricted to the varieties of standard Dutch spoken in, respectively, the Netherlands and Flanders. The orders in (137c) and, especially, (137d) seem to be the more generally accepted ones. It goes without saying that more careful research on the regional spread of these orders would be welcome.

(137) a. $^{\%}$dat Jan dat boek morgen schijnt te moeten hebben gelezen.
that Jan that book tomorrow seems to must have read$_{part}$
'Jan seems to have to have read that book by tomorrow.'
b. $^{\%}$dat Jan dat boek morgen schijnt te moeten gelezen hebben.
c. dat Jan dat boek morgen schijnt gelezen te moeten hebben.
d. dat Jan dat boek morgen gelezen schijnt te moeten hebben.

Clusters with four verbs in which the superior non-finite verbs are all bare infinitives have been researched in more detail. The literature reviewed in Haeseryn (1990:70ff.) suggests that the orders in (138a&d) are the ones commonly found in the northern varieties of Standard Dutch, and that the order in (138c) is more favored than the one in (138b). In the varieties of Standard Dutch spoken in Belgium, on the other hand, the order in (138b) seems to be a common one.

(138) a. $^{\%}$dat Jan die film zou kunnen hebben gezien.
that Jan that movie would$_{modal}$ may$_{modal}$ have$_{aux}$ seen$_{main}$
'that Jan could have seen that movie.'
b. dat Jan die film zou kunnen gezien hebben.
c. dat Jan die film zou gezien kunnen hebben.
d. dat Jan die film gezien zou kunnen hebben.

These acceptability judgments on the examples in (138) seem to be in line with what we found for the examples in (137), but an important difference is that *all* orders in (138) seem acceptable in the variety of Standard Dutch spoken in the Netherlands: while speakers of this variety consider examples such as (137b) to be degraded, examples such as (138b) are merely considered to be stylistically marked.

2. Passive constructions

We start our discussion of passive constructions with main clauses, that is, structures in which the finite verb is in second position. Structures of this type again seem to be quite ordinary in that the examples in (139) show that the passive participle may either precede or follow the auxiliary, with the proviso that the AUX-PART order is only found in a restricted part of the Dutch-speaking area which happens to include the prestigious varieties of the standard language spoken in the west/middle region of this area. More generally, it seems that the PART-AUX order is the more common one in speech.

(139) a. Er zal buiten <gevochten> worden <$^{\%}$gevochten>. [impersonal passive]
there will outside fought be
'People will be fighting outside.'
b. Hij moet door Marie <geholpen> worden <$^{\%}$geholpen>. [regular passive]
he must by Marie helped be
'He needs to be helped by Marie.'
c. Zij zal de baan <aangeboden> krijgen <$^{\%}$aangeboden>. [*krijgen*-passive]
she will the job prt-offered get
'She'll be offered the job.'

The examples in (140) show that in embedded clauses, the passive participle may occupy any position in the clause-final verb cluster in the northern varieties of Dutch, although placement of the participle in final position seems less frequent than in the perfect-tense construction, and that intermediate placement is relatively rare. The southern varieties do not allow the participle in final position and further seem to differ from the northern varieties in exhibiting a preference for placing the participle in the intermediate position of the verb cluster. We refer the reader to

Haeseryn (1990: Section 2.3.2) for a more detailed discussion of these regional differences in frequency.

(140) a. dat er buiten <gespeeld> mag < gespeeld > worden <$^{\%}$gespeeld >.
that there outside played be.allowed be
‘It will be allowed to play outside.’
b. dat hij door Marie <geholpen> moet <geholpen> worden <$^{\%}$geholpen>.
that he by Marie helped must be
‘that he needs to be helped by Marie.’
c. dat ze de baan <aangeboden> zal <aangeboden> krijgen <$^{\%}$aangeboden>.
that she the job prt-offered will get
‘that she’ll be offered the job.’

That speakers from the Netherlands prefer to place the participle first in the verb cluster is also clear from the extraposed *te*-infinitivals in (141), in which placement of the participle in position <2> gives rise to a degraded result; cf. Smits (1987). Some of our Flemish informants, on the other hand, do allow placement of the participle in position <2>. Placement of the participle in position <1> is again restricted to variety of standard Dutch spoken in the Netherlands. Note that we do not provide examples of the impersonal passive as these cannot occur in infinitival clauses of this type for independent reasons; cf. Subsection IA.

(141) a. Jan beweert door Marie <geholpen> te moeten <2> worden <1>.
Jan claims by Marie helped to must be
‘Jan claims that he needs to be helped by Marie.’
b. Zij denkt een baan <aangeboden> te zullen <2> krijgen <1>.
she thinks a job prt.-offered to will get
‘She thinks that she’ll get offered a job.’

The examples in (141) involve the propositional verb *beweren*, which triggers extraposition of its infinitival complement. In (142), we find similar examples with the subject raising verb *schijnen*; note that whereas the (a)- and (b)-examples are quite natural, some speakers may consider the (c)-example artificial as more or less the same message can be expressed without the modal *zullen*. Placement of the participle in position <2> again gives rise to a degraded result for speakers from the Netherlands, whereas some of our Flemish informants are quite comfortable with this placement. Placement of the participle in position <1> is again restricted to the variety of standard Dutch spoken in the Netherlands.

(142) a. Er schijnt buiten gespeeld te mogen <2> worden <1>.
there seems outside played to be.allowed be
‘It seems to be allowed to play outside.’
b. Jan schijnt door Marie <geholpen> te moeten <2> worden <1>.
Jan seems by Marie helped to must be
‘It seems that Jan needs to be helped by Marie.’
c. Zij schijnt een baan <aangeboden> te zullen <2> krijgen <1>.
she seems a job prt.-offered to will get
‘It seems that she’ll get offered a job.’

The embedded counterparts of (142) exhibit more or less the same pattern; we demonstrate this in (143) for the regular passive in (142b) only. The percentage signs in (143a) and (143b) again express that the marked orders are restricted to the variety of standard Dutch spoken in, respectively, the Netherlands and Flanders. The orders in (137c) and, especially, in (137d) seem to be the more generally accepted ones.

(143) a. $^{\%}$dat Jan door Marie schijnt te moeten worden geholpen.
that Jan by Marie seems to must be helped
'that Jan seems to need to be helped by Marie.'
b. $^{\%}$dat Jan door Marie schijnt te moeten geholpen worden.
c. dat Jan door Marie schijnt geholpen te moeten worden.
d. dat Jan door Marie geholpen schijnt te moeten worden.

The clusters in (143) contain a *te*-infinitive as a non-finite superior verb. Clusters with four verbs in which the superior non-finite verbs are all bare infinitives have been researched in greater detail. The literature reviewed in Haeseryn (1990:70ff.) suggests that the orders in (144a&d) are the ones commonly found in the northern varieties of Standard Dutch, and that the order in (144c) is more favored than the one in (144b). In the varieties of Standard Dutch spoken in Belgium, on the other hand, the order in (144b) seems to be a common one. This is in keeping with what we found for the examples in (143), but an important difference is that *all* orders in (144) seem acceptable for speakers of the variety of Standard Dutch spoken in the Netherlands: whereas such speakers consider examples such as (143b) as degraded, example (144b) is merely considered as stylistically marked.

(144) a. $^{\%}$dat hij door Marie zou moeten worden geholpen.
that he by Marie would must be helped
'that he should be helped by Marie.'
b. dat hij door Marie zou moeten geholpen worden.
c. dat hij door Marie zou geholpen moeten worden.
d. dat hij door Marie geholpen zou moeten worden.

For completeness' sake, example (145) provides similar examples for the *krijgen*-passive, for which the same observations can be made as for (144).

(145) a. $^{\%}$dat ze de baan zou moeten krijgen aangeboden.
that she the job would must get prt-offered
'that she should be offered the job.'
b. dat ze de baan zou moeten aangeboden krijgen.
c. dat ze de baan zou aangeboden moeten krijgen.
d. dat ze de baan aangeboden zou moeten krijgen.

3. Summary

The subsections above have shown that perfect-tense and passive constructions behave in full accordance with generalization I in (129a): past participles may follow or precede the perfect auxiliary. In fact, participles seem to be able to occur in any position in the verb cluster. This is illustrated in (146), in which V_n stands for zero or more verbs in the verb cluster besides the auxiliary and the main verb.

(146) • Order in verb clusters of the form V_n + Aux_2 + $Part_1$
a. dat ..... <Part> Aux_{finite} <Part>
b. dat ..... <Part> V_{finite} <Part> Aux <Part>
c. dat ..... <Part> V_{finite} <Part> V_{inf} <Part> Aux <Part>
d. dat ..... <Part> V_{finite} <Part> V_{inf} <Part> V_{inf} <Part> Aux <Part>
e. etc.

The order Aux_2–$Part_1$ seems, however, to be a stylistically marked one that is restricted to the northern varieties of standard Dutch. In the southern varieties we tend to find the pattern in (147).

(147) • Order in verb clusters of the form V_n + Aux_2 + $Part_1$
a. dat ..... <Part> Aux_{finite}
b. dat ..... <Part> V_{finite} <Part> Aux
c. dat ..... <Part> V_{finite} <Part> V_{inf} <Part> Aux
d. dat ..... <Part> V_{finite} <Part> V_{inf} <Part> V_{inf} <Part> Aux
e. etc.

The northern and southern varieties further seem to differ in that the former prefers the participle to come first in the verb cluster (e.g., $PART_1$–V_3–AUX_2), whereas the latter prefers it to be in some intermediate position (e.g., V_3–$PART_1$–AUX_2). The northern varieties further seem to be special in that they prohibit placement of the participle between a *te*-infinitive and the auxiliary: * ... $V_{te\text{-}inf}$ <Part> Aux.

4. A special case: perfect passives

Passive constructions are special in that they do not exhibit the IPP-effect in the perfect tense: this implies that passive constructions constitute an exception to the general rule that verb clusters do not contain more than one participle. This is illustrated in (148) by means of a *krijgen*-passive; the past/passive participles are italicized.

(148) a. dat Jan het boek *toegestuurd* krijgt.
that Jan the book prt.-sent gets
'that Jan was sent the book.'
b. dat Jan het boek *toegestuurd* heeft *gekregen*.
that Jan the book prt.-sent has gotten
'that Jan has been sent the book.'

The examples in (149) show that this exceptional behavior with respect to the IPP-effect goes hand in hand with another special attribute: whereas the northern varieties of standard Dutch allow the main verb to either precede or follow the passive auxiliary *krijgen* in imperfect-tense constructions, the main verb must precede the auxiliary in the corresponding perfect constructions; cf. Den Besten (1985).

(149) a. dat Jan het boek toe <gestuurd> krijgt <gestuurd>.
that Jan the book prt. sent gets
'that Jan gets sent the book.'
b. dat Jan het boek toe <gestuurd> heeft <gestuurd> gekregen <*gestuurd>.
that Jan the book prt. sent has gotten
'that Jan has been sent the book.'

The examples in (150) show that larger verb clusters in which the passive auxiliary appears as a past participle exhibit more or less the same behavior: the participial main verb *gestuurd* may be placed in all positions indicated by "✓", but not in the position following the participial passive auxiliary *gekregen*.

(150) a. dat Jan het boek toe gestuurd moet ✓ hebben ✓ gekregen.
that Jan the book prt sent must have gotten
'that Jan must have been sent the book.'
b. dat Jan het boek toe <gestuurd> zou ✓ moeten ✓ hebben ✓ gekregen.
that Jan the book prt sent would must have gotten
'that Jan should have been sent the book.'

Whether we find the same effect in regular passives such as (151) is more difficult to answer: judgments of speakers of the southern variety of Dutch are not helpful since they do not easily allow the Aux$_2$–Part$_1$ order in (151a) anyway, and speakers of the northern varieties consider the overt expression of the perfect auxiliary *geworden* in (151b) marked or archaic at best. However, insofar as (151b) is accepted by the latter group, they agree that the passive participle *geslagen* must precede the passive auxiliary *geworden*; placing the passive participle after the auxiliary leads to a completely unacceptable result. Many speakers of the southern varieties do accept the orders in (151b) that are marked by two question marks, possibly with the passive auxiliary *geweest* instead of *geworden*; cf. Section 6.2.2, sub II.

(151) a. dat de hond <geslagen> wordt <geslagen>.
that the dog beaten is
'that the dog is beaten.'
b. dat de hond <$^{??}$geslagen> is <$^{??}$geslagen> geworden <*geslagen>.
that the dog hit has been
'that the dog has been beaten.'

B. $V_3 + V_2 +$ te-*infinitive*$_1$

Subsection IB has shown that clusters of the form V$_2$ + Main$_1$, in which Main$_1$ is a *te*-infinitive, have a rigid word order; the superior verb V$_2$ must precede the *te*-infinitive. For convenience, the examples that were used to illustrate this are repeated here as (152).

(152) dat Jan dat boek <*te lezen> probeert <te lezen>. [Control]
that Jan that book to read tries
‘that Jan is trying to read that book.’
b. dat Jan dat boek <*te lezen> lijkt <te lezen>. [Subject Raising]
that Jan that book to read appears
‘that Jan appears to be reading that book.’
c. dat Jan dat boek <*te lezen> zit <te lezen>. [Semi-aspectual]
that Jan that book to read sits
‘that Jan is reading that book.’

If we extend the verb clusters by means of an additional verb, the order of V$_2$ and Main$_1$ remains unchanged. In the examples (153) to (155), we will illustrate this for the cluster in (152a) consisting of the °control verb *proberen* and the *te*-infinitival *te lezen*. In (153) we added a subject raising verb: the main clause in (153a) shows that this does not affect the word order possibilities of the clause-final cluster. The embedded clause in (153b) shows further that the raising verb must precede the control verb when it is part of the verb cluster, which is of course what we expect on the basis of generalization II, given that this verb requires that the control verb *proberen* surfaces as a *te*-infinitive.

(153) a. Jan schijnt dat boek <*te lezen> te proberen <te lezen>.
Jan seems that book to read to try
‘Jan seems to try to read that book.’
b. dat Jan dat boek schijnt te proberen te lezen.
that Jan that book seems to try to read
‘that Jan seems to try to read that book.’

The situation does not change, however, if the control verb surfaces as a bare infinitive, e.g., when *proberen* is selected by a modal verb such as *moeten*. The main clause in (154a) shows that the control verb again must precede the embedded *te*-infinitive. The embedded clause in (154b) shows further that the modal must precede the control verb when it is part of the verb cluster, which is of course in accordance with generalization III.

(154) a. Jan moet dat boek <*te lezen> proberen <te lezen>.
Jan must that book to read try
‘Jan must try to read that book.’
b. dat Jan dat boek moet proberen te lezen.
that Jan that book must try to try
‘that Jan must try to read that book.’

The control verb *proberen* also appears as a bare infinitive in perfect-tense constructions as a result of the IPP-effect. The examples in (155) show that such cases behave just like those in (154).

(155) a. Jan heeft dat boek <*te lezen> proberen <te lezen>.
Jan has that book to read try
'Jan has tried to read that book.'
b. dat Jan dat boek heeft proberen te lezen.
that Jan that book has tried to read
'that Jan has tried to read that book.'

Section 7.2, sub III, has shown that a subject raising verb such as *schijnen* cannot easily be embedded under some other verb. We therefore only give perfect-tense examples with the IPP-effect. For those speakers who accept such constructions, the verb orders must be as given in (156); any change in the word order of the clause final verb clusters will make the sentences completely unacceptable.

(156) a. $^{?}$Jan heeft dat boek lijken te lezen.
Jan has that book appear to read
b. $^{?}$dat Jan dat boek heeft lijken te lezen.
that Jan that book has appear to read

Embedding of semi-aspectual verbs under some other verb is easily possible, but a problem that arises is that the complement of the semi-aspectual verb tends to assume a bare infinitival form in such cases; cf. Section 6.3.1, sub III. However, insofar as realization of *te* is accepted in the main clauses in (157), it is clear that the *te*-infinitive must follow the infinitival form of the semi-aspectual verb; the examples in which the *te*-infinitive precedes the semi-aspectual verb are far more degraded than the examples in which the *te*-infinitive follows it.

(157) a. Jan schijnt dat boek daar <*te lezen> te zitten <$^{?}$te lezen>.
Jan seems that book there to read to sit
'Jan seems to read that book over there.'
b. Jan gaat dat boek daar <*te lezen> zitten <$^{?}$te lezen>.
Jan goes that book there to read sit
'Jan is going to be reading that book over there.'

The examples in (158) provide the embedded clauses corresponding to those in (157). The given word order of the verb clusters is the only possible one; any change in the word order of the verb clusters will be severely detrimental to the result, regardless of the presence of *te.*

(158) a. dat Jan dat boek daar schijnt te zitten ($^{??}$te) lezen.
that Jan that book there seems to sit to read
'that Jan seems to be reading that book over there.'
b. dat Jan dat boek daar gaat zitten ($^{??}$te) lezen.
that Jan that book there goes sit to read
'that Jan is going to read that book over there.'

The findings on the basis of the marked examples in (157) and (158) are confirmed by perfect-tense constructions such as (159), which are normally judged as fully acceptable with *te*. These examples show that the semi-aspectual verb must precede the infinitive, regardless of whether or not *te* is present.

(159) a. Jan heeft dat boek daar <*te lezen> zitten <te lezen>.
Jan has that book there to read sit
'Jan has been reading that book over there.'
c. dat Jan dat boek daar heeft zitten (te) lezen.
that Jan that book there has sit to read
'that Jan has been reading that book over there.'

The examples in (160), finally, show that *te*-infinitives also follow their governing verb in clusters of three verbs in extraposed *te*-infinitivals; any change in the order of the verb clusters will make these examples unacceptable. For completeness' sake, note that omitting *te* seems to be much preferred in examples such as (160b), which is in line with the fact that examples with *te* are rare on the internet (contrary to cases without *te*). Note further that we did not include an example with the subject raising verb *schijnen* because infinitival clauses with this verb are generally unacceptable for semantic reasons.

(160) a. dat Jan ontkent dat boek te hebben proberen te lezen.
that Jan denies that book to have try to read
'that Jan denies having tried to read that book.'
b. dat Jan ontkent dat boek daar te hebben zitten (te) lezen.
that Jan denies that book there to have sit to read
'that Jan denied to have been reading that book over there.'

This discussion in this subsection has shown that the data are fully consistent with generalization II in (129b) that *te*-infinitives must follow their governing verb in verb clusters, despite the fact that it is sometimes difficult to construct clusters of three verbs in which the most deeply embedded verb has the form of a *te*-infinitive.

C. V_3 + V_2 + bare infinitive$_1$

Subsection IC, has shown that, at least in literary prose and poetry, clusters of the form V_2 + bare infinitive$_1$ can be linearized in two ways: although the order V_2–bare infinitive$_1$ is the unmarked one, the order bare infinitive$_1$–V_2 is possible as a stylistically marked option. There is some discussion whether the marked option is possible with all verbs selecting a bare infinitive, or whether it occurs with a subset only. Since we have seen that it is beyond doubt that the marked option is available for modal verbs, we will restrict our investigation of larger verb clusters to extensions of the clusters of the type Modal$_2$ + bare infinitive$_1$. Two sentences with such clusters are repeated in (161).

(161) a. dat Jan het vliegtuig niet <zien> kan <zien>.
that Jan the airplane not see is.able
'that Jan can't see the airplane.'
b. dat Jan haar <spreken> moet <spreken>.
that Jan her speak must
'that Jan has to speak to her.'

The verb clusters in the example in (161) can be extended in three ways: (i) by the addition of a verb that selects a *te*-infinitive, (ii) by the addition of a verb that selects a bare infinitive, and (iii) by adding a perfect auxiliary (thanks to the IPP-effect). We illustrate the first option by means of the subject raising verb *schijnen* 'to seem'. The main clauses in (162) show that the addition of *schijnen* blocks the stylistically marked order bare infinitive$_1$–Modal$_2$. Given this, it does not come as a surprise that the order of the verb clusters is also rigid in the corresponding embedded clauses in the primed examples.

(162) a. Jan schijnt het vliegtuig niet <*zien> te kunnen <zien>.
Jan seems the airplane not see to be.able
'Jan seems not to be able to see the airplane.'
a′. dat Jan het vliegtuig niet schijnt te kunnen zien.
that Jan the airplane not seems to be.able see
'that Jan seems not to be able to see the airplane.'
b. Jan schijnt haar <*spreken> te moeten <spreken>.
Jan seems her speak to must
'Jan seems to have to speak to her.'
b′. dat Jan haar schijnt te moeten spreken.
that Jan her seems to must speak
'that Jan seems to have to speak to her.'

Given that Subsection I has shown that the marked option cannot occur in extraposed *te*-infinitivals of propositional verbs like *beweren* in (163) either, this may suggest that the impossibility of the marked order is related to the fact that the modal verbs are realized as *te*-infinitives: *te kunnen*/*te moeten*.

(163) a. Jan beweerde het vliegtuig niet <*zien> te kunnen <zien>.
Jan claimed the airplane not see to be.able
'Jan claimed not to be able to see the airplane.'
b. Jan hield vol haar <*spreken> te moeten <spreken>.
Jan insisted prt. her speak to have.to
'Jan insisted on having to speak to her.'

That the form of the modal verb is not the decisive factor, however, is shown by the fact that the marked order is also excluded in examples such as (164), in which the modal surfaces as a bare infinitive. In the main clauses in the primeless examples the embedded main verb must follow the modal verb, and the primed examples show that embedded clauses require that the clusters linearize as Modal$_3$-Modal$_2$-Main$_1$.

(164) a. Jan zal het vliegtuig niet <*zien> kunnen <zien>.
Jan will the airplane not see be.able
'Jan won't be able to see the airplane.'
a′. dat Jan het vliegtuig niet zal kunnen zien.
that Jan the airplane not will be.able see
'that Jan won't be able to see the airplane.'

b. Jan zal haar <*spreken> moeten <spreken>.
Jan will her speak must
‘Jan will have to speak to her.’
b′. dat Jan haar zal moeten spreken.
that Jan her will must speak
‘that Jan will have to speak to her.’

The perfect-tense constructions in (165) show that IPP-constructions behave in just the same way. In main clauses the embedded main verb must follow the modal and the embedded clauses require that the clusters linearize as Aux$_3$-Modal$_2$-Main$_1$.

(165) a. Jan heeft het vliegtuig niet <*zien> kunnen <zien>.
Jan has the airplane not see be.able
‘Jan hasn’t been able to see the airplane.’
a′. dat Jan het vliegtuig niet heeft kunnen zien.
that Jan the airplane not has be.able see
‘that Jan hasn’t been able to see the airplane.’
b. Jan heeft haar <*spreken> moeten <spreken>.
Jan has her speak must
‘Jan has had to speak to her.’
b′. dat Jan haar heeft moeten spreken.
that Jan her has must speak
‘that Jan has had to speak to her.’

The examples in (166) provide examples of verb clusters of three verbs in extraposed *te*-infinitival clauses; again, any change in the order of the verb clusters will make these examples unacceptable. We did not include examples with the subject raising verb *schijnen* as this verb does not normally appear in infinitival clauses for semantic reasons. Some speakers may find the primeless examples somewhat artificial owing to the fact that more or less the same message can be expressed without the modal *zullen*

(166) a. Jan denkt het vliegtuig niet te zullen kunnen zien.
Jan thinks the airplane not to will be.able see
‘Jan thinks that he won’t be able to see the airplane.’
a′. Jan zegt het vliegtuig niet te hebben kunnen zien.
Jan says the airplane not to have be.able see
‘Jan says that he hasn’t been able to see the airplane.’
b. Jan denkt haar te zullen moeten spreken.
Jan thinks her to will must speak
‘Jan thinks he’ll have to speak to her.’
b′. Jan hield vol haar te zullen moeten spreken.
Jan insisted prt. her to will must speak
‘Jan insisted that he would have to speak to her.’

The discussion above has shown that clusters of the form V$_3$ + V$_2$ + bare infinitive$_1$ must be linearized as V$_3$–V$_2$–bare infinitive$_1$ regardless of the form of V$_3$ and V$_2$; this confirms generalization III in (129c), according to which bare infinitives must follow their governing verb. Longer verb clusters are also in accordance with this generalization: we illustrate this in (167) for clusters with four verbs, which all must be spelled out in the order V_4–V_3–V_2–$Main_1$.

(167) a. dat Marie Jan moet hebben zien vertrekken.
that Marie Jan must have see leave
‘that Marie must have seen Jan leave.’
b. dat Marie Jan dat boek zou moeten helpen lezen.
that Marie Jan that book would must help read
‘that Marie should help Jan read that book.’
c. dat Marie Jan die sonate wil helpen leren spelen.
that Marie Jan that sonata wants help learn play
‘that Marie wants to help Jan learn to play that sonata.’

III. Summary and generalizations

This section has investigated whether the generalizations in (168) provide a descriptively adequate description of the word orders found in standard Dutch verb clusters. The answer can be affirmative although we have to add a number of caveats.

(168) a **Generalization I**: Past/passive participles either precede or follow their governing auxiliary.
b. **Generalization II**: *Te*-infinitives follow their governing verb.
c. **Generalization III**: Bare infinitives follow their governing verb.

The formulation of generalization I is intended to describe the situation in the northern varieties of standard Dutch, but it is too permissive when it comes to describing the situation in the southern varieties, in which the participle normally precedes the auxiliary. It seems that the order Aux_2-$Part_1$ is in fact somewhat artificial and has come into existence as a result of normative pressure; see Coussée (2008:ch.10) and Van der Horst (2008:1984ff.) for more detailed discussion. It might be defensible to assume that this order is part of the °periphery (consciously learned part) of the grammar, and should thus be excluded from our syntactic description, but we decided not to do so because of the pervasiveness of this order in the speech of many speakers of Standard Dutch as an alternative realization of the PART-AUX order; see also *Taalunieversum*:taaladvies.net/taal/advies/tekst/36. Furthermore, it is important to point out that generalization I does not say anything about adjacency between the auxiliary and the participle, thus allowing the participle to occupy several positions in the verb cluster.

(169) a. dat je die film zou moeten hebben gezien.
that you that movie would must have seen
‘that you should have seen that movie.’
b. dat je die film zou moeten gezien hebben.
c. dat je die film zou gezien moeten hebben.
d. dat je die film gezien zou moeten hebben.

Although the orders in (169b-d) are all acceptable, there are regional differences in preference: the order in (169d) seems the preferred one in the Netherlands, whereas the order in (169b) is the preferred one in Flanders; these preferences are not expressed by generalization I. This generalization does not express either that participles are normally the most deeply embedded verb, because this is the result of the IPP-effect; cf. (170). The only exception is formed by perfect passive examples, but we have seen that these are special in various other respects as well.

(170) a. dat je die film moet hebben gezien/*zien. [Modal_3–Aux_2–Main_1]
that you that film must have seen/see
b. dat je die film hebt moeten/*gemoeten zien. [Aux_3–Modal_2–Main_1]
that you that film have must_{inf}/$\text{must}_{\text{part}}$ see

Generalization II appears to be unproblematic, and consistent with the full set of data we discussed. Generalization III is accurate for all cases but one; in finite embedded clauses with clusters of two verbs, the embedded main verb may also precede its governing verb. We have the impression that this option is found especially in literary writing, but this should be investigated more thoroughly in the future. It should be noted that the generalizations do not say anything about adjacency of the governing verb and its dependent; this is not an accidental omission but needed for reasons that are discussed in Section 7.4.

7.4. Permeation of verb clusters

In the northern varieties of Standard Dutch, verb clusters are normally impermeable by other elements. As a result, in clusters with the linear order V_n–...–V_2–Main_1, the most deeply embedded main verb (= Main_1) is separated from its dependents that precede it. The examples in (171) illustrate this for a direct object, a complementive, and a manner adverb.

(171) a. dat Jan morgen <dat boek> moet <*dat boek> lezen. [direct object]
that Jan tomorrow that book must read
'that Jan must read that book tomorrow.'
b. dat het hek <knalgeel> is <*knalgeel> geverfd. [complementive]
that the gate bright.yellow has.been painted
'that the gate has been painted bright yellow.'
c. dat Jan <zorgvuldiger> moet <*zorgvuldiger> werken. [manner adverb]
that Jan more.carefully must work
'that Jan must work more carefully.'

Similarly, in clusters with the linear order ...–Main_1–...–V_n, the main verb Main_1 is separated from its dependents that follow it. This is illustrated in (172) for a direct object clause and a prepositional complement.

(172) a. dat Marie me verteld <*dat Jan ziek is> heeft <dat Jan ziek is>.
that Marie me told that Jan ill is has
'that Marie has told me that Jan is ill.'
b. dat Peter gewacht <*op zijn vader> heeft <op zijn vader>.
that Peter waited for his father has
'that Peter has waited for his father.'

Since the generalization that verb clusters cannot be permeated by dependents following the main verb is without exceptions, we can concentrate in what follows on examples of the type in (171). We will restrict our attention to the permeability of verb clusters by the three types of elements given there: direct objects, complementives and manner adverbs will be discussed in separate subsections.

I. Nominal arguments

A notable exception to the ban on permeation of verb clusters are bare objects in N + V collocations like *paardrijden* 'to ride a horse' and *pianospelen* 'to play the piano' in (173).

(173) a. dat Jan <paard> leert <paard> rijden.
that Jan horse learns ride
'that Jan is learning to ride a horse.'
b. dat Marie <piano> heeft <piano> gespeeld.
that Marie piano has played
'that Marie has played the piano.'

Examples of this type need not be a problem for the claim that verb clusters are impermeable provided that we assume that collocations like *paardrijden* or *pianospelen* are compounds if the bare noun permeates a cluster. There are, however, various reasons not to follow this suggestion. First, bare nouns permeating larger verb clusters need not be adjacent to their associate main verb, as shown in (174). The acceptability of the linear order V$_3$–Noun–V$_2$–Main$_1$ shows that assuming a compound analysis is not sufficient to explain why bare nouns may permeate verb clusters.

(174) a. dat Jan <paard> wil <paard> leren <paard> rijden.
that Jan horse wants learn ride
'that Jan wants to learn to ride a horse.'
b. dat Marie <piano> moet <piano> hebben <piano> gespeeld.
that Marie piano must have played
'that Marie must have played the piano.'

Second, the examples in (175) show that the bare noun cannot be pied-piped when the verb undergoes °verb-second. Examples such as (175) contrast sharply with examples such as *Peter stofzuigt graag* 'Peter likes to hoover' where *stofzuigen* 'to hoover' is a compound. The compound analysis of *paardrijden* and *pianospelen* calls for a separate explanation for the impossibility of °pied piping.

(175) a. Jan <*paard> rijdt graag <paard>.
Jan horse rides gladly
'Jan likes to ride a horse.'
b. Marie <*piano> speelt graag <piano>.
Marie piano plays gladly
'Marie likes to play the piano.'

Third, participle formation cannot be based on the presumed compounds *paardrijden* and *pianospelen,* as is clear from the fact that the prefix cannot precede the bare noun in (176). Examples such as (176) contrast sharply with examples such as *Peter heeft gestofzuigd*, in which *stofzuigen* 'to hoover' is a compound.

(176) a. Jan heeft <paard> ge- <paard> -reden.
Jan has horse GE- ridden
'Jan has ridden a horse.'
b. Marie heeft <piano> ge- <*piano> -speel-d.
Marie has piano GE- play-D
'Marie has played the piano'.

The examples in (174) to (176) show that the compound analysis of *paardrijden* and *pianospelen* does not fully solve the problem, and actually creates a number of new problems. The alternative analysis is that there is in fact no general ban on permeation of verb clusters by nominal arguments of the main verb. The alternative finds support in the fact that certain varieties of Standard Dutch spoken in Flanders do also allow permeation of the verb cluster by bare (singular or plural) objects that do not form a collocation with the verb. In West-Flanders permeation is even possible by indefinite and definite objects, but it is not clear to us whether this can be considered part of the regional variety of Standard Dutch or whether it should be considered a dialectal property. The examples in (177) are taken in a slightly adapted form from Barbiers et al. (2008: Section 2.3.1), to which we refer the reader for further discussion of the regional spread of these forms of permeability of verb clusters.

(177) a. dat Jan morgen <brood> wil <$^{\%}$brood> eten.
that Jan tomorrow bread wants eat
'that Jan wants to eat bread tomorrow.'
b. dat Jan <varkens> wil <$^{\%}$varkens> kopen.
that Jan pigs wants buy
'that Jan wants to buy pigs.'
c. dat Jan <een nieuwe schuur> moet <$^{\%}$een nieuwe schuur> bouwen.
that Jan a new barn must build
'that Jan must build a new barn.'
d. dat Jan <de auto> moet <$^{\%}$de auto> verkopen.
that Jan the car must sell
'that Jan has to sell the car.'

II. Complementives and verbal particles

Although adjectival complementives normally precede the verb cluster as a whole, many (but not all) speakers accept permeation of the cluster if the adjective is monosyllabic. In other words, there is a sharp contrast between example (178a) and (178b). Example (178c) further shows that in order to be able to permeate the verb cluster the adjectival phrase must be simple, in the sense that it cannot be modified by, e.g., a degree adverb or be otherwise complex.

(178) a. dat het hek <knalgeel> is <*knalgeel> geverfd.
that the gate bright.yellow has.been painted
'that the gate has been painted bright yellow.'
b. dat het hek <geel> is <geel> geverfd.
that the gate yellow has.been painted
'that the gate has been painted yellow.'

c. dat het hek <heel geel> is <*heel geel> geverfd.
that the gate very yellow has.been painted
‘that the gate has been painted very yellow.’

It has been suggested that the acceptability of permeation of the verb cluster in examples such as (178a) is due to complex predicate formation, that is, incorporation of the adjectival complement into the verb, as a result of which a compound-like element is created; cf. Neeleman (1994b). There are various reasons not to follow this suggestion. The most important one is that bare adjectives that permeate larger verb clusters need not be adjacent to the verb which they are assumed to form a complex predicate with. The acceptability of the order V_3–Adjective–V_2–$Main_1$ in (179a) shows that assuming an incorporation analysis is not sufficient to explain why bare adjectives may permeate verb clusters. On the basis of the incorporation analysis we would furthermore expect that the adjective could be pied-piped under verb-second; the fact illustrated in (179b) that this expectation is not borne out thus forces us to assume additional stipulations in order to account for this.

(179) a. dat het hek <geel> moet <geel> worden <geel> geverfd.
that the gate yellow must be painted
‘that the gate must be painted yellow.’

b. Jan <*geel> verft het hek <geel>.
Jan yellow paints the gate
‘Jan is painting the gate yellow.’

Verbal particles, which are also analyzed as complementives in Section 2.2, are even better suited to illustrate that there is no absolute ban on permeation of verb clusters. All speakers of Dutch accept examples of the type in (180).

(180) a. dat Jan alle koekjes <op> heeft <op> gegeten.
that Jan all cookies up has eaten
‘that Jan has eaten up all the cookies.’

b. dat Jan alle koekjes <op> wil <op> eten.
that Jan all cookies up wants eat
‘that Jan wants to eat up all the cookies.’

Again, it is often suggested that the permeation of the verb clusters in examples such as (180) is due to the fact that we are dealing with compound-like verbs. That this is not evident is clear from the fact that particles that permeate verb clusters do not need to be adjacent to their associate verbs (Bennis 1992), and from the fact that they must be stranded when the verb undergoes verb-second.

(181) a. dat Jan alle koekjes <op> heeft <op> willen <op> eten.
that Jan all cookies up has want eat
‘that Jan has wanted to eat up all the cookies.’

b. Jan <*op> eet alle koekjes <op>.
Jan up eat all cookies
‘Jan is eating up all the cookies.’

The examples in (182a) further show that many speakers also allow postpositions to permeate verb clusters, and (182b) shows the same holds for the second part of circumpositions like *over ... heen* 'over'; see van Riemsdijk (1978) and Section P5.2.2 for more discussion. This is, however, not generally accepted for stranded prepositions like *op* in (182a), although southern speakers are more permissive in this respect.

(182) a. dat Jan daarnet de boom <in> is <in> geklommen.
that Jan just.now the tree into is climbed
'that Jan has just climbed into the tree.'
b. dat Marie daarnet over het hek <heen> is <heen> gesprongen.
that Marie just now over the fence HEEN is jumped
'that Marie has just jumped over the fence.'
c. dat Jan er snel <in> is <$^{\%}$in> gedoken.
that Jan there quick in is dived
'that Jan dived into it quickly.'

Barbiers et al. (2008: Section 2.3.1) further show that especially West-Flemish speakers allow complex PP-complements to permeate verb clusters.

(183) dat Marie <naar Jan> moet <$^{\%}$naar Jan> bellen.
that Marie to Jan must call
'that Marie must call Jan.'

III. Adverbs

Adverbs are normally not allowed to permeate verb clusters. Given that manner adverbs must be directly construed with the main verb, they are best suited to illustrate this fact. An example of an adverb modifying a verb phrase is given in (184b).

(184) a. dat Jan <zorgvuldig> moet <$^{\%}$zorgvuldig> werken.
that Jan carefully must work
'that Jan must work carefully.'
b. dat Jan <vroeg> moet <$^{\%}$vroeg> opstaan.
that Jan early must stand.up
'that Jan has to rise early.'

The percentage signs again indicate that permeation is not rejected by all speakers; it is acceptable for many speakers from West-Flanders; see Barbiers et al. (2008: Section 2.3.1).

IV. Conclusion

The previous subsections have shown that there is no general ban on permeation of verb clusters: there is a clear tendency to avoid it, but there are many exceptions and there is a considerable regional variation; more detailed information on regional variation can be found in Sections 5.2.3 and 6.2, as well as Barbiers (2008:ch.2). There have been attempts to account for some of the cases by assuming that they involve compound verbs or (syntactically created) complex predicates, but we have seen that this still does not fully account for all the facts and sometimes even creates new problems. Furthermore, it is not easy to extend such accounts in order to account for permeation of verb clusters in some of the more permissive varieties of Dutch like West-Flemish, which also allows definite objects and adverbs to permeate verb clusters. Regardless of whether these varieties should be considered as dialects or as instantiations of a regional variety of Standard Dutch, this is quite telling since we have reasons for assuming that the situation in West-Flemish corresponds to the older stages of current Standard Dutch. The limited amount of permeation we found in the northern variety of Standard Dutch has arisen by a gradual reduction of the set of elements that could permeate the verb cluster; we refer the reader to Hoeksema (1994) and Van der Horst (2008) for a more detailed discussion of this diachronic development.

7.5. Bibliographical notes

Verb clustering, which was also a recurrent topic in Section 5.2 and Chapter 6, has been on the research agenda since Bech (1955) and Evers (1975), and still raises numerous questions and difficulties (both of a descriptive and of a more theoretical nature). Evers' account of verb clustering, which became the standard in early generative grammar, is as follows: in accordance with the general OV-nature of Dutch the bare infinitival clause is base-generated to the left of the °matrix verb, as in (185a), and the verbal °head is subsequently extracted from this clause and right-adjoined to the matrix verb, as in (185b). This head movement operation has become known as Verb Raising and is supposed to result in the formation of a monoclausal structure.

(185) a. dat Jan [[het boek naar Els brengen] wil]. [underlying structure]
that Jan the book to Els bring wants
b. dat Jan [het boek naar Els [wil brengen]]. [structure after Verb Raising]
that Jan the book to Els wants bring

Since the early 1990's there have also been analyses that assume that infinitival clauses are base-generated to the right of the matrix verb, as in (186a). The surface order can then be derived as in (186b) by leftward movement of the non-verbal elements in the clause, as in (186b): see Coppen & Klein (1992), Den Besten & Broekhuis (1992), Zwart (1997), and many others since; Zwart (2011: Part III) provides an extensive review of proposals of this type. An alternative analysis, which is given in (186c), is based on the assumption that the German surface order *bringen will* is derived by leftward movement of the entire infinitival clause; see, e.g., Lattewitz (1993/1997), Broekhuis (1997a), and Barbiers (2005), The Dutch split pattern can then be derived in the same way by assuming that the infinitive has been extracted from the infinitival clause before the latter is moved leftwards (that is, by so-called remnant movement); see, e.g., Koopman & Szabolcsi (2000), Hinterhölzl (2006), and Broekhuis (2008:ch.5).

(186) a. dat Jan [wil [*het boek naar Els brengen*]]. [underlying structure]
that Jan wants the book to Els bring
b. dat Jan *het boek naar Els* [wil [$t_{\text{het boek}}$ $t_{\text{naar Els}}$ brengen]]. [leftward mvt]
that Jan the book to Els wants bring
c. dat Jan [$_{\text{VP}}$ het boek naar Els t_{brengen}] [wil brengen [t_{VP}]]. [remnant mvt.]
that Jan the book to Els wants bring

These movement approaches, of course, also suggest different solutions to the two (b)-examples in (187), in which the verb cluster is permeated by other material. Proponents of the verb movement approach, for example, may assume that not only verbal heads may right-adjoin to the matrix verb but also subparts of verbal projections (as proposed in Den Besten & Edmondson 1983), and proponents of the leftward movement approach may assume that languages vary with respect to the amount or type of leftward movement that they require.

(187) a. dat Jan *boeken naar Els* wil *brengen*.
that Jan books to Els wants bring
'that Jan wants to bring books to Els.'
b. %dat Jan *boeken* wil *naar Els brengen*.
b′. %dat Jan wil *boeken naar Els brengen*.

There are also approaches to verb clustering that do not involve syntactic movement at all; see Haegeman & Van Riemsdijk (1986), Haider (2003), Kempen & Harbusch (2003), and Williams (2003). Verb clustering is probably one of the most ardently debated issues in Germanic linguistics, and the sketch given above consequently covers merely the tip of the iceberg. A good and more extensive review of the theoretical literature on verb clustering can be found in Wurmbrand (2006).

Glossary (Volumes 1 & 2)

Absolute *met*-construction:
A prepositional phrase headed by the preposition *met* ‘with’. The complement of *met* consists of a noun phrase and some other category which is predicated of this noun phrase. Some examples are provided in (i); the absolute constructions are in brackets.

(i) a. [Met Peter ziek] kunnen we die vergadering niet houden.
with Peter ill can we that meeting not hold
b. [Met Peter in het ziekenhuis] kunnen we die vergadering niet houden.
with Peter in the hospital can we that meeting not hold

Accidental coreference:
A notion used to refer to the fact illustrated in (ia) that a referential personal pronoun such as *hij* ‘he’ may be coreferential with an element used earlier in the discourse without there being a °binding relation between the two. The availability of accidental coreference in (ia) makes it unnecessary to appeal to binding in order to account for the fact that the two elements may be coreferential.

(i) a. Jan$_i$ lachte. Hij$_i$ vond the grap leuk.
Jan laughed he found the joke amusing
b. Jan$_i$ beloofde dat hij$_i$ zou komen.
Jan promised that he would come

It can nevertheless be shown that pronouns can be bound by an antecedent by taking into account referential dependencies between pronouns and quantifiers like *iedereen* ‘everybody’ or *niemand* ‘nobody’. Example (iia) shows that accidental coreference is not possible with such quantified expressions. The fact that the pronoun can be referentially dependent on these elements in (iib) shows that binding must be involved. Since the bound pronoun has the function of a variable in predicate calculus, cases like (iib) are known as bound variable constructions.

(ii) a. *Iedereen$_i$/Niemand$_i$ lachte. Hij$_i$ vond the grap (niet) leuk.
everbody/nobody laughed he found the joke not amusing
b. Iedereen$_i$/Niemand$_i$ beloofde dat hij$_i$ zou komen.
everbody/nobody promised that he would come

Accusative case:
The °case prototypically assigned to the theme argument of the main verb in simple clauses in the active voice. This case can also be assigned to the SUBJECT of a °complementive, or to SUBJECT of an infinitival clause in so-called °AcI-constructions. Noun phrases marked with accusative case are often referred to as direct objects. German has a set of prepositions that assign accusative case to their nominal complement; this may also be the case in Dutch but it is hard to establish due to the fact that accusative case is not morphologically distinct from dative case in Dutch.

AcI-construction:

The abbreviation AcI stands for *Accusativus cum Infinitivo* (accusative with infinitive). The AcI-construction is an infinitival clause in which the subject is not left implicit but realized as an accusative noun phrase. Such constructions only occur as the complement of the causative/permissive verb *laten* ‘to make/let’ and perception verbs like *zien* ‘to see’ and *horen* ‘to hear’. In (i) the accusative subject of the infinitival clause is in italics.

(i) a. Jan laat [*het meisje*/*haar* een liedje zingen].
Jan lets the girls/her a song sing
b. Jan zag/hoorde [*het meisje*/*haar* vertrekken].
Jan saw/heard the girl/her leave

Adicity:

The adicity (or valency) of a lexical head (verb, noun, adjective, preposition) concerns the number of arguments this lexical head takes. A monadic head takes one, a dyadic head takes two, and a triadic head takes three arguments. Lexical heads that do not take any arguments are called avalent.

Adjunct:

A constituent in the domain of a lexical head H that is not selected by H. An adjunct is therefore distinct from an argument, which is a constituent that is selected by H. Adjuncts and arguments differ in that the former are generally optional, whereas arguments are generally obligatorily present (or at least semantically implied). In (i), the PP *in de keuken* ‘in the kitchen’ is optional and can be considered an adjunct, whereas the NP *de aardappelen* ‘the potatoes’ is virtually obligatory, and can be considered an argument of the verb *schillen* ‘to peel’.

(i) a. Jan schilt de aardappelen (in de keuken).
b. Jan schilt $^{*?}$(de aardappelen) in de keuken.
Jan peels the potatoes in the kitchen

Adverb:

The notion adverb does not denote a set of entities with a specific categorial status, as do the notions verb, noun, adjective and preposition, but rather a set of lexical elements that can have a certain syntactic function in the clause, more specifically that of an adverbial phrase. Our use of the notion of adverb should therefore be seen as shorthand for “adverbially used adjective” given that many adverbs exhibit adjectival properties: they may be used attributively or predicatively in other contexts, or exhibit typical syntactic or morphological properties like the ones given in (i).

(i) a. Modification by *erg*/*heel*/*zeer* ‘very’
b. Comparative and superlative formation
c. *On-* prefixation
d. Having an adjectivizing suffix

Despite the fact that we do not acknowledge the existence of a lexical category “adverb”, it cannot be denied that there are certain adverbs, like the °intensifiers *zeer* ‘very’ and *heel* ‘very’ mentioned in (ia), for which there is little direct syntactic or morphological evidence that they are adjectival in nature. However, the fact that they cannot normally be inflected for tense and agreement shows that they are not verbs, and the fact that they can neither be preceded by a determiner nor appear in an argument position strongly suggests that they are not nouns either. Therefore, we provisionally conclude that they must be adjectives, which is supported by the fact that they share the semantic property of being able to modify an adjective.

Adverb tests:
In cases of modification of a verbal projection, at least two types of adverbial phrases should be distinguished. The first type involves modification of the proposition expressed by the clause, which is therefore referred to as a clause adjunct. Clauses that contain this type of adverbial phrase can be paraphrased as in (ia); a concrete example is given in (ia′&a″). The second type involves modification of the verb (phrase) only, and is referred to as a VP adjunct. Clauses that contain this type of adverbial phrase can be paraphrased as in (ib), in which the pronoun must be construed as identical to the subject of the clause; a concrete example is given in (ib′&b″). See Section A8.2 for further discussion.

(i) a. Clause adjunct: Het is ADVERB zo dat CLAUSE
a′. Jan werkt natuurlijk.
Jan works of.course
a″. Het is natuurlijk zo dat Jan werkt.
it is of.course the.case that Jan works
b. VP adjunct: $[_{\text{CLAUSE}}$ subject$_i$ ...] en pronoun$_i$ doet dat ADVERB
b′. Jan lacht hard.
Jan laughs loudly
b″. Jan$_i$ lacht en hij$_i$ doet dat hard.
Jan laughs and he does that loudly

Aktionsart:
The notion of Aktionsart (sometimes also called INNER ASPECT) refers to the internal temporal organization of the event denoted by (the lexical projection of) a verb, and thus involves questions like (i) whether the event is construed as occurring at a single point in time (momentaneous aspect) or as evolving over time (durative aspect), (ii) whether the event is inherently bounded in time, and, if so, whether the event is bounded at the beginning (ingressive/inchoative aspect), at the end (terminative aspect) or both, (iii) whether the verb expresses a single event or a series of iterated events, etc. There are many ways of classifying verbs and verb phrases according to their Aktionsart: see Section 1.2.3.

Anticipatory pronoun/pronominal PP:
Clauses may have argument status with respect to a lexical head. Generally speaking, however, they do not occur in the regular argument position, but are in extraposed position. For instance, if the argument position is part of a verbal projection, it may optionally be occupied by the pronoun *het* ‘it’, which is called the anticipatory pronoun, as in (i). If the clause is part of a prepositional complement,

the anticipatory pronominal PP *er*+P may optionally occur, as in (ii). See °R-extraction for a discussion of the fact that the anticipatory pronominal PP *erover* is normally split.

(i) Jan betwijfelt (het) of Marie komt.
Jan doubts it whether Marie comes
'Jan doubts whether Marie will come.'

(ii) Jan is (*er*) boos (*over*) dat Marie niet komt.
Jan is there angry about that Marie not comes
'Jan is angry that Marie won't come.'

Argument:
An argument is a constituent in the domain of a lexical head H that is selected by H. An argument is distinct from an °adjunct, which is a constituent not selected by H. Arguments and adjuncts differ in that the former are normally obligatorily present (or at least semantically implied), whereas adjuncts are optional. In (i), the noun phrase *de aardappelen* 'the potatoes' is virtually obligatory and can be considered an argument of the verb *schillen* 'to peel', whereas the PP *in de keuken* 'in the kitchen' is optional and can be considered an adjunct.

(i) a. Jan schilt $^{*?}$(de aardappelen) in de keuken.
b. Jan schilt de aardappelen (in de keuken).
Jan peels the potatoes in the kitchen

Arguments are usually associated with verbs: verbs have argument structures, specifying the number and °thematic roles of their arguments. An intransitive verb like *lachen* 'to laugh', for example, has one (agentive) argument, a transitive verb like *lezen* 'to read' has two arguments, an agent and a theme, and a ditransitive verb like *geven* 'to give' has three arguments. The arguments of these verbal predicates fill slots in the predicate frame implied by these verbs: *lachen* is a one-place predicate LACHEN (x) and the agentive argument fills the single argument slot; *lezen* is a two-place predicate LEZEN (x,y) and the two arguments fill the two slots in the predicate frame; *geven* is a three-place predicate and again the three arguments fill the slots in the predicate frame GEVEN (x,y,z).

(ii)	• Predicate		• Example
a.	LOPEN$_V$(Agent) walk	a′.	[Jan]$_{Agent}$ [loopt]$_{Pred}$ Jan walks
b.	LEZEN$_V$ (Agent, Theme) read	b'.	[Marie]$_{Agent}$ [leest een krant]$_{Pred}$ Marie reads a newspaper
c.	GEVEN$_V$ (Agent, Theme, Recipient) give	c′.	[Jan]$_{Agent}$ [geeft Marie een boek]$_{Pred}$ Jan gives Marie a book

The arguments in the predicate frame of two- and three-place predicates are not all of the same nature: filling the *y* and *z* slots in a sense completes the predicate, as a result of which it can be predicated of the argument placed in the *x* slot. In syntactic terms, the argument filling the *x* slot of a predicate normally corresponds to the subject of the clause, whereas the arguments filling the *y* and *z* slots correspond to the objects of the clause. Since the objects have the function of creating a complete predicate, they are often referred to as the °complements or INTERNAL ARGUMENTs of the verb. The subject, on the other hand, will be referred to as the EXTERNAL ARGUMENT of the verb, the argument which the complete verbal predicate is predicated of. In the lexical frames in (ii), the external argument is underlined in order to distinguish it from the complements. Note that there are several complications that are not discussed here: for instance, °unaccusative verbs are assumed not to have an external argument but to be predicated of their internal argument (cf. V2.1).

Since adjectives and nouns function as predicates as well, they also take arguments. This is shown in (iii), where the adjectival/nominal noun phrase is predicated of the noun phrase *Jan*, which therefore functions as the first argument. Since the usual labels for semantic roles are created especially for expressing the roles of the arguments in the event structure denoted by verbal predications, we will simply refer to the first argument of non-verbal predicates as the REFERENT (Ref), that is, the entity with regard to which the property denoted by the adjectival/nominal noun applies.

(iii) • AARDIG$_A$ (Ref)
a. [Jan]$_{Ref}$ is [aardig]$_{Pred}$.
Jan is kind
a′. Ik vind [Jan]$_{Ref}$ [aardig]$_{Pred}$.
I consider Jan kind

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

Argument structure:
See °argument.

Atelic:
See °telic.

Binding:
A noun phrase (typically a pronoun) is said to be bound if it is coreferential with a °c-commanding antecedent. Noun phrases differ with respect to the syntactic domain in which they must or can be bound. This is clear from the fact illustrated by the examples in (ia&b) that reflexive and referential personal pronouns like *zichzelf* and *hem* are in complementary distribution. Referential expressions like *de jongen* in (ic) normally remain free (= not bound) within their sentence.

(i) a. Ik denk dat Jan$_i$ zichzelf$_i$/*hem$_i$ bewondert.
I think that Jan himself/him admires
‘I think that Jan admires himself.’
b. Jan$_i$ denkt dat ik hem$_i$/*zichzelf$_i$ bewonder.
Jan thinks that I him/himself admire
‘Jan thinks that I admire him.’
c. *Jan$_i$ denkt dat ik de jongen$_i$ bewonder.
Jan thinks that I the boy admire

Data like (i) have given rise to the formulation of the three binding conditions in (ii), in which the notion of local domain has not been defined. For the examples in (i), we may provisionally assume that it refers to the minimal clause containing the relevant noun phrase, but there are data that complicate matters; cf. Section N5.2.1.5, sub III, for a more detailed discussion.

(ii) • Binding conditions
a. Anaphors like *zichzelf* 'himself' must be bound in their local domain.
b. Pronouns like *hem* 'him' must be free (= not bound) in their local domain.
c. Referential expressions like *Jan* or *de jongen* 'the boy' must be free.

Blocking:
The phenomenon that a specific structure is blocked by a structure which is normally more conventional or simpler. Originally, blocking is a morphological notion but it is here extended to syntax; the notion of syntactic blocking has become more familiar since the advent of optimality theory.

Bound variable:
See °Accidental coreference

Bridge verb:
Wh-movement may sometimes extract interrogative argument/adjunct phrases from embedded complement clauses. Whether such extraction is possible or not depends on the verb selecting the complement clause. Verbs that allow such extraction are called bridge verbs. The examples in (ia&b) show that bridge verbs are normally non-factive: factive verbs like *weten* 'to know' normally does not license *wh*-extraction. It should be noticed, however, that *wh*-extraction may also occur in relative constructions like (ic), and in such constructions the factive verbs *weten* can be used as a bridge verb. The ability to function as a bridge verb may therefore depend on the type of construction involved.

(i) a Wat$_i$ denk/*weet je [dat Peter t_i gekocht heeft]?
what think/know you that Peter bought has
'What do you think that Peter has bought?'
b. Hoe$_i$ denk je [dat ik die auto t_i kan repareren]?
how think you that I that car can repair
'How do you think that I can repair that car?'
c. Hij liep naar de plaats [waar$_i$ hij wist [dat de schat t_i lag]].
he walked to the place where he knew that the treasure lay

Case:
Many languages express case on the nominal phrases in the clause. A distinction is often made between lexical and structural case. LEXICAL CASE is defined by the fact that it correlates in a one-to-one fashion with a certain meaning or semantic function. In languages like Dutch, use of lexical cases is extremely rare given that it normally expresses semantic functions by means of PPs.

STRUCTURAL CASE depends on a so-called governing lexical element and is prototypically associated with certain thematic roles assigned by verbs: nominative case is normally assigned to agents, accusative case to themes, and dative case to goals, recipients or experiencers. This means that transitive verbs typically govern accusative case, ditransitive verbs accusative and dative case, and that the so-called NOM-DAT verbs govern dative case. Structural case can, however, also be governed by prepositions: In German, for example, prepositions govern accusative, dative or genitive case. Nominative case is also considered a structural case, but one that is not governed by verbs or prepositions but by the tense feature (past/present) of finite clauses.

Although structural cases are often prototypically assigned to noun phrases with certain thematic roles, the assignment of structural case differs from that of lexical case in that it does not correlate in a one-to-one fashion with such thematic roles. For example, the theme argument of a transitive verb is assigned accusative case in active but nominative case in passive constructions; cf. (i). It is therefore normally assumed that structural case is not determined by semantic function, but assigned to noun phrases in certain structural position (hence its name): accusative case is assigned to noun phrases in direct object position of the clause, whereas nominative case is assigned to noun phrases in subject position. The case frame alternation arises due to the fact that passivization blocks assignment of accusative case by the main verb, so that the theme argument must be assigned nominative by the tense features; in order to make that possible the agent argument must in its turn be suppressed or expressed by means of a *door*-PP.

(i) a. Jan bezocht Marie/haar gisteren. [active]
Jan visited Marie/her$_{\text{theme+accusative}}$ yesterday
b. Marie/zij werd gisteren (door Jan) bezocht. [passive]
Marie/she$_{\text{theme+nominative}}$ was yesterday by Jan visited
‘Marie/she was visited yesterday.’

The account of passivization sketched above is built on the premise that noun phrases must be assigned case. Since case is not morphologically expressed in all languages, a distinction is made between morphological and abstract case. Dutch and German differ in that German has morphological but Dutch has abstract case. That Dutch and German make similar case distinctions is clear from the fact that case frame alternations take a similar shape in the two languages. For example, both German and Dutch have two types of passive: the regular passive, in which the accusative (direct) object is promoted to subject, and the so-called semi-passive, in which the dative (indirect) object is promoted to subject; see Section V4.3 for Dutch and, e.g., Drosdowski (1995: Section 2.2.3) and König & Van der Auwera (1994:378-81;471) for German. There is reason to assume that the two patterns arise due to the fact that the regular passive blocks assignment of accusative case and semi-passive blocks assignment of dative case. But, of course, this account only holds water if we assume that dative and accusative case are also present in Dutch despite the fact that they are not morphologically expressed.

C-command:

C-command refers to a structural relation between the constituents in a phrase, which is generally defined in structural terms of a tree diagram: α c-commands β if (i) α ≠ β, (ii) α does not dominate β, and (iii) the node that immediately dominates α also dominates β. C-command can be partly derived from the selection relations obtaining in the clause. For example, the verb *wachten* in (1a) c-commands the PP *op zijn vader* as well as all elements contained in it (that is, the preposition *op*, the noun phrase *zijn vader*, the possessive pronoun *zijn* and the noun *vader*), whereas the preposition *op* c-commands the noun phrase *zijn vader* as well as all elements contained in it (the possessive pronoun *zijn* and the noun *vader*). The verb *horen* in (ib) c-commands its infinitival object clause as well as all elements contained in it (the noun phrase *Peter*, the verb phrase *een liedje zingen*, the noun phrase *een liedje*, the article *een*, and the noun *liedje*).

(i) a. Jan wacht [op zijn vader].
b. Jan hoorde [Peter een liedje zingen].

If we restrict ourselves to clausal constituents, the c-command relation can be expressed by means the functional hierarchy in (ii), where the notion A > B expresses that A c-commands B and everything that is embedded in B. In example (ia), for instance, the subject *Jan* c-commands the PP-object *op zijn vader* as well as everything that is embedded in this PP. In (ib), the subject of the matrix clause, *Jan*, c-commands the infinitival object clause *Peter een liedje zingen* as well as the two arguments of this clause. Furthermore, these arguments of the infinitival clause are also in a c-command relation: the subject *Peter* c-command the object *een liedje*.

(ii) C-command hierarchy: subject > indirect object-NP > direct object > indirect object-PP > PP-object > adjunct

Many restrictions on syntactic relations can be expressed by appealing to this notion: movement, for example, is only possible if the landing site c-commands the base position of the moved element, and °binding of an anaphor or a pronoun is only possible if the antecedent c-commands it.

Circumfix:
A discontinuous affix partly preceding and partly following the input morpheme/

Clausal adverb:
See °adverb tests.

Clause splitting:
See °verb clustering.

Complement:
The °arguments of a lexical head H (V, N, A or P), with the exception of the subject. In generative grammar, complements are generally called INTERNAL ARGUMENTS, whereas the subject is called the EXTERNAL ARGUMENT; an exception is the subject of an °unaccusative verb, which is generally assumed to be an internal argument. Internal arguments of verbs are generally obligatorily present (or at least semantically implied), whereas external arguments can occasionally be suppressed, for instance in the passive construction. The term complement is sometimes also used for °complementives and verbal projections selected by non-main verbs.

Complementation:
See °complement.

Complementive:
This notion refers to the predicative complement of the verb in copular, resultative or *vinden*-constructions. In (i) some examples are given with adjectival predicates. A complementive may also be a nominal or a (spatial) adpositional phrase, e.g., *Jan is leraar* 'Jan is a teacher' and *Jan heeft het boek in de kast gelegd* 'Jan has put the book in the cupboard''. In prosodically neutral sentences complementives are left-adjacent to the clause-final verb. This is especially clear with PP-complementives, as these differ from other PPs in that they cannot undergo °PP-over-V: **Jan heeft het boek gelegd in de kast.*

(i) a. Jan is *erg aardig*.
Jan is very kind
b. Jan slaat de hond *dood*.
Jan hits the dog dead
c. Ik vind Jan *erg aardig*.
I consider Jan very nice

Constituency test:
Test involving movement of a string of words into the sentence-initial position, that is, the position immediately preceding the finite verb in main clauses. Any string of words that can occupy this position in Dutch is considered a constituent. Satisfying this test is sufficient for assuming constituency, but not necessary given that constituents can be embedded within larger constituents that may function as °islands for extraction. The test provides reasonably reliable results when it comes to the determination of the clausal constituents (the arguments and the adjuncts of the clause). Other tests that are often used are coordination and clefting.

Contraction verb:
The stem of a contraction verb ends in a long vowel, and the infinitive is formed by means of an -*n* instead of the regular -*en* ending. Many past participles of the contraction verbs are formed by placing the morpheme *ge*- in front of the infinitival form (which is absent if the infinitive is already prefixed). The present participle of these verbs is formed by adding -*nd* to the stem. The participles of the contraction verbs are special in that they normally cannot be used attributively.

(i) Contraction verbs

STEM	INFINITIVE	TRANSLATION	PAST PARTICIPLE	PRESENT PARTICIPLE
doe	doen	to do	gedaan	doend
ga	gaan	to go	gegaan	gaand
sta	staan	to stand	gestaan	staand
verga	vergaan	to decay/to be wrecked	vergaan	vergaand
zie	zien	to see	gezien	ziend

Control:
The notion of control is used (a) for characterizing an agent that is able to consciously affect the eventuality denoted by the verb, and (b) for the relation between the phonetically empty °PRO-subject of infinitival clauses and a noun

phrase (the controller) that determines its reference. In the latter case, the three types of control in (i) are normally distinguished: cf. Williams (1980). The main distinction is that between examples like (ia&b), which involve control by the subject/object of the matrix clause, and examples such as (ic), in which PRO has no controller and receives a generic or arbitrary interpretation. Subject/object control is indicated by means of coindexation and the index *arb(itrary)* is used to indicate that the generic/arbitrary reading is intended.

(i) a. Jan$_i$ beloofde Marie$_j$ [(om) PRO$_{i/*j}$ dat boek te lezen]. [subject control]
Jan promised Marie COMP that book to read
'Jan promised Marie to read that book.'
b. Jan$_i$ verzocht Marie$_j$ [(om) PRO$_{j/*i}$ dat boek te lezen]. [object control]
Jan asked Marie COMP that book to read
'Jan asked Marie to read that book.'
c. Jan keurt het af [(om) PRO$_{arb}$ te vloeken]. [generic interpretation]
Jan disapproves it prt. COMP to curse
'Jan disapproves of cursing.'

A recurring theme in generative grammar is whether subject/object control should be considered a local syntactic dependency, or whether it is determined by semantic and/or pragmatic considerations. The review of this question in Section V4.3 suggests that the answer to this question depends on the type of infinitival clause involved.

Conversion:
A morphological process by which some input word becomes part of another word class without the addition of a (phonetically realized) affix. A prototypical example is nominalization of a verb such as *wandelen* 'to walk', as in *[Wandelen in het bos] is gezond* 'Walking in the wood is healthy'.

Cooperative principle:
A pragmatic principle introduced in Grice (1975) which contributors to an ordinary conversation can be expected to follow: 'Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged (Grice 1989:26).

Core grammar:
Core grammar refers those aspects of the internalized language system that arise spontaneously in the language learning child by exposure to utterances in the standard language. This notion stands is opposed to the periphery of grammar, which refers to those properties of the standard language that are explicitly taught at some later age.

Coordinate Structure Constraint:
This constraint prohibits movement of a conjunct out of a coordinated structure: for example, *wh*-movement of the second conjunct in (ia) is impossible, as shown in (ia′). The constraint also prohibits subextraction from one of the conjuncts: for example, subextraction from the second conjunct in (ib) is excluded, as shown in (1b′). An exception to the ban on subextraction is when the movement applies in a so-called °Across-the-Board fashion, that is, simultaneously affects all conjuncts.

(i) a. Jan heeft [[een artikel] en [een boek]] gelezen.
Jan has an article and a book read
a′. *Wat$_i$ heeft Jan [[een artikel] en [t_i]] gelezen?
what has Jan an article and read
b. Jan heeft [[een boek van Peter gestolen] en [een CD aan Marie gegeven]].
Jan has a book from Peter stolen and a CD to Marie given
b′. *Wat heeft Jan [[een boek van Peter gestolen] en [t_i aan Marie gegeven]]?
what has Jan a book from Peter stolen and to Marie given

Dative case:
The °case prototypically assigned to a goal, a recipient or an experiencer argument of the main verb in active clauses. Noun phrases marked with dative case are often referred to as indirect objects. German has a set of prepositions that assign dative case to their nominal complement; this may also be the case in Dutch but this is hard to establish due to the fact that dative case is not morphologically distinct from accusative case in Dutch. There is reason to assume that certain adjectives are able to assign dative case in Dutch; cf. A2.2.

DO-subject:
The subject of a passive or an °unaccusative verb. The term DO-subject expresses that the subjects of unaccusative and passive verbs have various properties in common with the direct objects of transitive verbs. Other terms referring to the same notion are DERIVED SUBJECT and LOGICAL OBJECT.

Dyadic verb:
See °adicity.

***Easy-to-please* construction:**
A construction named after the English reference sentence *John is easy to please*. The various types of this construction that can be found in Dutch as well as a proposal for analysis can be found in Section A6.5.4.1.

Eventuality:
Cover term used to refer to the denotation of verbs that unifies notions like state, processes, events, etc. A more or less equivalent term is state-of-affairs.

Expletive:
The element *er* in existential or presentational constructions like (ia&b). Example (ic) shows that, unlike the English expletive *there*, expletive *er* can also occur in transitive clauses, provided that the direct object is non-specific indefinite. The fact that (ic) is marked with a definite object may be part of a more general phenomenon: expletive *er* is often disfavored (though acceptable) in the presence of some presuppositional element. This is illustrated in (ic′) by means of the locational pro-form *daar* ‘there’. See Section 8.1.4 for more discussion.

(i) a. dat er een probleem met de verwarming is.
that there a problem with the heating is
‘that there is a problem with the heating.’

b. dat er een man op straat loopt.
that there a man in the.street walks
‘that there is someone walking in the street.’
c. dat er iemand een/$^{??}$het lied zingt.
that there someone a/the song sings
c′. dat ($^{??}$er) daar iemand een lied zingt.
that there there someone a song sings

The notion expletive is sometimes also used to refer the personal pronoun het in constructions like *Het regent*, for which it has been claimed that the pronoun does not function as a “true” argument of the verb in the sense that it has not been assigned a °thematic role.

Extraposition:
A movement operation assumed to place a clause to the right of the verbs in clause-final position. Under the traditional OV-analysis of Dutch, complement clauses are base-generated to the left of the main verb, as in (ib), and obligatorily moved to the right of the verb. Extraposition of PPs is called °PP-over-V. Extraposition of noun phrases and APs is not possible in Dutch.

(i) a. dat Jan [dat hij ziek is] denkt ⇒
that Jan that he ill is thinks
b. dat Jan t_i denkt [dat hij ziek is]$_i$

Since Kayne (1994) there has been an ongoing debate concerning whether (ib) is derived from (ia) by means of Extraposition or whether the complement is base-generated to the right of V; cf. Baltin (2006) and Broekhuis (2008:ch.2) for a review of a number of the currently available proposals. In this work, we will use the notion of extraposition as a purely descriptive term in order to refer to the placement of the clause to the right of the verb.

Floating quantifier:
Floating quantifiers are quantifiers which are associated with noun phrases occurring elsewhere in the sentence, but with which they do not form a syntactic constituent. An example is *allen* in (i), which is associated with the subject of the clause *die jongens*.

(i) a. Die jongens zijn allen vertrokken.
those boys are all left
‘Those boys have all left.’

The notion of a floating quantifier reveals a particular transformational outlook on the phenomenon: it is often assumed that the quantifier and the noun phrase it quantifies form an underlying constituent which is split up in the course of the syntactic derivation via either movement of the quantifier or movement of the remnant noun phrase; cf. Kayne (1975) and Sportiche (1988). There are, however, also analyses according to which floating quantifiers are independently generated adjuncts; cf. Doetjes (1997). We refer the reader to Bobaljik (2003) for a discussion of the various approaches. In this work, the term floating quantifier is used as a pre-theoretical notion.

Focus:
The notion of focus is used in several different ways that should be kept strictly apart; see De Swart and De Hoop (2000) for a more extensive discussion of this notion.

I. If we are concerned with the information structure of the clause, focus refers to the “new” information in the clause. As such it is opposed to presupposition, which refers to the “old” information in the clause.

II. Focus is also used for certain elements in the clause that are phonetically emphasized by means of accent. Often, a distinction is made between emphatic, contrastive and restrictive focus. EMPHATIC focus simply highlights one of the constituents in the clause, as in (ia). CONTRASTIVE focus is normally used when one or more specific referents are part of the domain of discourse to which the proposition does not apply, and can also be used to deny a certain presupposition on the part of the hearer, as in (ib). RESTRICTIVE focus 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. It is often used for restrictive adverbial phrases like *van Jan* in (ic): assigning focus to this phrase suggests that the other relevant persons in the discourse did not yet hand in the assignment.

(i) a. Ik heb hem een BOEK gegeven.
I have him a book given
‘I have given him a BOOK.’
b. Nee, ik heb hem een BOEK gegeven (en geen PLAAT).
no, I have him a book given and not.a record
‘No, I gave him a BOOK (not a RECORD).’
c. Van JAN heb ik de opdracht al ontvangen.
from Jan have I the assignment already received
‘From JAN, I have already received the assignment.’

Freezing:
The phenomenon that extraction from certain moved constituents is not possible. For example, if a prepositional complement occupies its “unmarked” position immediately to the left of the clause-final verb(s), °R-extraction is possible, as shown by (ia'). However, if it occupies a position more to the left, R-extraction is excluded, as is shown by (ib′). In the primed examples the stranded preposition and its moved complement are in italics. For a detailed discussion of Freezing, we refer the reader to Corver (2006)

(i) a. dat Jan al tijden op dat boek wacht.
that Jan already ages for that book waits
‘that Jan has already been waiting for that book for ages.’
a′. het boek *waar* Jan al tijden *op* wacht
the book where Jan already ages for waits
‘the book that Jan has already been waiting for ages’
b. dat Jan op dat boek al tijden wacht.
b′. *het boek *waar* Jan *op* al tijden wacht

Gapping:

An operation applying to coordinated clauses, which involves deletion of elements in the second conjunct under identity with elements in the first conjunct. Gapping (in contrast to °conjunction reduction) must minimally affect the finite verb of the second conjunct, as in (ia). If the clause contains an auxiliary, either the auxiliary alone, as in (ib), or the auxiliary and the main verb can be deleted, as in (ic). In addition to the verb(s), Gapping can also delete other constituents of the second conjunct, as in (id). The second conjunct must contain at least two pronounced constituents, which are contrastively stressed.

(i) a. Jan schrijft een roman en Peter [$_{V}$ ∅] een toneelstuk.
Jan reads a novel and Peter a play
b. Jan heeft een roman geschreven en Peter [$_{AUX}$ ∅] een toneelstuk opgevoerd.
Jan has a novel written and Peter a play performed
c. Jan heeft een roman geschreven en Peter [$_{AUX}$ ∅] een toneelstuk [$_{V}$ ∅].
Jan has a novel written and Peter a play
d. Jan heeft Marie naar huis gebracht en Piet [$_{AUX}$ ∅] Karel [$_{PP}$ ∅] [$_{V}$ ∅].
Jan has Marie to home brought and Piet Karel

Govern(ment):

We use this notion in its traditional sense of referring to a specific syntactic relation in which a lexical item requires a special morphological form of its °complement. For example, the German verb *lesen* 'to read' governs a noun phrase with accusative case, whereas the German verb *geben* 'to give' governs two noun phrases, one with accusative case and one with dative case. Similarly, we may say of a perfect auxiliary that it governs a participial verb, whereas an aspectual verb like *gaan* governs a bare infinitival verb.

(i) a. Jan heeft dat boek gelezen/*lezen
Jan has that book read$_{part}$/read$_{inf}$
'Jan has read that book.'
b. Jan gaat dat boek lezen/*gelezen.
Jan goes that book read$_{inf}$/read$_{part}$
'Jan is going to read that book.'

Head:

An element that projects, which is to say that is the core of a projection. There are two notions of head: (i) lexical heads like V, N, A and P which are predicative in nature in the sense that they take °arguments, and (ii) functional heads like T(ense) and D(et) which are not predicative and add more peripheral functional information. See Section V9.1 for a more extensive introduction of these notions.

Head-final Filter on attributive adjectives:

The Filter in (i) requires that the adjective carrying the attributive -*e*/-∅ ending be adjacent to the noun it modifies. The filter is formulated such that it allows recursive patterns such as *[NP een [mooie [grote [Amerikaanse [N auto]]]]]* 'a beautiful big American car'; see Section 3.5.3.1.2 for a more extensive discussion of this filter.

(i) • Head-final Filter on attributive adjectives:
*[$_{NP}$.... [$_{AP}$ ADJ XP] N$^{\#}$], where XP is phonetically non-null and N$^{\#}$ is a bare head noun or a noun preceded by an adjective phrase: [(AP) N].

Individual-level predicate:
See Stage/Individual-level predicate.

Intensifier:
An adverbial modifier of a scalar adjective that specifies the degree to which the property denoted by the adjective holds. There are three types of intensifiers: AMPLIFIERS, which scale upwards from a tacitly assumed norm, DOWNTONERS, which scale downwards from the assumed norm, and NEUTRAL INTENSIFIERS, which are neutral in this respect; see Section A3.1.2.3 for a more detailed discussion.

Irrealis/realis:
Terms which are used to characterize the interpretation of clauses in semantics by considering the status of the eventualities expressed by them in the active tense domain: the realis and irrealis interpretations differ in that only the former expresses that the °eventuality is realized in the actualized part of the relevant tense domain. Note that it is irrelevant for an irrealis interpretation whether or not the eventuality will be realized in the non-actualized part of the relevant tense domain. The term irrealis verb is used for verbs that select an irrealis complement clause.

Island for extraction:
An island for extraction is a constituent out of which extraction cannot take place. A distinction can be made between *strong* and *weak* islands. Strong islands are constituents out of which extraction is blocked categorically, whereas weak islands are constituents out of which only specific elements (especially adjunct phrases) cannot be extracted.

Infinitivus-Pro-Participio (IPP):
Example (ia) shows that the perfect auxiliaries *hebben* and *zijn* are normally construed with a verb in the form of a past participle. This is not the case, however, if these auxiliaries govern a verbal sequence of two or more verbs. The modal verb in (ib), for example, is not realized as a past participle but as an infinitive. This phenomenon is referred to as the Infinitivus-Pro-Participio (or IPP) effect.

(i) a. Jan heeft het boek gelezen/*lezen.
Jan has the book read$_{part}$/read$_{inf}$
b. Jan heeft het boek willen/*gewild lezen.
Jan has the book want/wanted read

Left dislocation:
A construction akin to topicalization, but which does not involve movement of the dislocated element. The dislocated element is probably external to the sentence, which is clear from the fact that it is associated with a resumptive element in sentence-initial position immediately preceding the finite verb in second position of the main clause; cf. °Verb second. If the left-dislocated element corresponds to a

nominal argument of the sentence, as in (ia), the resumptive element is the demonstrative pronoun *die*/*dat*. If the left-dislocated element corresponds to the object of a preposition, the resumptive element is an °R-pronoun or a complete PP, as in (ib) and (ic), respectively. Various other resumptive elements are used if the left-dislocated element is not a nominal argument of the verb; this is illustrated in (id&e) for left-dislocated elements that correspond to an adverbial phrase of time and place; See the collection of papers in Anagnostopoulou et al. (1997) and Alexiadou (2006) for a detailed discussion.

(i) a. Dat boek, *dat* heb ik gisteren gelezen.
that book that have I yesterday read
b. Die jongen, *daar* heb ik gisteren *over* gesproken.
that boy there have I yesterday about spoken
c. Die jongen, *over hem* heb ik gisteren gesproken.
that boy about him have I yesterday spoken
d. Morgen, *dan* ga ik naar Groningen.
tomorrow then go I to Groningen
'Tomorrow, I'll go to Groningen then.'
e. Amsterdam, *daar* ben ik geboren.'
Amsterdam there was I born
'Amsterdam, I was born there.'

Logical SUBJECT (vs. grammatical subject):
The constituent of which some other constituent in the clause is predicated. This notion of logical SUBJECT coincides with the notion of external °argument in generative grammar and is thus based on the °thematic relations within the clause. It differs from the traditional notion of (grammatical) subject that is used to refer to the nominative argument in the clause. In (ia), for example, the adjective *leeg* 'empty' is predicated of the noun phrase *de fles* 'the bottle', which therefore functions as the logical SUBJECT of *leeg*. Although this is not uncontroversial, we will assume in this work that the predicate and its SUBJECT form a SMALL CLAUSE, that is, a complex constituent headed by the predicative element; cf. Stowell (1981/1983). More examples are given in (ib&c), where the noun phrases *Peter* and *de boeken* function as the SUBJECT of, respectively, a nominal and a prepositional predicate. The notion of SUBJECT is discussed more extensively in Section A6.1.

(i) a. Jan gooide [$_{\text{SC}}$ de fles leeg].
Jan threw the bottle empty
b. Jan noemde [$_{\text{SC}}$ Peter een leugenaar].
Jan called Peter a liar
c. Jan zette [$_{\text{SC}}$ de boeken in de kast].
Jan put the books in the cupboard

Maxim
Notion from pragmatics related to Grice's (1975/1989) °cooperative principle according to which contributors to ordinary conversation are expected to optimize their conversational contribution to the talk exchange they are engaged in. Speakers are expected to follow the following rules (maxims):

(i) a. **Maxim of Quantity**: make you contribution as informative as is required; do not make you contribution more informative than required.
b. **Maxim of Quality**: do not say what you believe to be false; do not say that for which you lack adequate evidence.
c. **Maxim of Relation**: be relevant.
d. **Maxim of Manner**: avoid obscurity of expression; avoid ambiguity; be brief; be orderly.

Material implication:
A term from propositional logic for the relation IF X THEN Y. This relation expresses that if X is true Y is true as well, and that if Y is false X is false too. Note that it does not express that if X is false Y is false; if X is false Y can either be true or false.

Matrix:
A MATRIX CLAUSE is a clause in which some other clause or smaller verbal projection is embedded. By extension, we will use the notion of MATRIX VERB for verbs heading a matrix clause. We will further restrict the notions by requiring that the embedded clause/verbal projection is selected by the matrix verb: matrix verbs that are main verbs take the embedded clause as an argument, and matrix verbs that are non-main verbs impose restrictions on the form of the dependent verbal projection. For example, perfect auxiliaries normally take a verbal projection headed by a participle, whereas aspectual verbs take verbal projections headed by an infinitive.

Middle field:
The middle field of the clause is defined as that part of the clause bounded to the right by the verbs in clause-final position (if present), and to the left by the complementizer in an embedded clause or the finite verb in second position of a main clause. The middle field of the examples in (i) is given in italics. In Section V9, it is argued that the position of the complementizer and the finite verb in second position are actually the same, the so-called C(omplementizer)-position: in main clauses, the finite verb is moved from clause-final position into this C-position, whereas in embedded clauses this movement does not take place, and the complementizer can be used to fill it. In the following abstract representation of the clause, the middle field can therefore be defined as the part between C and V: [$_{CP}$ *e* C ..... V .....].

(i) a. Gisteren heeft *Jan met plezier dat boek* gelezen.
yesterday has Jan with pleasure that book read
b. Ik denk [dat *Jan met plezier dat boek* gelezen heeft].
I think that Jan with pleasure that book read has

It is important to realize that the middle field of a clause is not a constituent, but simply refers to a set of positions within the clause. This set of positions includes the base positions of the nominal arguments of the verb within VP (but not the verb itself), as well as a variety of positions external to VP such as the positions of the adverbial phrases and positions that can act as a landing site for, e.g., °scrambling.

Modifier:
Modification is the syntactic relation between two elements by which, e.g., the denotation of the modified phrase is restricted. Modification is typically obtained by means of adverbial phrases, attributive adjectives, etc. The modifying phrase is referred to as a MODIFIER.

Monadic verb:
See °adicity.

Monoclausal behavior
This notion refers to two typical properties exhibited by structures containing a °verbal complex: °verb clustering and the °Infinitivus-Pro-Participio effect.

Movement:
The notion of movement is used to express that a given constituent is found in some other position than one might expect on the basis of its properties, e.g., syntactic function. For example, despite the fact that direct objects are normally placed before the verbs in clause-final position, they typically occur in clause-initial position if they are *wh*-phrases such as *welk boek* 'which book' in (ib). The °trace t_i in (ib) indicates that the preposed *wh*-phrase functions as the direct object of the clause.

(i) a. Jan heeft gisteren *De zondvloed* van Jeroen Brouwers gelezen.
Jan has yesterday *De zondvloed* by Jeroen Brouwers read
'Jan read *De zondvloed* by Jeroen Brouwers yesterday.'
b. Welk boek$_i$ heeft Jan gisteren t_i gelezen?
which book has Jan yesterday read
'Which book did Jan read yesterday?'

Although work in generative grammar suggests that there are strong reasons to take the notion of movement literally, it is also conceivable to construe it in a metaphorical sense. We leave it to the reader to choose between the two options, and will not review the more theoretical debate concerning this notion. See the introduction to Cheng & Corver (2000), as well as the papers collected therein, for relevant theoretical discussion.

Nominative case:
The °case prototypically assigned to the agent argument of (in-)transitive verbs in finite clauses. In regular passive and °unaccusative constructions, nominative case is assigned to the theme argument of a main verb or to the SUBJECT of a °complementive. In semi-passive constructions, nominative case is assigned to the recipient/goal argument of the main verb. A noun phrase marked with nominative case is often referred to as subject.

Negative polarity:
Negative polarity items are constituents that cannot occur in all environments, but require some other element, like negation, in their environment to license them. Typical examples are the *ook maar*-phrases in (i): this phrase is licensed in (ia) by the negative noun phrase *niemand*, but blocked in (ib) due to the absence of such a

negative constituent. Example (ic) shows that negative polarity items can also occur in, e.g., hypothetical contexts.

(i) a. Niemand heeft ook maar iets gezegd.
nobody has OOK MAAR something said
'Nobody has said anything at all.'
b. *Jan heeft ook maar iets gezegd.
Jan has OOK MAAR something said
c. Als er ook maar iets tegenzit, raakt hij in paniek.
if there OOK MAAR something go-against become he in panic
'If anything at all goes wrong, he panics.'

NP-movement:
A movement operation that places an argument from a case-less position into a case-marked position. This operation takes place in, for instance, Passive and Subject Raising Constructions. In Passives, the passive participle is not able to assign accusative case to the theme-argument, which must therefore be moved into the regular subject position. Schematically, this can be represented as in (ia), where NP$_i$ is the underlying object in regular subject position and t_i is its °trace in the case-less direct object position. In subject raising constructions, it is assumed that the subject of the infinitival clause cannot be assigned case and is therefore raised to the subject position of the higher clause, where it can be assigned nominative case.

(i) a. [NP$_i$ Infl aux [$_{VP}$ V$_{passive\ participle}$ t_i]] [passive]
b. [NP$_i$ Infl V [$_{clause}$ t_i ... te V$_{infinitive}$ ...]] [subject raising]

Dutch differs from English in that NP-movement is often optional. In the more theoretical discussions we will often ignore this optionality, and only discuss it when it is needed to account for certain word order phenomena.

Objective case:
Since Dutch does not have a morphological distinction between accusative and dative case, this notion is sometimes used when the syntactic distinction between the two cases does not play a role.

Operator:
A term borrowed from predicate calculus, where it refers to those elements that combine with a formula φ, thereby creating a new formula OPφ. Examples of such operators are the existential operator $\exists x$, the universal operator $\forall x$, and the negative operator $\neg$. In generative syntax, this notion is extended to expressions from natural languages such as *iemand* 'someone', *iedereen* 'everyone', *niet* 'not', and *wh*-phrases such as *wie* 'who' and *wat* 'what'.

Particle:
The notion particle is difficult to define as it is often used to refer to elements with a specific syntactic function but which do not fit in any obvious way in the commonly distinguished part of speech. We distinguish between modal particles, which are normally related to the speaker's attitude toward the propositional content of the utterance, focus particles, which are used for emphasizing a specific element in the clause and verbal particles, which form a meaning unit with the verb.

(i) a. Je kwam morgen toch? [modal particle]
you came tomorrow PRT
‘*Am I correct in assuming that* you will come tomorrow?’
b. *Zelfs Peter* heb ik gezien? [focus particle]
even Peter have I seen
‘ I have even seen Peter.’
c. Ik heb de kamer opgeruimd. [verbal particle]
I have the room prt-cleared
‘I have tidied up the room.’

Modal particles are like adverbial phrases in that they clearly have an °adjunct status. Focus particles are more difficult to characterize in that they can function as a modifier, as in (ib), but can sometimes also occur independently. Verbal particles are often analyzed as °complementives; cf. Section V2.2.1.

Passive:
Dutch has two types of passive. The first type is the so-called regular passive illustrated in (ib) and (iib), which requires the presence of the auxiliary *worden* ‘to be’ or *zijn* ‘to be’ (lit.: to have been) and promotes the direct object to subject. The second type is the so-called semi- or *krijgen*-passive, illustrated in (iic), which requires the presence of the auxiliary *krijgen* ‘to get’ and promotes the indirect object to subject.

(i) a. Jan verkocht de boeken.
Jan sold the books
b. De boeken werden verkocht.
the books were sold

(ii) a. Jan bood Marie de boeken aan.
Jan offered Marie the books prt.
b. De boeken werden Marie aangeboden.
the books were Marie prt.-offered
c. Marie kreeg the boeken aangeboden.
Marie got the books prt.-offered

The *krijgen*-passive is often considered idiomatic but it can be argued that it is in fact a productive process. The main reason for adopting the first position is that a prototypical double object verb like *geven* ‘to give’ does not allow it; cf. (iiib). This may be due, however, to the fact that *geven* is semantically light in the sense that it does not have a manner component and merely indicates that some object is transferred; it is conceivable that this lightness make it possible to elide the participle in (iiib′), which would result in the fully acceptable sentence in (iiic).

(iii) a. Jan gaf Marie de boeken aan.
Jan gave Marie the books prt.
b. *Marie kreeg the boeken gegeven.
Marie got the books given
c. Marie kreeg the boeken.
Marie got the books

Periphery of grammar:
See °core grammar

Pied Piping:
In interrogative clauses the clause-initial position must be occupied by a *wh*-word, as in (ia). Occasionally, however, *wh*-movement may or must involve a phrase larger than a *wh*-word. In (ib), for example, the preposition must be moved along with the *wh*-element *wie* 'who'. This phenomenon is called pied piping: the *wh*-element *wie* pied pipes the preposition *op*. Pied Piping is also found in other movement types.

(i) a. Wie heb je gezien?
who have you seen
'Who did you see?'
b. Op wie heb je gewacht?
for whom have you waited
'Who were you waiting for?'

The term pied piping stands in opposition to term stranding, which refers to cases in which the *wh*-word is extracted from a larger clausal constituent (as in the English translation of (ib), in which wh-movement strands the preposition *for*). Pied piping and stranding are often in complementary distribution, but this is not a hard and fast rule; the examples in (ii) show, for instance, that interrogative *wat voor*-phrases allow both options.

(ii) a. [Wat voor een boeken]$_i$ heeft Peter t_i gekocht? [pied piping]
what for a books has Peter bought
'What kind of books has Peter bought?'
b. Wat$_i$ heeft Peter [t_i voor een boeken] gekocht? [stranding]
what has Peter for a books bought
'What kind of books has Peter bought?'

PP-over-V:
Many adpositional phrases can occur both in a position preceding and in a position following the verb(s) in clause-final position. Some examples are given in (i). In traditional generative grammar, it is assumed that the order in (ia) is the base order; (ib) involves PP-over-V of the adverbial adjunct of place *op het station* 'at the station'; example (ic) involves PP-over-V of the PP-complement of the main verb, *op zijn vader* 'for his father'; in example (id) both PPs follow the main verb. Observe that the PPs occur in inverted order in (ia) and (id): PP-over-V of more than one PP results in a mirroring of the original order.

(i) a. Jan heeft op het station op zijn vader gewacht.
Jan has at the station for his father waited
'Jan has waited for his father at the station.'
b. Jan heeft op zijn vader gewacht op het station.
c. Jan heeft op het station gewacht op zijn vader.
d. Jan heeft gewacht op zijn vader op het station.

PP-over-V seems to be related to the information structure of the clause. In Dutch the presence of expletive *er* signals that the clause does not contain a constituent expressing a presupposition. Given the fact that the expletive is optional in (iia), we must conclude that the PP *in het stadion* can be interpreted either as part of the focus of the clause or as a presupposition. However, the obligatory presence of the expletive in (iib) indicates that the postverbal PP must be part of the focus of the clause (See also Guéron 1980, Koster 1978, Scherpenisse 1985).

(ii) a. dat (er) in het stadion gevoetbald wordt.
that there in the stadium played-soccer is
‘that People are playing soccer in the stadium.’
b. dat *(er) gevoetbald wordt in het stadion.

The traditional assumption that PP-over-V involves extraposition of the PP (Koster 1973/1974) has recently been challenged, and many alternative proposals are available at this moment; see, e.g., Kayne (1994), Koster (2000), Barbiers (1995), Kaan (1997), Bianchi (1999), De Vries (2002), and Broekhuis (2008) for relevant discussion. Since it is descriptively simpler, we adopt the traditional view in the main text, but it should be kept in mind that this is not the generally accepted view at the present moment.

Preposition stranding:
See °R-extraction.

Presupposition:
See °focus.

PRO:
A phonetically unrealized pronominal noun phrase that may act as the subject of, e.g., an infinitival clause. PRO may be °controlled by (= construed as coreferential with) some noun phrase in the matrix clause, as in (ia), or be interpreted as having arbitrary reference, as in (ib).

(i) a. Jan$_{i}$ probeert [PRO$_{i}$ de gootsteen te repareren],
Jan tries the sink to repair
‘Jan tries to fix the sink.’
b. Het is leuk [PRO$_{arb}$ Marie te bezoeken].
It is nice Marie to visit
‘It is nice to visit Marie.

Projection:
Each lexical head L is assumed to form a so-called lexical projection (= a larger structure) LP by combining with its arguments and (optional) modifiers. Generally, it is assumed that a lexical projection is hierarchically structured: first, L combines with its complement(s) and after that it combines with its subject and modifiers. Evidence for this comes, e.g., from °binding: a subject can bind an object but not vice versa.

In current generative grammar it is commonly assumed that functional heads (like complementizers, numerals or determiners) project a so-called functional projection FP by combining with some lexical projection LP or some other functional projection. For example, the noun phrase *de drie kleine kinderen* 'the three little children' is assumed to have the structure in (i): first, the lexical N *kinderen* 'children' combines with its attributive modifier *kleine* to form the lexical projection NP; after that, the numeral *drie* 'three' forms the functional projection NumP by combining with the NP; finally, the determiner *de* 'the' combines with the NumP, and forms the functional projection DP.

(i) $[_{DP}$ de $[_{NumP}$ drie $[_{NP}$ kleine kinderen]]]
the three little children

Raising verb:

Verbs like *schijnen*/*lijken* 'to seem' and *blijken* 'to appear' allow the subject of an infinitival object clause to surface as the subject of the main clause. This can be illustrated by means of the examples in (i): the noun phrase functioning as the subject of the finite clause in (ia) surfaces as the subject of the main clause in (ib).

(i) a. Het schijnt [dat Jan ziek is].
it seems that Jan ill is
'It seems that Jan is ill.'
b. Jan schijnt [t_i ziek te zijn].
Jan seems ill to be
'Jan seems to be ill.'

It is generally assumed that Raising verbs are °unaccusative verbs. This implies that the anticipatory pronoun in (ia) is an internal °argument of the verb, and that in (ib) the noun phrase *Jan* is moved into the subject position of the clause by means of °NP-movement, which accounts for the °trace in the subject position of the infinitival clause. The movement of the subject is often referred to as °subject raising.

Reconstruction effect:

The phenomenon that a certain phrase is not interpreted in its surface position but in some position it occupied before °movement. For example, since the °binding conditions require an anaphor like *zichzelf* to have a °c-commanding antecedent, we must assume that in (i) this condition cannot be satisfied by the anaphor in clause-initial position: it seems as if it is "reconstructed" into its original position indicated by the trace t_i. In the current version of generative grammar, reconstruction is used as a purely descriptive term, as it is assumed that, e.g., conditions on °syntactic dependencies like the binding conditions apply to *chains* formed by a moved element and its trace (or copy), not to the moved element itself.

(i) Zichzelf$_i$ bewondert Jan t_i het meest.
himself admires Jan the most
'Himself, Jan admires the most.'

R-extraction:

In Dutch, °Preposition Stranding by means of movement of an NP-complement of the adposition is impossible; It can only be effected by means of extraction of an °R-pronoun (*er*/*waar*) from pronominal PPs like *er onder* 'under it' or *waar onder* ‘under what’. Stranding of the preposition may be the result of, e.g., scrambling of the R-pronoun, as in (ia), or *wh*-movement or relativization, as in (ib&b′). Our general practice is to use italics to indicate the parts of the discontinuous PP. A comprehensive discussion of R-extraction is given in Section P5.3.

(i) a Jan heeft *er* gisteren *naar* gevraagd.
Jan has there yesterday for asked
‘Jan asked for it yesterday.’
b. *Waar* heeft Jan *naar* gevraagd?
where has Jan for asked
‘What did Jan ask for?’
b′. het boek *waar* Jan *naar* gevraagd heeft
the book where Jan for asked has
‘the book that Jan has asked for’

Right-hand head rule:

A generalization according to which the rightmost member in a morphologically complex word determines the category (as well as other properties) of the complex word; cf. Williams (1981). For example, the compound *draaideur* ‘revolving door’ is a noun, just like its second part *deur* ‘door’, but unlike its first part, the stem of the verb *draaien* ‘to revolve’.

R-pronominalization:

The process of creating a pronominal PP, that is, a PP consisting of a preposition and an °R-pronoun.

R-pronoun:

In Dutch, prepositions cannot be followed by third person neuter pronouns like *het* ‘it’. So, whereas (ia) is fully acceptable, (ib) is excluded: the neuter pronoun is obligatorily replaced by a so-called R-pronoun *er*/*daar*/*ergens*/..., as in (ib′). Occasionally, the replacement by an R-pronoun is optional, e.g., in the case of the quantificational pronouns *iets* ‘something’ or *niets* ‘nothing’ in (ic). See Section P5.2 for extensive discussion.

(i) a. naar hem/haar ‘to him/her’
b. *naar het b′. er naar ‘to it’
c. naar (n)iets c′. (n)ergens naar
‘to something/nothing’ ‘to something/nothing’

Scope:

In semantics, the scope of an operator is that part of a formula that it combines with; if $\forall x$ combines with a formula φ thus forming the formula $\forall x(\varphi)$, all elements included by φ are in the scope of the operator $\forall x$. In generative grammar it is assumed that syntactic operators such as *iemand* ‘someone’, *iedereen* ‘everyone’, *niet* ‘not’, *wie* ‘who’ and *wat* ‘what’ are scope-taking operators. The scope of these elements may or may not be reflected by their actual position in the sentence. By extension, we will also use the notion to indicate which part of the structure is modified by a given modifier.

Scrambling:

The word order of Dutch in the °middle field of the clause is relatively free. Generally speaking, this is accounted for by assuming that Dutch has a set of “short” leftward movements that target clause-internal positions. In this way constituents may be moved across adverbial phrases, thus giving rise to word order variation. This is illustrated in (i).

(i) a. Jan zal waarschijnlijk morgen dat boek kopen.
Jan will probably tomorrow that book buy
‘Jan will probably buy that book tomorrow.’
b. Jan zal waarschijnlijk dat boek morgen kopen.
c. Jan zal dat boek waarschijnlijk morgen kopen.

Scrambling is not a unitary phenomenon but actually functions as a cover term for several types of movement. In the prototypical case, scrambling is related to the information structure of the clause. In an example such as (ia), in which the noun phrase *het boek* is not scrambled, the noun phrase typically belongs to the °focus (“new” information) of the clause. In (ic), where it is scrambled, it belongs to the presupposition (“old” information) of the clause; it is rather the adverb *morgen* that constitutes the focus of the clause. Scrambling can, however, also apply for other reasons. In (iia′), for example, the scrambled AP *zo aardig* is assigned emphatic focus, and in (iib′), scrambling of the PP *voor niemand* is forced due to the presence of negation on the nominal complement of the preposition.

(ii) a. dat Jan nog nooit zo aardig geweest is.
that Jan yet never that kind been is
‘that Jan has never been that kind before.’
a′. dat Jan ZO aardig nog nooit geweest is.
b. *?dat Jan aardig voor niemand is.
that Jan kind for nobody is
‘that Jan isn’t kind for anybody.’
b′. dat Jan voor niemand aardig is.

There are many controversies concerning the nature of scrambling, including the question as to whether movement is involved, and, if so, whether this movement has properties normally associated with A-movement (like the movement that places the subject into the regular subject position), or with A′-movement (like *wh*-movement or topicalization), or with both; cf. °Webelhuth’s paradox. There is a vast literature on scrambling; here we mention only some important more recent contributions: Verhagen (1986), Vanden Wyngaerd (1988/1989), Grewendorf & Sternefeld (1990), De Hoop (1992), Corver and Van Riemsdijk (1994), Neeleman (1994b), and Broekhuis (2000/2008).

Second order predicate:

Small clause:

See °logical SUBJECT.

Stage/Individual-level predicate:
A stage-level predicate expresses a transitory property of the entity it modifies. The Stage-level predicates are distinct from individual-level predicates, which denote a more permanent property. This distinction seems to be syntactically relevant in several respects. Stage-level adjectives, for instance, can be used in (i) expletive copula, (ii) resultatives and (iii) absolute *met*-constructions, (iv) allow the copula *worden* 'to become', and (v) can be combined with a time adverb such as *vandaag*. All these patterns lead to anomalous results in the case of individual-level adjectives; see Diesing (1992) for more information.

(i) a. Er is iemand ziek/$^{??}$intelligent.
there is someone ill/intelligent
b. De spaghetti maakte Jan ziek/$^{??}$intelligent.
the spaghetti made Jan ill/intelligent
c. [Met Jan ziek/$^{??}$intelligent] kan de vergadering niet doorgaan.
with Jan ill/intelligent can the meeting not take-place
d. Jan wordt ziek/$^{*?}$intelligent.
Jan becomes ill/intelligent
e. Jan is vandaag ziek/*intelligent.
Jan is today ill/intelligent

State-of-affairs:
See °eventuality

Stranding:
See °pied piping

Strong noun phrase:
See °weak.

SUBJECT (vs. subject):
See °logical SUBJECT.

Subject raising
The phenomenon that the argument interpreted as the °logical SUBJECT of an infinitival clause is grammatically realized as the nominative subject of a higher matrix clause. This phenomenon can be aptly illustrated by means of the near equivalent examples in (i), where the subject of the infinitival clause in (ia) appears as the subject of the entire construction in (ib). The standard generative analysis of examples like these is that the subject of the embedded clause is promoted to subject of the matrix clause in order to be assigned case.

(i) a. Het schijnt dat Jan een nieuwe auto koopt.
it seems that Jan a new car buys
'It seems that Jan is buying a new car.'
b. Jan$_{i}$ schijnt [t_{i} een nieuwe auto te kopen].
Jan seems a new car to buy
'that Jan seems to be buying a new car.'

Superior/superiority:
Superiority refers to an asymmetric relation between the constituents in a phrase, which is generally defined in structural terms of a tree diagram: some constituent A is superior to constituent B if A °c-commands B, but B does not c-command A. This notion is slightly more restricted than the notion of c-command. For example, the verb *wachten* in *Jan wacht [op zijn vader]* c-commands the PP *op zijn vader* as well as all elements contained in it (the preposition *op*, the noun phrase *zijn vader*, the possessive pronoun *zijn* and the noun *vader*), but the verb is only superior to the elements contained within the PP, due to the fact that the PP also c-commands the verb. For the constituents mentioned in the c-command hierarchy in (i), c-command and superiority are interchangeable notions (although they may in principle have different extensions if we apply the definition of c-command strictly in structural terms, depending on the overall structure of the grammar).

(i) **C-command hierarchy**: subject > indirect object-NP > direct object > indirect object-PP > PP-complement > adjunct

Supplementive:
Supplementives (which are sometimes also called depictives) are constituents of the clause that denote a property of the subject or the direct object. This is illustrated in (ia&b) by means of supplementive adjectives. In (ia), the adjective *dronken* ‘drunk’ denotes a property of the subject *Jan*, and in (ib) the adjective *leeg* ‘empty’ denotes a property of the direct object *de fles* ‘the bottle’.

(i) a. *Jan* ging *dronken* naar huis.
Jan went drunk to home
‘Jan went home drunk.’
b. Marie zet *de fles* *halfleeg* in de kast.
Marie puts the bottle half-empty into the cupboard
‘Marie is putting the bottle in the cupboard half-empty.’

The relation between the supplementive and the clause is one of “simultaneousness” or “material implication”. The property expressed by the supplementives in (i) holds at the same time as the action expressed by the clause. Example (ib), for instance, can be paraphrased as “Marie puts the bottle in the cupboard *while* it is empty”. In (ii), we give an example in which the relation is a material implication: “that you will iron your shirt smoother *if* it is wet”. The supplementive is extensively discussed in Section A6.3.

(ii) dat je je overhemd nat gladder strijkt.
that you your shirt wet smoother iron
‘that you will iron your shirt smoother wet.’

Syntactic Dependency:
There are two types of syntactic dependency: local and non-local. Locally restricted syntactic decencies are characterized by the four properties in (i); see Koster (1987). A prototypical example of a local syntactic dependency is °binding of reflexive and reciprocal pronouns: they must have a unique c-commanding antecedent within a certain anaphoric domain.

(i) a. obligatoriness
b. uniqueness of antecedent
c. c-command of the antecedent
d. locality

Non-local syntactic dependencies may exhibit some but not all of the properties in (i): the antecedent of referential pronouns, for example, may c-command the pronoun while it is not in its local domain (like *Jan* in (iia)) or be in its local domain while it does not c-command it (like *Jan* in (iib)), but it cannot simultaneously c-command the pronoun and be in its local domain (like *Peter*/*Peter's vader* in (ii)).

(ii) a. Jan$_i$ zei [dat Peter$_j$ hem$_{i/*j}$ gebeld had].
Jan said that Peter him called had
'Jan said that Peter had called him.'
b. [Jans$_j$ vader]$_k$ heeft hem$_{i/*k}$ gebeld.
Jan's father has him called
'Jan's father has called him.'

Telic:
A telic verb is a verb like *vallen* 'to fall' that denotes an event with a natural end point, whereas an atelic verb is a verb like *huilen* 'to cry' that lacks such a natural end point. Some researchers object to the notions of (a)telic verb, since telicity need not be a property of the verb, but of the larger structure that the verb occurs in. For example, the verb *wandelen* 'to walk' in a sentence like *Jan wandelt* 'Jan is walking' refers to an atelic event, but the addition of a (predicative) locational phrase may introduce a terminal point and thus make the construction as a whole telic: *Jan wandelt naar huis* 'Jan is walking home'. The shift in telicity often goes hand in hand with a shift in the syntactic status of the verb: *wandelen* behaves like an intransitive verb in *Jan wandelt* but as an °unaccusative verb in *Jan wandelt naar huis*.

Thematic relation:
See °thematic role.

Thematic role:
A thematic role is a formal means to express the semantic relation between a head and its °arguments. It is often assumed that arguments can be assigned different thematic roles, e.g., AGENT, THEME (or PATIENT), GOAL and SOURCE.

Topicalization:
Topicalization is a movement operation that places some constituent into the clause-initial position of a main clause, that is, into the position in front of the finite verb. In (i), the italicized phrases are topicalized, although it has been suggested that the subject NP in (ia) has not been topicalized but occupies the regular subject position; cf. V6.1.2 and Zwart (1993/1997) for relevant discussion.

(i) a. *Marie* heeft dat boek gisteren op de markt gekocht.
Marie has that book yesterday at the market bought
'Marie bought that book at the market yesterday.'
b. *Dat boek* heeft Marie gisteren op de markt gekocht.
c. *Gisteren* heeft Marie dat boek op de markt gekocht.
d. *Op de markt* heeft Marie gisteren dat boek gekocht.

From a pragmatic point of view, a topicalized phrase can have several functions. It may be the topic of discourse: in (ia), for example, the discussion is about Marie, in (ib) about the book, etc. The topicalized phrase may also be used contrastively, for instance to contradict some (implicitly or explicitly made) supposition in the discourse, as in (ii). In these cases, the topicalized phrase receives contrastive accent.

(ii) a. MARIE heeft het boek gekocht (niet JAN).
Marie has the book bought not Jan
b. BOEKEN heeft ze gekocht (geen PLATEN).
books has she bought not records

Trace (*t*):
A formal means of representing °movement. The moved constituent and its trace are coindexed. In the more recent theoretical literature trace theory is replaced by a copy theory of movement.

Triadic verb:
See °adicity.

Unaccusative verb:
Unaccusative verbs never take an accusative object. The subject of these verbs entertain a similar semantic relation with the unaccusative verb as the direct object with a transitive verb. This is quite clear in the pair in (i); the nominative noun phrase *het glas* ‘the glass’ in the unaccusative construction (ib) has the same relation to the verb as the accusative noun phrase *het glas* in the transitive construction in (ia).

(i) a. Jan breekt het glas.
Jan breaks the glass
b. Het glas breekt.
the glass breaks

It is assumed that the subject in (ib) originates in the regular direct object position but is not assigned accusative case by the verb, so it must be moved into subject position, where it can be assigned nominative case. For this reason, we call the subject of an unaccusative verb a °DO-subject. The fact that (ib) has a transitive alternant is an incidental property of the verb *breken* ‘to break’. Some verbs, such as *arriveren* ‘to arrive’, only occur in an unaccusative frame.

It is often assumed that regular intransitive verbs and unaccusative verbs have three distinguishing properties: (a) intransitives take the perfect auxiliary *hebben* ‘to have’, whereas unaccusatives take the auxiliary *zijn* ‘to be’; (b) the past/passive participle of unaccusatives can be used attributively to modify a head noun that corresponds to the subject of the verbal construction, whereas this is not possible with intransitive verbs; (c) the impersonal passive is possible with intransitive verbs only. These properties are illustrated in (ii) by means of the intransitive verb *lachen* ‘to laugh’ and the unaccusative *arriveren* ‘to arrive’, cf. Hoekstra (1984a). See Section V2.1.2 for a comprehensive discussion.

(ii)

• Intransitive	• Unaccusative
a. Jan heeft/*is gelachen. Jan has/is laughed	b. Jan is/*heeft gearriveerd. Jan is/has arrived
a′. *de gelachen jongen the laughed boy	b′. de gearriveerde jongen the arrived boy
a″. Er werd gelachen. there was laughed	b″. *Er werd gearriveerd. there was arrived

There are, however, cases that show only part of the prototypical behavior of unaccusative verbs. Locational verbs like *hangen*, for example, enter an alternation similar to the verb *breken* in (i), but nevertheless the verb *hangen* in (iiib) does not exhibit the behavior of the verb *arriveren* in (ii). It has been suggested that this might be due to the fact that there is an aspectual difference between the verbs *arriveren* and *hangen*—the former is telic whereas the latter is not.

(iii) a. Jan hangt de jas in kast.
Jan hangs the coat into the wardrobe
b. De jas hangt in de kast.
the coat hangs in the wardrobe

Undative verb:
Undative verbs like *hebben* ‘to have’ or *krijgen* ‘to get’ (ib) never take a dative object. The subjects of undative verbs entertain a similar semantic relation with the undative verb as indirect objects with ditransitive verbs such as *geven* ‘to give’ in (ia).

(i) a. Peter geeft Marie een boek.
Peter gives Marie a book
b. Marie krijgt/heeft een boek.
Marie gets/has a book

We assume that the subject in originates in the regular indirect object position but is not assigned accusative case by the verb, so it must be moved into subject position, where it can be assigned nominative case. Whereas assuming a category of unaccusative verbs is relatively uncontroversial, a category of undative verbs is not yet widely recognized.

Unergative verb:
Unergative verbs, as distinct from °unaccusative verbs, can in principle assign accusative case. This set of verbs includes the intransitive, transitive and ditransitive verbs. Since intransitive verbs like *wandelen* ‘to walk’ do not take a direct object they normally do not assign case: cf. (ia). The two (b)-examples show, however, that such verbs are able to assign case to direct objects semantically licensed by a °complementive like *kapot* ‘broken’. We refer the reader to Section V2.3.3 for more discussion of examples like (ib).

(i) a. Jan wandelt (*zijn schoenen).
Jan walks his shoes
‘Jan is walking’
b. Jan wandelde zijn schoenen kapot.
Jan walked his shoes broken
‘Jan walked his shoes to pieces.’

Verb-final:
See °Verb-second.

Verb-second:
The phenomenon in Dutch that the finite verb normally occupies the so-called second position of the main clause, that is, is preceded by precisely one constituent (see also °constituency test). In embedded clauses the finite verb is placed in clause-final position, just like the non-finite verbs, which is generally considered as its “base”-position; for this reason, verb-second is often used for the movement placing the finite verb in second position.

As technical notions, *verb-second* and *verb-final* are used in strict opposition. This leads to the slightly awkward conclusion that certain verbs that are in final position of a clause do not count as verb-final but as verb-second. For example, main clauses like (ia) consisting of no more than an intransitive verb and its subject do not count as verb-final clauses in the technical sense given that the verb must appear in second position when more material is added; this is shown in (ib).

(i) a. Jan wandelt.
Jan walks
‘Jan is walking.’
b. Jan <*graag> wandelt <graag>.
Jan gladly walks
‘Jan likes to walk.’

Verb cluster/clustering:
The phenomenon that verbs that are part of a °verbal complex tend to cluster in clause-final position. In main clauses the cluster consists of non-finite verbs only, whereas in embedded clauses the cluster also involves the finite verb. Note that as a result of verb clustering the embedded clause may be split: in (i), for instance, the main verb *lezen* is separated from its argument *een boek* ‘a book’.

(i) a. Jan *heeft* een boek *zitten lezen*. [main clause]
Jan has a book sit read
‘Jan has been reading a book.’
b. dat Jan een boek *heeft zitten lezen*. [embedded clause]
that Jan a book has sit read
‘that Jan has been reading a book.’

Verbal complex:
The term verbal complex is used as a translation of the term *werkwoordelijk gezegde* from traditional grammar. A verbal complex typically consists of a main verb, which may be supplemented by one or more non-main verbs. In the examples in (i), we find verbal complexes consisting of, respectively, one, two and three verbs. The complexes are given in italics. A characteristic property is that the non-finite verbs tend to cluster in clause-final position, as in (ic). In embedded clauses the clause-final cluster also includes the finite verb; this is shown in the primed examples of (i). The examples in (i) also show that as a result of clustering the main verb can become separated from its arguments (here: the object *het boek* ‘the book’) by the non main verbs.

(i) a. Jan *leest* een boek.
Jan reads a book
‘Jan is reading a book.’
a′. dat Jan een boek *leest*.
that Jan a book reads
‘that Jan is reading a book.’
b. Jan *heeft* een boek *gelezen*.
Jan has a book read
‘Jan has read a book.’
b′. dat Jan een boek *heeft* *gelezen*
that Jan a book has read
‘that Jan has read a book.’
c. Jan *heeft* een boek *zitten lezen*.
Jan has a book sit read
‘Jan has been reading a book.’
c′. dat Jan een boek *heeft* *zitten lezen*.
that Jan a book has sit read
‘that Jan has been reading a book.’

A second characteristic property of verb complexes is they may exhibit the °Infinitivus-Pro-Participio effect. In perfect-tense construction the verb governed by the perfect auxiliary cannot appear as a past participle but must appear as an infinitive: this is illustrated in (ii).

(ii) Jan *heeft* een boek *zitten/*gezeten* *lezen*.
Jan has a book sit/sat read
‘Jan has been reading a book.

In traditional grammar, it is generally assumed that all verbs except the most deeply embedded one are non-main verbs. This claim is, however, largely due to the fact that the descriptive statement given earlier is often taken to be a definition: a verbal complex consists of at most one main verb, which may be supplemented by one or more non-main verbs. There are, however reasons for not adopting this assumption. For example, it would force us to analyze the verb *zien* ‘to see’ in (iii) as a non-main verb despite the fact that it has a number of prototypical properties of main verbs; for example it takes a pronoun as its complement in pronominalization contexts: *Jan zag dat* ‘Jan saw that’. See Chapter V4 for more extensive discussion.

(iii) a. dat Jan de lamp zag vallen.
that Jan the lamp saw fall
‘that Jan saw the lamp fall.’
b. dat Jan de lamp heeft zien/*gezien vallen.
that Jan the lamp has see/seen fall
‘that Jan has seen fall the lamp.

VP adverb:
See °adverb tests.

VP-topicalization:
Topicalization of a projection of the main verb. This construction is possible only if an auxiliary verb or the semantically empty verb *doen* ‘to do’ is present. Some examples are given in (ia).

(i) a. $[_{VP}$ die boeken lezen$]_{i}$ wil ik niet t_{i}.
those books read want I not
‘I don’t want to read those books.’
b. $[_{VP}$ dat boek gelezen$]_{i}$ heb ik niet t_{i}.
that book read have I not
‘I haven’t read that book.’

c. [$_{VP}$ dat boek lezen]$_i$ doe ik niet t_i.
that book read do I not
'I don't read that book.'

Occasionally, topicalization of the verb strands the direct object. Still, it can be maintained that in that case a projection of the verb has also been moved into sentence-initial position. The only reason that the examples in (ii) appear to involve movement of the verb in isolation is that the direct object has been scrambled out of the VP, so that what is moved into sentence-initial position is a VP containing the trace of the direct object.

(i) a. [$_{VP}$ t_j lezen]$_i$ wil ik die boeken$_j$ niet t_i.
b. [$_{VP}$ t_j gelezen]$_i$ heb ik dat boek$_j$ niet t_i.
c. [$_{VP}$ t_j lezen]$_i$ doe ik dat boek$_j$ niet t_i.

Weak:
The notions WEAK and STRONG have two different uses, depending on whether we are dealing with pronouns, or with noun phrases, determiners and quantifiers.

I. The notions of WEAK and STRONG pronouns refer to the phonetic shape of the pronouns: the former refers to the phonetically reduced form and the latter to the phonetically non-reduced form.

II. An easy way to distinguish WEAK and STRONG NOUN PHRASES is to consider their behavior in °expletive constructions; cf., e.g., Milsark (1974/1977) and Barwise & Cooper (1981). Whereas weak noun phrases can be part of such constructions, strong ones may not. Example (ia) shows that indefinite noun phrases are weak. Example (ib) is only acceptable on a generic reading, which shows that generic noun phrases are strong.

(i) a. Er loopt een kat op het dak.
there walks a cat on the roof
'There is a cat walking on the roof.'
b. #Een kat loopt op het dak.
a cat walks on the roof

Whether a given noun phrase is weak or strong depends on the determiner or quantifier it contains, which, by extension, can therefore also be qualified as weak and strong. The examples in (ii) show that noun phrases containing a numeral or a quantifier like *veel* 'many' may be either weak or strong. This difference goes hand in hand with a semantic distinction: the weak noun phrases receive an existential interpretation in the sense that they introduce new entities into the domain of discourse, whereas the strong ones receive a partitive reading in the sense that they refer to a subset of a larger set of entities already present in the domain of discourse.

(ii) a. Er lopen twee/veel katten op het dak.
there walk two/many cats on the roof
‘There are two/many cats walking on the roof.’
b. Twee/veel katten lopen op het dak.
two/many cats walk on the roof
‘Two/Many of the cats walk on the roof.’

The examples in (iii), finally, show that definite noun phrases and noun phrases containing a quantifier like *alle* are strong.

(iii) a. *Er lopen de/alle katten op het dak.
there walk the/all cats on the roof
b. De/alle katten lopen op het dak.
the/all cats walk on the roof

***Wh*-movement:**
Movement of some constituent into clause-initial position. The name is derived from the fact that in English the moved constituent often contains a *wh*-phrase such as *who*, as in the embedded *wh*-question in *I wonder [who will be there]* and the relative clause in *the man [who was there]*. However, the term *wh*-movement refers not only to movements in interrogative and relative constructions but also to movements in exclamative and topicalization constructions. Example (i) gives a sample of cases in Dutch that are derived by means of *wh*-movement; we refer the reader to section V9.3.3 for a more detailed discussion.

(i) a. Wat$_i$ heb je vandaag t_i gedaan? [*wh*-question]
what have you today done
‘What did you do today?’
b. De man [die$_i$ ik gisteren t_i gesproken heb] [relative clause]
the man that I yesterday spoken have
‘the man who I spoke to yesterday.’
c. [Wat een leuk boek]$_i$ heb je hem t_i gegeven! [exclamative]
what a nice book have you him given
‘What a nice book you’ve given him!
d. [Dat boek]$_i$ heb ik gisteren t_i gelezen. [topicalization]
that book have I yesterday read
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