Infinitival complementation in Dutch: On remnant extraposition

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1. Introduction

In this article, we will discuss infinitival complementation in Standard Dutch. In section 2, we start with a review of the traditional classification of infinitival complements into three groups: (i) \textit{om} + \textit{te}-infinitivals, (ii) bare infinitivals, and (iii) \textit{te}-infinitivals. According to the traditional view, \textit{om} + \textit{te}-infinitivals must be extraposed, whereas bare infinitivals are always subject to Verb Raising (VR). \textit{Te}-infinitivals, however, seem to be more equivocal in this respect: depending on various conditions, often both Verb Raising and Extraposition seem to be possible (Evers 1975). This gives rise to the schema in (1).

\begin{enumerate}
\item \textit{om} + \textit{te}-infinitivals: Extraposition
\item Bare infinitivals: Verb Raising
\item \textit{te}-infinitivals: Verb Raising or Extraposition
\end{enumerate}

1. This article has been written by Hans Broekhuis, but is largely composed of work by all co-authors. The rationale of the existence of the present article is that most of the work is not readily accessible to the general readership. In order to avoid annoying references to our own work, we give them here. Section 3 summarizes some of the results of den Besten, Rutten, Veenstra and Veld (1988), den Besten and Rutten (1989) and Rutten (1991). Section 4 contains the elaboration of some suggestions in den Besten, Rutten, Veenstra and Veld (1988) by Rutten (1991) and Broekhuis (1992), but it also contains some new material. Section 5, finally, is based on den Besten, Rutten, Veenstra and Veld (1988), Broekhuis and Hoekstra (1992) and Broekhuis (1992). Thanks are due to Kees van Dijk, Carla Luijks, Jeroen Teeuwisse, Tonjes Veenstra, Joop Veld and Robbert Wevers who participated in the research group "Werkwoordenclusters en 'vrije woorkvolgorde' ", given at the University of Amsterdam during the second semester 1987/1988 where some of the material in the article was extensively discussed. Others that must be mentioned are Marcel den Dikken, Teun Hoekstra, Aafke Hulk, Wim Klooster, Anthony Kroch, Craig Thiersch and two anonymous TLR-reviewers. The usual disclaimers apply.
In section 3, however, we will argue that the equivocal status of te-infinitivals is often only apparent, and that in various alleged Verb Raising-constructions we are in fact dealing with (Remnant) Extraposition. In section 4, we will discuss the conditions under which Remnant Extraposition may arise. The article will be concluded with a discussion of some consequences of our proposal for Control Theory.

2. The traditional classification of infinitival complements

Traditionally, infinitival complements are divided into the three groups given in (1) above. In this section, we will give a cursory discussion of these three complement types. Om + te-infinitivals can be selected by various main verbs as a (prepositional) object. The element om in om + te-infinitivals is generally taken to be the infinitival complementizer. It is therefore comparable with English for in I prefer {Bill to visit Paris}, although it differs from it by not licensing an overtly realized subject. Consider the example in (2a) which has the structure in (2b) (as usual, the examples are given as embedded clauses in order to avoid interference of Verb-second).

\[(2)\]
\[\begin{align*}
\text{a. } & \text{dat Jan besloot om een liedje te zingen} \\
& \text{that Jan decided to sing a song}
\end{align*}\]

Example (2a) is clearly an example of Extraposition since the infinitival complement follows the main verb besluiten ‘to decide’, and it must hence have the structure in (2b). Verb Raising is excluded in the case of om + te-infinitivals. If we assume that Verb Raising may not proceed through the complementizer position, this can be accounted for by taking recourse to the Head Movement Constraint since Verb Raising would then have to skip C.²

Bare infinitivals are formally characterized by the lack of the infinitival marker te ‘to’. Since it is generally assumed that te is the phonetic content of the <-tense> inflectional head, bare infinitives are often taken to be VPs or AgrObjPs (cf. for example Bennis and Hoekstra 1989a, b). For the moment, we

2. This is not a natural assumption, though. In Bennis and Hoekstra (1989b), for example, it assumed that Verb Raising may proceed through the complementizer, at least if it is empty and Verb Raising involves substitution. However, the assumption that V-to-I-to-C-to-V movement is possible does not readily explain why Verb Raising cannot be adjunction to a Comp filled with the complementizer om which, after subsequent raising of C to the matrix verb, would lead to the impossible cluster *[\[V \{C \{\{\text{om} \{\{\text{te-V}\}\}\}\}\}\]] (sequences like these of course do arise if the embedded verb is intransitive, but then we are not dealing with a cluster; this would be the case in (2) if we drop the object een liedje). We therefore do not accept this proposal.
will assume them to be VPs. According to Evers (1975), the verbs that take a bare infinitive as their argument fall into three groups. The first group consists of the Exceptional Case Marking verbs that license a lexical subject in the bare infinitival. This group includes the verba sentiendi like zien 'to see', the causative/permissive verb laten 'to make'/‘to let’, and vinden ‘to consider’. In (3), an example is given with the perception verb horen ‘to hear’.

(3)  
\[
\text{dat ik Jan een liedje hoor zingen} \\
\text{that I hear Jan sing a song}
\]

The second group consists of the Control verbs that take an infinitival object with an implied PRO-subject. This group includes the root modals like kunnen ‘to be able’ and willen ‘to want’, and some isolated cases like leren ‘to learn’/‘to teach’ and helpen ‘to help’ (which sometimes also take an om + te infinitival as a complement).

The last group consists of the epistemic modals and a subset of the (semi-)aspectual verbs, for example the inchoative verb gaan ‘to go’, which are properly characterized as Subject Raising verbs. The epistemic modals can be easily distinguished from the root modals by the fact that, when the infinitival is pronominalized, the pronoun ends up as the surface subject (cf. dat kan ‘that is possible’ versus Jan kan dat ‘Jan is able to do that’). Tests of these sorts cannot readily be applied to the aspectual verbs, but that they are Subject Raising verbs is clear from the fact that they take the auxiliary zijn ‘to be’ in the perfect tense, a sufficient test for ergative status.\(^3\)

If the complement is a bare infinitival, the arguments of the embedded verb, for example the NPs Jan and een liedje in (3), obligatorily precede the matrix verb. We must therefore conclude that an example such as (3) is derived by Verb Raising as indicated in (4a), and that Extraposition of the infinitival

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3. The characterization of root and epistemic modals as Control and Subject Raising verbs is due to Klooster (1986). Often, it is not immediately clear whether we are dealing with a root or an epistemic modal; an example such as (i-a), for example, is ambiguous. Note that if we replace the infinitival clause by a finite one as in (i-b), the modal can only have an epistemic reading. If the epistemic modal is a Subject Raising verb which hence has no external \(\theta\)-role, and the root modal is a Control verb with an external \(\theta\)-role that must be saturated, this is exactly what we expect; \textit{het} has been assigned the \(\theta\)-role of the infinitival complement in (i-a) (Bennis 1986), and hence the external \(\theta\)-role of the root modal cannot be discharged. See Klooster (1986) for further discussion.

(i)  
\begin{align*}
\text{a. } & \text{ Jan kan komen.} \\
& \text{Jan may/is able come} \\
& \text{‘Jan may/is able to come.’}
\end{align*}

\begin{align*}
\text{b. } & \text{ Het kan dat Jan komt.} \\
& \text{it may/*is able that Jan comes} \\
& \text{‘It may be the case that Jan comes.’}
\end{align*}
complement is excluded (cf. [4b]). Note that we adopt the VP-internal subject hypothesis, as will be clear from the representations in (4).

(4) a. $\text{dat ik [}_v\text{p Jan een liedje tj} \text{ hoort zingen}_i$
    b. $\ast \text{dat tj hoor [}_v\text{p Jan een liedje zingen}_i$

$Te$-infinitivals are formally characterized by the lack of the complementizer $om$. The verbs that take a $te$-infinitival as their complement fall into two groups. Verbs that are able to exceptionally Case mark the subject of a $te$-infinitival are lacking in Dutch (cf. Hoekstra 1984 and Koster 1987, who give an ECP-account of this fact, and Broekhuis 1992 for an explanation based on Case Theory). This leaves us with the Control and Subject Raising verbs. The latter group is relatively small and its most well-known members are $lijken$, $schiijnen$ 'to seem/appear' and $blijken$ 'to appear/turn out'. Since, as can be seen in (5), the object of the embedded verb compulsorily precedes the Subject Raising verb in Standard Dutch, we may conclude that these verbs trigger Verb Raising and that Extraposition is excluded (note, however, that examples such as [5b] do occasionally occur in formal speech and are fully acceptable in Dutch dialects such as West Flemish).

(5) a. $\text{dat Jan, [i het boek tj} \text{ schijnt te lezen}_i$
    that Jan the book seems to read
    'that Jan seems to read the book'
    b. $\ast \text{dat Jan, tj schijnt [i het boek te lezen}_i$

The Control verbs are the remaining verbs, among which $beweren$ ‘to claim’, $besluiten$ ‘to decide’, and $proberen$ ‘to try’, which is not explicitly mentioned by Evers but will play an important role in this article. Since often the arguments of the embedded verb need not precede the verb but may also follow it (cf. [6]), both the option of Verb Raising and Extraposition seems to be available.

(6) a. $\text{dat Cecilia tj beweerde [PRO de reigers te fotograferen}_i$
    that Cecilia claimed the herons to photograph
    'that Cecilia claimed to take a picture of the herons'
    b. $\text{dat Cecilia [PRO de reigers tj beweerde te fotograferen}_i$

The fact that Verb Raising is possible could be reconciled with the Head Movement Constraint by assuming that $te$-infinitivals are IPs and not CPs (note that the assumption that infinitival complements may be either CP or IP is not an innovation, cf. Chomsky 1986); consequently, Verb Raising need not skip $C$ and leads to a grammatical result. The assumption that $te$-infinitivals can in principle be IPs is of course supported by the fact that they also appear as the complement of Subject Raising verbs, since under most current theories CP would constitute a barrier for movement of the embedded subject to the matrix SpecIP position, whereas IP can be crossed freely.
From the discussion above, we may conclude that (1), repeated here in a slightly revised form as (7), gives a rather accurate description of the facts we have considered so far.

(7) a. *Om* + *te*-infinitivals (CP-complements): Extraposition
    b. Bare infinitivals (VP-complements): Verb Raising
    c. *Te*-infinitivals (IP-complements): Verb Raising or Extraposition

3. Remnant Extraposition

Above we have reviewed the traditional classification of infinitival complements that has been common since Evers (1975), be it in more current terminology. The results of this discussion can be summarized as in table 1.

<table>
<thead>
<tr>
<th>Verb Raising</th>
<th>Extraposition</th>
<th>Extraposition</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>bare infinitival</em> (VP-complement)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>verba sentiendi</em> causative verb <em>vinden</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Control</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>root modals</em> <em>helpen/leren</em></td>
<td><em>beweren</em> <em>besluiten</em> <em>proberen</em>, etc.</td>
<td><em>besluiten</em> <em>proberen</em>, etc.</td>
</tr>
<tr>
<td><em>Subject</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Raising</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>epistemic modals</em> <em>semi-aspectuals</em></td>
<td><em>schijnen</em> <em>lijken</em> <em>blijken</em></td>
<td></td>
</tr>
</tbody>
</table>
Scrambling. We therefore claim that the structure indicated in (6b), repeated here as (8a), is wrong and should rather be as given in (8b). This will be extensively discussed in this section.

(8) a. *dat Cecilia [PRO de reigers t\_j beweerde te fotograferen;*
    b. *dat Cecilia de reigers, t\_j beweerde [PRO t\_j te fotograferen;]*

We will start our discussion with demonstrating the existence of the Remnant Extraposition construction by means of the matrix verb *proberen* 'try'. As can be seen in (9), *proberen* may take either an *om + te-* or a *te-*infinitival ([9a] versus [9b, c]), and if the complement is a *te-*infinitival either Extraposition or Verb Raising seems to be possible ([9b] versus [9c]).

(9) a. *dat Jan probeert om het boek te lezen*
    that Jan tries COMP the book to read
    'that Jan is trying to read the book'
    b. *dat Jan probeert het boek te lezen*
    c. *dat Jan het boek probeert te lezen*

A remarkable phenomenon occurs if we put example (9c) in the perfect tense. As can be seen in (10), the matrix verb may in that case appear in two different forms, namely either as a participle (10b) or as an infinitive (10a). This may indicate that the example in (9c) is in fact structurally ambiguous, that is, may have two different structures that correspond to the structures of the examples in (10a) and (10b), respectively.

(10) a. *dat Jan het boek heeft proberen te lezen*
    that Jan the book has try/tried-INF to read
    b. *dat Jan het boek heeft geprobeerd te lezen*
    that Jan the book has try/tried-PART to read

What are the structures of (10a) and (10b)? To answer this question, let us first have a look at an example in which the embedded clause is extraposed. As can be seen in (11), which corresponds to the perfect tense of the example in (9a,b), the matrix verb must appear as a participle in the perfect tense. On the other hand, if Verb Raising is applied, a participle cannot appear in the perfect tense: as we have seen in (4), a perception verb triggers Verb Raising, and it compulsorily appears as an infinitive, cf. (12).

(11) *dat Jan heeft *proberen/geprobeerd (om) het boek te lezen*
    that Jan has try/tried COMP the book to read

(12) *dat ik Jan een liedje heb horen/*gehoord zingen*
    that I Jan a song have hear/ heard sing

The fact that participles only occur in Extraposition constructions leads us to the conclusion that the sentence in (10b) is derived from a structure in which
Extraposition has been applied as in (11), whereas (10a) is a case of ordinary Verb Raising. Additional evidence in favour of the assumption that (10b) is not a case of Verb Raising is that both in (10b) and in the Extraposition Construction in (11) the participle may precede the auxiliary verb heeft, whereas in the case of (10a) and the Verb Raising-construction in (12) the raised verb obligatorily follows it. This can be seen in (13) and (14), respectively.

(13)  a.  dat Jan geprobeerd heeft (om) het boek te lezen
    b.  dat Jan het boek geprobeerd heeft te lezen

(14)  a.  *dat Jan het boek proberen heeft te lezen
    b.  *dat ik Jan een liedje horen heb zingen

Example (10b) can be derived from the Extraposition construction in (11) by extracting the NP het boek from the extraposed clause and by adjoining it to a projection of the matrix clause, that is, by Scrambling it out of the embedded clause. Hence, the structures of (10a) and (10b) are as given in (15a) and (15b), respectively. The resulting structure in (15b) has been called Remnant Extraposition, since the extraposed part consists of those elements that remain after Scrambling (note, however, that we do not mean to suggest with this name that the applications of Scrambling and Extraposition are intrinsically ordered with respect to each other).

(15)  Verb Raising
    a.  dat Jan [PRO het boek t] heeft proberen te lezen,
        Remnant Extraposition
    b.  dat Jan het boek, heeft geprobeerd [PRO t, te lezen]

This analysis of the examples in (10) receives additional support from the perfect tense examples in (16) and (17), which contain an embedded triadic verb. In (16), the matrix verb appears as an infinitive. Consequently, we correctly predict that Verb Raising has applied, and hence that all arguments must precede the matrix verb. In (17), on the other hand, the matrix verb appears as a participle, and therefore this example must be a case of Remnant Extraposition. Consequently, we predict that the arguments can be split by applying Scrambling only to the indirect object and leaving the direct object within the extraposed clause. Although examples such as (17b) are considered slightly degraded by various speakers, (17b) is considerably better than (16b) which is completely out in Standard Dutch. (It must be noted however that, for some unknown reason, Remnant Extraposition always gives rise to a slightly odd result in the case of triadic verbs.)

(16)  Verb Raising
    a.  dat Jan het meisje een kus heeft proberen te geven
        that Jan the girl a kiss has try to give
        ‘that Jan tried to kiss the girl’
    b.  *dat Jan het meisje heeft proberen een kus te geven
(17) Remnant Extraposition
   a. \textit{dat Jan het meisje een kus geprobeerd heeft te geven}  
      that Jan the girl a kiss tried has to give  
      ‘that Jan tried to kiss the girl’
   Remnant Extraposition
   b. (?)\textit{dat Jan het meisje geprobeerd heeft een kus te geven}

Finally, consider (18) and (19). The fact that in (18) \textit{in ontvangst} may not
follow the infinitive \textit{proberen} of course follows from the fact that it cannot be
taken along under Verb Raising. Consequently, the fact that in (19) \textit{in ontvangst}
may follow the participle \textit{geprobeerd} is not expected if (19) is derived by Verb
Raising, but receives a natural explanation if we adopt the analysis given above.\(^4\)

(18) Verb Raising
   a. \textit{dat Jan het boek in ontvangst heeft proberen te nemen}  
      that Jan the book in acceptance has try to take  
      ‘that Jan tried to take delivery of the book’
   b. *\textit{dat Jan het boek heeft proberen in ontvangst te nemen}

(19) Remnant Extraposition
   a. (?)\textit{dat Jan het boek in ontvangst heeft geprobeerd te nemen}  
      that Jan the book in acceptance has tried to take  
      ‘that Jan tried to take delivery of the book’
   Remnant Extraposition
   b. \textit{dat Jan het boek heeft geprobeerd in ontvangst te nemen}

\(^4\) Some speakers tend to reject examples such as (19a). This may be due to the fact that idiom
chunks such as \textit{in ontvangst}, which probably must be seen as the predicate of a Small Clause,
often seem to resist Scrambling (the same is true for particles; cf. note 9). This is illustrated in
(i). However, as has been discussed in den Besten and Broekhuis (1992), we may not conclude
from the unacceptability of (i-b) that elements like \textit{in ontvangst} can never be scrambled; we can
only conclude that Scrambling of these elements can be blocked by the presence of adverbial
phrases. This will become clear from the examples in (ii): In (ii-b) the Small Clause predicate
\textit{in elke saus} has been moved across its subject \textit{een vinger} and the result is fine; in (ii-c), on the
other hand, the adverb \textit{gisteren} is crossed as well and the example is out. (Note that [ii-a] and
(ii-b) differ in preferred scope reading: \\textit{\exists x[x:finger]\forall y[y:sauce] (Jan puts x in y)} and
\\textit{\forall y[y:sauce]\exists x[x:finger] (Jan puts x in y)}, respectively.)

(i) a. \textit{dat Jan het boek morgen in ontvangst neemt}  
      that Jan the book tomorrow in acceptance takes  
      ‘that Jan takes delivery of the books, tomorrow’
   b. *\textit{dat Jan het book in ontvangst morgen neemt}

(ii) a. \textit{Jan heeft gisteren een vinger in elke saus gestopt.}  
      Jan has yesterday a finger in every sauce put  
      ‘Jan put a finger in every sauce yesterday.’
   b. \textit{Jan heeft gisteren in elke saus een vinger gestopt.}
   c. *\textit{Jan heeft in elke saus gisteren een vinger gestopt.}
Now that we have seen that example (9c) is structurally ambiguous, it should be clear that the fact that the arguments of the embedded verb precede the matrix verb is not sufficient to conclude that Verb Raising has applied, because we might also be dealing with Remnant Extraposition. Consider again example (6b) from section 2, repeated here as (20).

(20)  

\[
\text{dat Cecilia de reigers beweerde te fotograferen}
\]

that Cecilia the herons claimed to photograph

‘that Cecilia claimed to take a picture of the herons’

In section 2, we assumed that (20) was a case of Verb Raising. In view of the discussion in this section, however, we cannot conclude this immediately. First, we have to consider the question what shape the matrix verb gets in the perfect tense.

(21)  

a.  

\[
\text{dat Cecilia de reigers heeft beweerd te fotograferen}
\]

that Cecilia the herons has claimed to photograph

b.  

\[
\text{*dat Cecilia de reigers heeft beweren te fotograferen}
\]

that Cecilia the herons has claim to photograph

‘that Cecilia has claimed to take a picture of the herons’

Given the fact that an infinitive is not possible, we must conclude that we were wrong in assuming that (20) is a Verb Raising construction: (20) must be a case of Remnant Extraposition.

In this section, we have seen that some apparent examples of Verb Raising are in fact cases of Remnant Extraposition. Consequently, we must conclude that the schema in (7) provides an oversimplified representation of reality, and should be modified as in (22).

(22)  

a.  

\[
\text{Ont + te-infinitivals (CP-complements): Extraposition}
\]

b.  

Bare infinitivals (VP-complements): Verb Raising

c.  

\[
\text{Te-infinitivals (IP-complements): Verb Raising or (Remnant) Extraposition}
\]

It is not the case that if a verb selects a te-infinitival, the choice between Verb Raising, Extraposition and Remnant Extraposition is always free. If the matrix verb is \text{proberen} ‘try’, all alternatives are indeed possible (cf. the discussion of (9) and (10)), but if the matrix verb is \text{beweren}, Verb Raising is excluded, as we have seen in (21). There are also cases in which Verb Raising or Extraposition is the only option. The first is for instance the case if the matrix verb is a Subject Raising verb. Examples of the latter will be discussed below.

4. Conditions on Scrambling

In the previous section, we introduced the Remnant Extraposition construction. In this construction, the infinitival complement is extraposed while at least one
of its arguments is scrambled to a position preceding the matrix verb, which may lead to a construction that superficially resembles the Verb Raising construction. Schematically, the construction can be represented as in (23).

(23) \[ \text{dat Subject XP}_j \text{ t}_j \text{ V [PRO } ... \text{ t}_j ... \text{ V]} \]

Since Scrambling crosses a clause boundary in (23), we must address the question whether this is allowed. In Webelhuth (1989: chapt. 6), it is shown that the Scrambling rule exhibits all properties of Move-\(\alpha\); more specifically, he has shown that all islands for \(wh\)-movement are islands for Scrambling as well. If we assume that Scrambling leaves a trace that is subject to the same requirements as \(wh\)-traces (cf. also Koster 1986), this can immediately be accounted for.

In addition, however, it is assumed that Scrambling is also a clause-bound process (cf. Grewendorf and Sternefeld 1990), and as can be seen in [24] and [25], this generalization is at least correct in so far as finite clauses and \(om + te\)-infinitivals are concerned. (For completeness, it must be mentioned that the complementizer is preferably dropped in [25a]; nevertheless, the contrast between [25a] and [25b] is still clear).

(24) a. \[ \text{Wat } \text{ heeft Jan gezegd} [\text{CP t}_i \text{ dat [IP hij t}_j \text{ moest lezen]}]? \]
   ‘What did Jan say that he must read?’
   Jan has that book said that he must read
   ‘Jan said that he had to read that book?’

(25) a. \[ \text{Wat } \text{ heeft Jan geprobeerd} [\text{CP t}_i \text{ om [IP PRO t}_i \text{ te lezen]}]? \]
   ‘What did Jan try to read?’
   Jan has that book tried COMP to read
   ‘Jan tried to read that book.’

This indicates that the option of using the intermediate Spec of CP position is not available for Scrambling (which could be accounted for by, for example, adopting Müller and Sternefeld’s (1993) Principle of Unambiguous Binding). Scrambling must hence move in one fell swoop to its target position, and thus will constitute a violation of Subjacency. Note in passing that \(wh\)-movement out of a \(wh\)-island is completely rejected by all speakers of Dutch. It is therefore not surprising that Long distance Scrambling in (24b) and (25b) also gives rise to a severe deviation in Dutch.

The difference between (24b) and (25b), on the one hand, and the Remnant
Extraposition constructions we discussed in section 3, on the other, is clearly due to the fact that a CP-boundary is present in the first case, but lacking in the latter. We illustrate the structure of the Remnant Extraposition construction by means of the structure of example (21a), given in (26b). Note in passing that wh-movement is also possible in this case, even though we may assume that the CP level is missing and that movement must therefore have been applied in one fell swoop (cf. [26a]).

(26) a. *Wat, heeft Cecilia beweerd *[IP PRO t₁ te fotograferen]*.
   *What did Cecilia claim to photograph?*
   what has Cecilia claimed to photograph

b. *dat Cecilia de reigers, heeft beweerd/beweren *[IP PRO t₁ te fotograferen]*
   *that Cecilia has claimed to take a picture of the herons*
   that Cecilia the herons has claimed/*claim to photograph

To account for the difference between (25b) and (26b), we must invoke a barrier theory according to which Scrambling crosses a barrier in the first but not in the latter example. Here, we will adopt the definition of a barrier in (27) (Lasnik and Saito 1992).

(27) α is a barrier for β iff:
   (i) α is a maximal projection;
   (ii) α is not L-marked;
   (iii) α dominates β.

This definition differs from the one in Chomsky (1986) in that it is assumed that all maximal projections that are not L-marked are barriers, that is, that IP is not a defective category, and that a maximal projection cannot become a barrier by inheritance. The latter feature of Chomsky’s system returns in the definition of Subjacency given below. The notion of L-marking in (27ii) is defined as in Chomsky (1986).

(28) α L-marks β iff α is a lexical category that θ-governs β.

(29) α θ-governs β iff α θ-marks β and α, β mutually c-command each other.

For our present purpose, the notion of c-command in (29) can provisionally be defined as follows: a c-commands β iff α does not dominate β and the first node that dominates α also dominates β, and the notion of dominance in (27iii) as: α dominates β iff β is contained within α. Finally, to account for the boundedness of movement, we follow Lasnik and Saito (1992: 94) in assuming that each link in a chain must satisfy the conditions in (30). Lasnik and Saito construe (30) as the definition of antecedent-government, but here we will take them to be conditions on chain-formation (cf. Broekhuis 1992: ch.3 for further discussion).
If \([\alpha, \beta]\) is a link of a chain, then:
(a) \(\alpha\) c-commands \(\beta\);
(b) \(\alpha\) and \(\beta\) are coindexed, and;
(c) \(\beta\) is subjacent to \(\alpha\).

\(\beta\) is subjacent to \(\alpha\) if for every \(\gamma\), \(\gamma\) a barrier for \(\beta\), the maximal projection immediately dominating \(\gamma\), dominates \(\alpha\).

(Lasnik and Saito 1992: 87)

By means of (30), we can easily account for the fact that Scrambling cannot cross the sentential boundary in (24b) and (25b) but may cross the sentential boundary in (26b). Consider the examples in (24b) and (25b) again, repeated here as (32).

(32) a. *Jan heeft dat boek \[CP dat \[IP hij tji moest lezen\]\].
    b. *Jan heeft dat boek \[CP om \[IP PRO tji te lezen\]\].

In (32), IP is not L-marked by C since it is generally assumed that the complementizers dat and om are not lexical. According to (27), IP is a barrier for the trace, and hence the trace is not subjacent to its antecedent since the latter is not dominated by the maximal projection that immediately dominates IP (that is, CP). As a result, chain-formation is blocked by (30c) and the derivations in (32) are excluded. Recall that we assumed above that Spec of CP must not be a link in a Scrambling-chain and is therefore not available as an escape-hatch.

Now that we have seen that the condition on chain-formation in (30c) blocks Long-distance Scrambling if the sentential complement is a finite clause or an om + te-infinitive, that is, a CP, we may address the question why Scrambling is allowed if the complement is a te-infinitival, an IP. Consider again the example in (26b), repeated here as (33).

(33) dat Cecilia de reigers \[IP PRO tji te fotograferen\]

The IP-complement in (33) is selected, hence L-marked, by the matrix verb beweerd. Consequently, it is not a barrier for the trace and the required chain can be established, since the trace is subjacent to its antecedent.

The discussion above shows that we may derive the desired distinction from the condition on chain-formation in (30c). As we have seen above, wh-extraction is possible both from CP (cf. [24a] and [25a]) and IP (cf. [26a]). The condition in (30c) correctly allows for both options. The relevant examples are repeated in (34).

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5. We will define the notion of lexical category as “a category that is defined with respect to the categorial features \([\pmN, \pmV]\)”, that is, as belonging to one of the set of categories consisting of N, V, A and P. Provided that V-to-I has applied, Infl also belongs to the set of lexical categories (cf. Chomsky 1986 and note 11). Since the complementizers dat and om do not contain a verb, they are not part of the set of lexical categories.
Infinitival complementation in Dutch: On remnant extraposition

(34) a. Wat, heeft Jan gezegd [\(CP t'_i \text{ dat } [\_IP \text{ hij } t_i \text{ moest lezen}]\)].
   b. Wat, heeft Jan geprobeerd [\(CP t'_i \text{ om } [\_IP \text{ PRO } t_i \text{ te lezen}]\)].
   c. Wat, heeft Cecilia beweerd [\(_IP \text{ PRO } t_i \text{ te fotograferen}\)].

In (34a, b), IP is of course a barrier since the complementizers are not lexical categories. Nevertheless, the intermediate trace and the variable may constitute a link of the wh-chain since the first is subjacent to the latter: it is dominated by CP, that is, the maximal projection immediately dominating the barrier IP. Since CP is L-marked by the matrix verb, it is not a barrier, and hence the wh-phrase and the intermediate trace can also be a link of the wh-chain; even if the matrix IP is a barrier, the intermediate trace is subjacent to the wh-phrase (provided that the matrix VP is not a barrier, as will be argued in section 5).

In (34c), wh-movement must take place in one fell swoop since no intermediate Spec of CP is available. This is allowed since IP is L-marked by the matrix verb, and hence not a barrier. Consequently, the wh-phrase and the variable may be a link of the wh-chain (again provided that the matrix VP is not a barrier).

We continue this section on the conditions on Scrambling with a brief discussion of examples that contain a so-called “dummy” het ‘it’ which functions as a kind of place-holder for the sentential complement. It is not entirely clear what the structure of the construction with dummy het should be. However, it seems to be plausible that the dummy is generated in complement position, and that the sentential complement occupies some base-adjoined position higher in the tree (Bennis 1986). If we adopt Chomsky’s (1986: 6) assumption that XP can only be adjoined to an XP, CP must be adjoined to either VP or IP.

(35) a. ... [\(\_VP [\_VP \_V] \_CP\)]
   b. ... [\(\_IP [\_IP ... [\_VP \_V] \_I] \_CP\)]

Given Chomsky’s ban of adjunction to IP, (35a) seems to be the most plausible candidate. However, V moves to Infl in overt syntax in Dutch, and this leads to the wrong prediction that CP precedes the finite verb at S-structure. Consequently (35b) seems to be the correct candidate. Whatever structure may be the correct one, though, it seems to be clear that the sentential complement is not a sister of the verb, and hence not L-marked.

If het is present, wh-extraction from the sentential complement is blocked (cf. Bennis 1986). This can be seen in (36).

(36) a. Jan heeft (het) gezegd [\(CP \text{ dat } \_hij \text{ het boek niet gelezen heeft}\)].
   Jan has (it) said that he the book not read has
   ‘Jan said (it) that he didn’t read the book.’
   b. Wat, heeft Jan gezegd [\(CP t'_i \text{ dat } [\_IP \text{ hij } t_i \text{ niet gelezen heeft}]\)].
   what has Jan said that he not read has
   ‘Which book did John say that he didn’t read?’
   c. *Wat, heeft Jan het gezegd [\(CP t'_i \text{ dat } [\_IP \text{ hij } t_i \text{ niet gelezen heeft}]\)].
Since the constructions in (36b, c) do not differ with respect to the first step of wh-movement, it must be the second step that causes the deviance of (36c). As we have discussed above, the CP in (36b) is L-marked by the verb, and consequently no barrier for movement. Hence, movement to the root Spec of CP crosses no barrier (besides, possibly, the matrix IP) and thus satisfies (30c). In (36c), on the other hand, the verb does not L-mark the sentential complement, and CP is therefore a barrier. Movement to the root Spec of CP is consequently excluded by (30c), provided that at least one maximal projection dominating the embedded CP is crossed. Given the fact that Lasnik and Saito assume that all segments of a maximal projection count as a separate maximal projection, this is the case in all possible structures given in (35): in (35a) the higher segment of VP is crossed, and in (35b) the higher segment of IP.

Given this discussion, it does not come as a surprise that Remnant Extra-position is also blocked if dummy het is present. Consider the examples in (37).

(37) a. Hij heeft (het) beloofd [PRO het boek te lezen].
    he has it promised the book to read
    'He promised to read the book.'

b. Wat, heeft hij (*het) beloofd [IP PRO t, te lezen].
    what has he it promised to read
    'What did he promise to read?'

c. Hij heeft (*het) het boek beloofd [IP t, te lezen].
    he has it the book promised to read
    'He promised to read the book.'

In (37a), we first see that beloven 'promise' optionally may occur with dummy het, and in (37b) that this dummy blocks w/i-extraction just as in (36). Finally, we see in (37c) that Long-distance Scrambling is blocked by the presence of the dummy as well. This follows of course from the fact that IP is not selected by the verb in (37c), and therefore constitutes a barrier for movement.

A similar case could be made with respect to particle verbs. In den Dikken

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6. Chomsky's (1986) barrier theory makes different predictions here. According to Chomsky, (i) at most one barrier may intervene between the links of a chain, and (ii) a maximal projection α can only be a barrier for β if all segments of α dominate β. Consequently, barriers (of some types, most notably if the barrier is VP) can be voided by intermediate adjunction. Now consider again the structures in (35). According to Chomsky's definition of barrier, the maximal projection immediately dominating CP will be a barrier by inheritance. In (35a), the additional barrier will (probably) be IP, but given that we have the option of adjunction to VP, wh-movement need not cross both CP and IP in one step. In (35b), the additional barrier is the matrix CP, but this barrier does not come into play at all since it is not crossed. Consequently, Chomsky (1986) seems to predict that (36c) is grammatical, irrespective of the structure that is adopted. (Note that Chomsky's definition of a barrier would give the desired result if we assume that CP is adjoined to the intermediate projection T; IP would then be a barrier by inheritance, and we would also predict the complement to follow the finite verb.)
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(1992), it is claimed that the object of a particle verb is an argument of a Small Clause of which the particle is the predicate. For the cases we discuss here, we assume that the sentential object is the external argument: \([V_s \ [\text{PP} \ \text{object} \ [\text{PRT} \ V]]]\).\(^7\) Now consider the example in (38), which contains the Object Control verb *voorschrijven* 'to dictate'.

(38) a. \(\text{dat ik hem [tj voor] schrijf [PRO dat boek te lezen]}\)
   \(\text{'that I order him to read that book'}\)

b. \(\text{dat ik hem dat boek, [tj voor} schrijf [PRO tj te lezen]}\)

Even if we assume that the sentential complement is an IP, Scrambling of *the book* across the sentential boundary is excluded, since the sentential boundary is not L-marked according to the definition in (28), and hence a barrier for movement.

Still, some remarks are in order here. In den Besten, Rutten, Veenstra and Veld (1988), it was claimed that long-distance Scrambling with particle verbs is acceptable, and it is certainly true that the example in (38b) is better than the one in (37c). Nevertheless, they are worse than the other examples we discussed above, and there is an additional reason to assume that long-distance scrambling crosses a barrier in (38). In section 3, example (19), we have seen that long-distance scrambling of certain elements degrades the acceptability of the resulting structure. Now, consider the examples in (39), which all involve Object Control verbs. As opposed to the first verb *bevolen* 'ordered', the remaining verbs *aan+geraden* 'advised', *op+gedragen* 'ordered' and *voor+geschreven* 'prescribed' contain a particle.\(^8\)

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7. Hence we assume that the particles under consideration are unergative prepositions. Whether this is really the case is not immediately clear, since den Dikken (1992) convincingly argues that a subset of the particles are ergative predicates. As we will argue below, the sentential argument of a particle verb is a barrier. If the particles under consideration turn out to be ergative, this would also follow on den Dikken's assumption that particles are not L-markers.

8. For completeness, it must be noted that particle verbs such as *ophouden* in (i) seem to give rise to a worse result in the Remnant Extraposition construction than the particle verbs in (39). We do not have a real explanation for this fact, but, possibly, the difference must be related to the fact that the sentential complement is (underlyingly) a prepositional object in the case of the verbs of the first kind (*ophouden met ... 'to stop with ...'), whereas it is a direct object of the verbs of the latter kind.

(ii) a. \(\text{dat wij ophouden [de reigers te fotograferen]}\).
   \(\text{dat we cease the herons to photograph}\)

b. \(\text{*dat wij de reigers, ophouden [PRO t, te fotograferen]}\)
In (39a), only the direct object of the embedded clause has been scrambled. As can be seen in (39b), long-distance scrambling of the idiom chunk in ontvangst gives rise to an ungrammatical result if the matrix verb has a particle. This indicates that the better result of (38b) and (39a) is due to the fact that the scrambled element is D-linked, whereas the idiom chunk in (39b) is not (cf. Pesetsky 1987 and Cinque 1990 for this distinction and the consequences for long-distance dependencies).

Of course, this leaves us with the problem that (37c) and (38b) differ in acceptability. Possibly, this is due to the fact that the sentential complement in (38) is generated in an A-position, that is, is selected, whereas in (37c) it is generated in an adjunction position, the object position of the verb being occupied by the dummy object het. In Cinque (1990), it is argued that we must distinguish between barriers for binding and bounding. His definitions of these two notions are given in (40).

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9. As has been shown in (i), similar facts can be found in case the particle of an embedded verb is concerned. See den Besten and Broekhuis (1992) for an argument for the claim that, contrary to what has been claimed in den Besten, Rutten, Veenstra and Veld (1988), particles (and the same holds for non-specific indefinite NPs) can be scrambled as long as no adverb is crossed (cf. also note 4).

(i) a. dat Jan hem het boek *bevolen heeft terug te nemen 'that Jan has V-PRT him to take back'

b. dat Jan hem het boek terug *bevolen heeft te nemen 'that Jan has V-PRT him to take delivery of it'
a. Barrier for binding:
Every maximal projection that fails to be (directly or indirectly) selected in the canonical direction by a category nondistinct from [+V] is a barrier for binding.

b. Barrier for binding/bounding:
Every maximal projection that fails to be directly selected by a category nondistinct from [+V] is a barrier for government.

If we disregard the requirement that the selecting category must be [+V] (the particle, being an intransitive preposition, would otherwise not be able to void barrierhood), the different status of (38b) and the particle verb examples in (39b) would be accounted for. In these examples, the infinitival complements are indirectly but not directly selected by the particle, and hence they only count as a barrier for government. Consequently, (38b), which involves scrambling of the D-linked NP *dat boek* and hence is a case of binding, gives a better result than the pertinent examples in (39b), which involve Scrambling of the non-D-linked constituent *in ontvangst* and hence require chain-formation (antecedent-government). In (37c), the infinitival complement is not selected at all and is consequently a barrier both for binding and for government. Consequently, this example is completely ungrammatical.

In this section we have seen that Remnant Extraposition can be accounted for if we assume that an infinitival complement without an overt complementizer may be IP. Of course, we did not show (or claim for that matter) that such a complement must be IP; it must be IP only to allow for chain-formation if long-distance Scrambling is applied. If long distance Scrambling does not apply, there is in principle no reason for it not to be CP (although the choice between IP and CP may of course be subject to the subcategorization properties of the selecting head; cf. Chomsky 1986). In the next section, we will show that there may indeed be reasons to assume that infinitival complements without an overt complementizer can sometimes be CPs.

**5. Theoretical consequences: Control**

In the previous section, we argued that the infinitival complement must be an L-marked IP in the Remnant Extraposition construction, since otherwise long-

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10. A potential problem might be that the infinitival complement is extraposed, and hence does not occupy the selected position at S-structure. This problem can be solved in several ways. If the conditions on chain-formation are checked at LF, that is, if they are considered to be conditions on representations, we may assume that the infinitival complement undergoes Reconstruction at LF. If we assume that they are conditions on derivations, as is generally assumed for Subjacency (even in Chomsky’s 1993 Minimalist Program), we may assume that these conditions force Scrambling to take place before Extraposition. (Note that this does not imply that these rules are intrinsically ordered.)
distance Scrambling would be blocked by the subjacency condition on chain-formation in (30c). In this section, we will explore the consequences of this conclusion for Control Theory. Assume that the definition of government is as in (41).

\[(41) \quad \alpha \text{ governs } \beta \text{ only if:}
\]
\[\begin{align*}
(a) & \quad \alpha \text{ is a head,} \\
(b) & \quad \alpha \text{ c-commands } \beta, \\
(c) & \quad \text{there is no barrier for } \beta \text{ that does not dominate } \alpha, \text{ and} \\
(d) & \quad \text{there is no } \gamma \text{ such that:} \\
& \quad (i) \quad \gamma \text{ is a head, and} \\
& \quad (ii) \quad \gamma \text{ c-commands } \beta \text{ and does not c-command } \alpha.
\end{align*}\]

Since the configurational and minimality conditions on government in (41b, d) are stated in terms of c-command, it follows that PRO will be governed by the matrix verb in the Remnant Extraposition construction: IP is L-marked, and hence not a barrier for government; Infl does not protect PRO from external government. Below, we will argue that this is a desirable result. We will demonstrate this in section 5.2, but first we have to clear the ground for our proposal. This will be done in section 5.1.

5.1. Clearing the ground for our proposal

The conclusion that PRO is governed in the Remnant Extraposition construction is of course incompatible with the assumption made in Lectures on Government and Binding that PRO is a pronominal anaphor (cf. Chomsky 1981 and much subsequent work). From this assumption, it follows as a theorem of Binding Theory that PRO may not occur in a governed position. This problem can of course be circumvented by formulating the configurational and minimality conditions on government in terms of m-command (Aoun and Sportiche 1983). As a result, PRO would be protected from government by Infl under minimality. If we further stipulate that Infl is not a governor (Chomsky 1981), that is, by complicating the substantial condition on government in (41a), the problem is solved (A more sophisticated variant of this proposal can be found in Rizzi 1990). In Lectures on Government and Binding, the stipulation that Infl is not a governor (Chomsky 1981), that is, by complicating the substantial condition on government in (41a), the problem is solved (A more sophisticated variant of this proposal can be found in Rizzi 1990). In Lectures on Government and Binding, the stipulation that Infl is not a governor (Chomsky 1981), that is, by complicating the substantial condition on government in (41a), the problem is solved (A more sophisticated variant of this proposal can be found in Rizzi 1990). In Lectures on Government and Binding, the stipulation that Infl is not a governor (Chomsky 1981), that is, by complicating the substantial condition on government in (41a), the problem is solved (A more sophisticated variant of this proposal can be found in Rizzi 1990). In Lectures on Government and Binding, the stipulation that Infl is not a governor (Chomsky 1981), that is, by complicating the substantial condition on government in (41a), the problem is solved (A more sophisticated variant of this proposal can be found in Rizzi 1990). In Lectures on Government and Binding, the stipulation that Infl is not a governor (Chomsky 1981), that is, by complicating the substantial condition on government in (41a), the problem is solved (A more sophisticated variant of this proposal can be found in Rizzi 1990). In Lectures on Government and Binding, the stipulation that Infl is not a governor (Chomsky 1981), that is, by complicating the substantial condition on government in (41a), the problem is solved (A more sophisticated variant of this proposal can be found in Rizzi 1990).
Although the exact nature of lexicalization remains unclear in Chomsky (1986), it seems to be a reasonable assumption that lexicalization of Infl means that Infl receives the categorial features of the verb, and thus becomes a verb (cf. Broekhuis and Hoekstra 1990), that is, a (lexical) governor; in fact, Chomsky's proposal has been developed to achieve this result. If this interpretation of lexicalization is feasible, the m-command condition on government would predict that PRO is always governed. Consequently, the m-command condition is incompatible with the assumption that PRO is a pronominal anaphor, and should be replaced by the c-command condition.

The discussion above shows that taking recourse to an m-command condition on government does not solve the problem that PRO is governed in the Remnant Extraposition construction. There is, however, a competing approach to Control Theory according to which PRO is or may be an anaphor (Koster 1987 and Bennis and Hoekstra 1989a, b among others), and hence need not be un governed. According to Koster (1987), governed PRO is an anaphor that must be bound by an element in the matrix clause, whereas un governed PRO may remain free. Here, we will adopt this hypothesis, revising its specific formulation as in (42).

(42) PRO is an anaphor if it is governed at any level of representation.

11. Cf. note 5. The assumption that movement of a lexical category to a non-lexical category lexicalizes the latter can be accounted for by assuming that in the structure in (i) the feature F of the incorporated head Y° may percolate up to the higher X° node as long as X° is not specified for F (cf. for example Roeper 1987 and Di Sciullo and Williams 1987). If X° is INFL and Y° is V, the higher X° will thus become a lexical category of the type [-N, +V]. This accounts for Chomsky's assumption that V-to-I lexicalizes Infl.

12. The part in italics (which is of course reminiscent of Belletti and Rizzi's (1988) assumption that binding condition A is a kind of "anywhere" principle) does not make sense within Koster's framework, since he does not assume distinct levels of representation. As will become clear below, however, our proposal crucially makes use of the levels of representation distinguished within the T-model.

The assumption in Kayne (1991) that "all controlled PROs are governed at some level of representation" resembles (42). However, Kayne's approach differs from ours, since he maintains that PRO is a pronominal anaphor, whereas we consider governed PRO to be a pure anaphor.

One of the reviewers notes that the assumption that governed PRO is an anaphor is a stipulation in the sense that it cannot be derived from the independently motivated principles of the theory. We agree with this. A similar (widely accepted) stipulation is that Case-marked pro is a pronoun.
Below we will show that (42) in tandem with the c-command condition on government makes some interesting predictions with respect to the Remnant Extraposition construction. However, since PRO may be governed according to (42), there is no a priori reason to prefer the c-command to the m-command condition. Therefore, we first have to make it clear that the latter also leads to the wrong predictions in connection with (42).

If governed PRO is an anaphor and if infinitival Infl is a governor as has been argued above, the m-command condition on government predicts that PRO is an anaphor in all infinitival clauses. In fact, this is an interesting prediction, since it has been claimed by Bennis and Hoekstra (1989a, b), among others, that PRO intrinsically is an anaphor. We believe, however, that this claim is false.

Bennis and Hoekstra's claim is based on the assumption that an anaphor must be bound by a syntactically realized argument or an implicit argument in the matrix clause. In passive clauses, this implicit argument is the agentive argument that can be realized in the door-PP (cf. [43]); in examples like (44) and (45), this implicit argument can be realized in a "designated" PP. In (43)–(45) the binder of PRO can be either syntactically realized or left implicit.

(43) *Er werd (door mij) geprobeerd [(om) PROj de deur te openen].
    there was (by me) tried COMP the door to open

(44) Het is leuk (voor mij) [om PROj een boek te lezen].
    it is nice for me COMP a book to read

(45) Het is stom (van Jan) [om PROj dat boek te verkopen].
    it is stupid (of Jan) COMP that book to sell

One of the predictions of Bennis and Hoekstra's assumption is that passivization of the matrix clause does not influence the acceptability of the sentence, since PRO may be controlled either by the subject of the active sentence or by the implicit argument of the passive sentence. This prediction, however, is not fulfilled. Consider the following examples.

(46) a. Jan weigerde [(om) PROj Piet te opereren].
    Jan refused COMP Piet to operate
    'Jan refused to perform surgery on Piet.'

b. Er werd (door Jan) geweigerd [(om) PROj Piet te opereren].
    there was (by Jan) refused COMP Piet to operate

(47) a. Jan weigerde [(om) PROj geopereerd te worden].
    Jan refused COMP operated to be
    'Jan refused to have an operation.'

b. *Er werd (door Jan) geweigerd [(om) PROj geopereerd te worden].
    there was (by Jan) refused COMP operated to be
    to be
As (46) shows, this prediction is fulfilled if the infinitival clause is in the active voice, but if it is in the passive voice as in (47), passivization of the matrix clause yields a degraded result (cf. [47b]). This is generally the case in subject control structures, although there are some exceptions, for example if the infinitival complement contains a so-called “root” modal as in (48). An account of the grammaticality of (48) will be given later in this section.

(48) \textit{Er is veel gedaan [om PRO gekozen te kunnen worden].} 
\textit{there has been much done COMP elected to be able be} 
\textit{‘Much has been done to be able to be elected.’}

Passivization of the matrix clause also leads to ungrammaticality in the case of the Remnant Extraposition construction, unless there is a syntactically realized object that controls PRO as in (50b). Compare the following examples. (The unacceptability of examples like (49b) was first noted by Koster 1987.)

(49) a. \textit{dat Jan dat boek\textsubscript{i} geprobeerd heeft [PRO t\textsubscript{i} te lezen]} that Jan that book tried has to read 
\textit{‘that Jan has tried to read that book’}

b. \textit{*dat (er) dat boek\textsubscript{i} geprobeerd werd [PRO t\textsubscript{i} te lezen]} that there that book tried was to read

(50) a. \textit{dat Jan hem dat boek\textsubscript{i} verboden heeft [PRO t\textsubscript{i} te lezen]} that Jan him that book forbidden has to read 
\textit{‘that Jan has forbidden him to read that book’}

b. \textit{dat hem dat boek\textsubscript{i} verboden werd [PRO t\textsubscript{i} te lezen]} that him that book forbidden was to read 
\textit{‘that he has been forbidden to read that book’}

The differences in grammaticality between (47b) and (49b) on the one hand and (46b) and (50b) on the other are unexpected, if we assume that the implicit agentive argument is able to bind PRO.

Perhaps a brief digression on (49b) is in order here. According to Teun Hoekstra (personal communication), the acceptability of (49b) increases if we replace the NP \textit{dat boek} by the indefinite NP \textit{een boek}, as illustrated in (51).

(51) \textit{dat er een boek\textsubscript{i} geprobeerd werd [PRO t\textsubscript{i} te lezen]} 
From this he concludes that (49b) only exhibits an indefiniteness effect. There are two reasons to reject this conclusion. First, this leaves unexplained why (49b) is also unacceptable if we drop the expletive \textit{er}. Secondly, the acceptability of (51) decreases dramatically if we replace \textit{een boek} ‘a book’ by the plural indefinite NP \textit{boeken} ‘books’, as in (52).

(52) \textit{*dat er boeken\textsubscript{i} geprobeerd werd [PRO t\textsubscript{i} te lezen]}
The unacceptability of (52) indicates that (51) cannot be an instance of Remnant Extrapolation. Probably, (51) is a case of the so-called "long passive", a construction in which the complement of the embedded verb shows up as the subject of the sentence (cf. for example Höhle 1978 and Bayer and Kornfilt 1990). If this is so, the acceptability of (52) must increase if the NP boeken agrees with the verb in number. This prediction is fulfilled, even though the resulting sentence is not very felicitous.

(52) "dat er boeken {geprobeerd werden [PRO tj te lezen]"

Since the judgments on the examples in (51) and (53) vary among speakers from "reasonably good" to "completely out", it is not possible to draw any firm conclusions from these examples.

Another prediction that follows from Bennis and Hoekstra's claim is that a construction in which there is no implicit argument available to bind PRO is ungrammatical. Again, this prediction is not correct. Observe the construction in (54). In (54) there is neither a syntactically realised argument nor an implicit argument available to control PRO, but nevertheless the sentence is grammatical (cf. van Haaften 1991: section 3.5 for more examples of this kind).

(54) "Het is schadelijk voor het milieu [om PRO vuilnis te storten]."

"It is harmful to the environment to dump waste."

Since example (54) shows that PRO may have an arbitrary reference that is not determined by an implicit argument, we conclude that Bennis and Hoekstra's claim that PRO is always an anaphor cannot be maintained. Consequently, the idea that PRO is always an anaphor, since it is always governed by infinitival Infl, has to be rejected as well. Therefore, if (42) is correct, the m-command condition on government must be dropped.

In passing, note that there are independent reasons to reject the m-command condition on government. This becomes very clear in Rizzi (1990); in this study, various auxiliary assumptions are needed that in fact amount to replacing the m-command condition on government by a c-command condition. In section 2.2, for instance, Rizzi restricts proper government to head-government within the immediate projection of the head, which amounts to saying that c-command, not m-command, enters into the definition of proper government. Further, it is explicitly stated that the specifier of a functional category must be accessible to external government, that is, "intervention must be defined in terms of c-command for functional heads" (Rizzi 1990: 111, note 4). Note further that Aoun and Sportiche (1983) motivate the m-command condition on government mainly by considerations of Case Theory; it is assumed, for example, that in NPs the head noun must govern its specifier for Case assignment. Of course, this motivation for the m-command condition on government is only valid if there
are no other means by which Case can be assigned to a specifier. In Bennis and Hoekstra (1989a), however, it is assumed that specifiers (of functional heads) can be assigned Case under Spec–head agreement (cf. also Hoekstra and Mulder 1990, where this mechanism has been put to work in an analysis of the locative inversion construction). If we adopt this mechanism, we may assume a c-command definition on government as far as Case Theory is concerned. Note further that Aoun and Sportiche’s assumption that genitive Case is assigned to the specifier of NP under government by N is incompatible with Abney’s (1987) DP-hypothesis; according to this hypothesis the genitive NP is not within the maximal projection of the noun, but of the determiner. This can be seen in the following structure: \[ \text{DP} \text{NP-GEN D [NP ... N ...]} \]. Therefore, genitive Case cannot be assigned by N, but must be assigned by the determiner D. But since D is a functional head, we may assume that it is comparable to Infl in being able to assign Case under Spec–head agreement. Consequently, if we adopt this mechanism, we may assume a c-command definition of government as far as Case Theory is concerned. This renders one of the most convincing arguments in favor of the m-command condition on government invalid.

5.2. Getting the data

Now that we have cleared the ground for our own proposal, we will show that the facts discussed above can be adequately accounted for by (42) in conjunction with the c-command condition on government. For convenience, we repeat the examples in (46)–(50) in a slightly different form.

(55) a. Jan, weigerde \[ \text{CP (om) [IP PRO, Piet te opereren]} \].
   b. Er werd (door Jan) geweigerd \[ \text{CP (om) [IP PRO, Piet te opereren]} \].

(56) a. Jan, weigerde \[ \text{CP (om) [IP PRO, geopereerd te worden]} \].
   b. *Er werd (door Jan) geweigerd \[ (om) PRO, geopereerd te worden] \].

(57) \text{Er is veel gedaan \[ \text{CP om [IP PRO gekozen te kunnen worden]} \].}

(58) a. dat Jan \text{dat boek, geprobeerd heeft [IP PRO t, te lezen]}
   b. *dat (er) \text{dat boek, geprobeerd werd [IP PRO t, te lezen]}

(59) a. dat Jan \text{hem \text{dat boek, verboden heeft [IP PRO t, te lezen]}
   b. dat hem \text{dat boek, verboden werd [IP PRO t, te lezen]}

Of course, the fact that PRO does not always behave as an anaphor (that is, can be arbitrarily construed as in (54)) follows immediately, since PRO may occupy an ungoverned position, namely Spec of IP. Recall that we assumed that the complementizer is not a lexical category and consequently does not L-mark IP (even though it governs IP in accordance with the substantial condition on
government in [41a]). Consequently, if IP is governed by Comp it is a barrier for government, and hence Spec of IP remains ungoverned.

But can we also explain the fact that in some (but not all) circumstances PRO must be bound, even though it occupies (or better: may occur in) the Spec of IP position in all cases? To answer this question, let us consider the statement in (42) again. According to (42), PRO is an anaphor if it is governed at D- or S-structure (or at LF, but we will not discuss this level here; cf. Broekhuis 1992: section 9.2 for further discussion). Assume the VP-internal subject hypothesis according to which the external argument (including PRO) is generated in Spec of VP. If the external argument is PRO, is it governed at D-structure? If this is the case, we predict that PRO will always be an anaphor if it is the subject of an unergative (intransitive or transitive) verb. Since examples like (54) and (55b) are grammatical, this would be an undesirable result. Therefore, government must be blocked.

Under the c-command condition, Infl is the only potential governor of the external argument. Since V-to-I has not yet applied at D-structure, Infl is a non-lexical category and hence it does not L-mark the VP. Consequently, according to (27), the VP is a barrier for the external argument which will thus not be governed at D-structure. Is the external argument governed at S-structure? At S-structure, V-to-I has applied and Infl is lexicalized as a result. Consequently, VP is L-marked at this level, and as a result it will no longer be a barrier to government for the external argument in its D-structure position. But, of course, the external argument may move to Spec of IP, thus avoiding government by Infl. Since the external argument may be ungoverned both at D- and at S-structure, the PRO-subject of an unergative verb may be ungoverned at all levels. This correctly predicts that in examples such as (54) and (55b) PRO need not be bound.

The ungrammaticality of (56b) can easily be accounted for. Since PRO is the internal argument of the verb opereren, it is governed at D-structure. Even though PRO can be moved to the ungoverned Spec of IP position, PRO will be an anaphor according to (42). But since there is no antecedent available in the matrix clause, the binding conditions are violated and (56b) is ungrammatical as a result.

Given this account of (56b), why is (57) grammatical? Here, we only briefly indicate how it can be solved (cf. Broekhuis 1992: section 9.2 for a more

13. In languages such as English, where V-to-I is delayed until LF, the same result would of course arise at this level. The fact that the trace of the external argument is governed by Infl, of course, has no consequences for the anaphoric properties of PRO. In this respect PRO is similar to wh-trace, which cannot be properly bound by virtue of its trace being properly bound. Compare for instance the example in (i), in which the wh-trace t' violates the ECP even though the NP-trace t is properly governed by the verb killed.

(i) *Who do you think that t' has been killed t.
extensive discussion). As we already noted in section 2, root modals differ from the epistemic modals in having an external argument of their own, that is, the root modals are unergative verbs, whereas epistemic modals are Raising verbs. Since the infinitival clause in (57) contains a root modal, we must assume that there is an additional PRO-subject, that is, a more appropriate structure for the infinitival clause in (57) is as given in (60).

(60) \[om \text{ [IP PRO$_1$ [VP PRO$_2$ gekozen] te kunnen worden]}\]

The external argument of the root modal *kunnen* 'to be able', that is, PRO$_1$, is able to bind the PRO$_2$-subject (that is, the internal argument of the embedded predicate *kiezen* 'to elect'), thus satisfying the binding conditions with respect to this element. PRO$_1$ need not be bound itself, since it is the external argument of an unergative verb; at D-structure, it is protected from government by Infl, since its dominating VP is not L-marked at this level, and it can be moved to Spec of IP at S-structure. Consequently, PRO$_1$ can be ungoverned at all levels and need not be bound.

We conclude this discussion with an account of the Remnant Extraposition construction example in (58b). Because *lezen* in (58) and (59) is an unergative verb, the fact that PRO cannot remain free in (58b) comes as a surprise, since we would expect that PRO may be ungoverned at all levels of representation as has been the case in (54b) and (55b). In what respect does (58b) differ from these examples?

As indicated in (58) and (59), in the Remnant Extraposition construction an argument is moved across the boundary of its infinitival clause. Since we have seen that this movement is blocked if the infinitival complement contains the complementizer *om*, it is assumed that a CP-boundary blocks this movement and hence the infinitival complements in (58) and (59) must be IPs. If the infinitival complement is indeed an IP, there is no barrier to government of Spec of IP; since the IP is an argument of the matrix verb, it is L-marked and its barrierhood will be voided. Consequently, Spec of IP is accessible to government by the matrix verb. Now, both positions that can be occupied by the PRO-subject are governed at S-structure (Spec of VP by the amalgam I + V *te lezen* and Spec of IP by the matrix verb), and PRO will be an anaphor according to (42). This accounts for the ungrammaticality of (58b); since PRO is an anaphor, it must have an antecedent in the matrix clause which is not available in this example. Example (59b) on the other hand contains an object control verb, and consequently anaphoric PRO can be bound by the object *hem*, which gives rise to a grammatical result.

To conclude this section, let us consider the question as to whether *te*-infinitivals must always be IP. Compare the ungrammatical Remnant Extraposition example in (58b), repeated here as (61a), with the grammatical Extraposition example in (61b).
At first sight, the only difference between (61a) and (61b) is that long-distance Scrambling has applied in the former but not in the latter. Further, we have seen that in (61a) the infinitival complement must be an IP in order to make chain-formation possible, and hence that PRO is governed by the matrix verb, that is, an anaphor. Since no antecedent is available for PRO, (61a) is ungrammatical. In (61b), on the other hand, long distance Scrambling does not apply. We therefore need not assume that α is IP. If α is CP, we get the desirable result that PRO is ungoverned: (61b) contains a covert complementizer which is not able to L-mark IP, and IP consequently constitutes a barrier for PRO which therefore remains un governed and need not be bound. As a result, the sentence is fine.

This indicates that infinitival complements without an overt complementizer may be either IP or CP. If long distance Scrambling has applied, it must be IP, because otherwise chain-formation would be blocked. In passives like (61b), though, it must be CP because otherwise binding condition A would be violated. (61a) is ungrammatical, since the complement may not be CP to make chain-formation possible, but must be CP to avoid a violation of the Binding Theory. So, either choice results in ungrammaticality.

This does not mean, however, that the choice between CP and IP is always free. This can be illustrated by means of the examples in (62) and (63).

(62) a. *dat (er) dat boek, geprobeerd werd [IP PRO t, te lezen]  
   b. dat (er) geprobeerd werd [a PRO dat boek te lezen]

As can be seen in (62) the matrix verb beweren ‘to claim’ can be passivized if it takes a finite complement. The fact that passivization is not possible if it takes an infinitival complement (cf. [63b, c]) can therefore not be due to some lexical constraint on this verb. Of course, the fact that (63b) is out follows straightforwardly from our present proposal; PRO is governed, and should hence have an
Infinitival complementation in Dutch: On remnant extraposition

antecedent. However, the fact that (63c) is excluded as well comes as a surprise. If beweren could take either an IP or a CP just as proberen in (61), α could in principle be CP, and consequently PRO would be protected from government by the matrix verb. The ungrammaticality of (63b) therefore leads to the conclusion that the verb beweren obligatorily takes an IP-complement, which of course is in accordance with the fact that the overt complementizer is never possible. This property of selecting an infinitival IP-complement and hence requiring obligatory control is common to verbs that select a propositional complement (cf. van Haafiten 1991: section 2.2, especially the discussion of his types VII–IX).

6. Conclusion

Traditionally, it is assumed that many verbs that take a te-infinitival as their complement may trigger either Verb Raising or Extraposition. The main goal of this article has been to show that besides the Verb Raising and Extraposition construction, there is a third construction, Remnant Extraposition, which may result in a surface structure that resembles the Verb Raising construction, but is the result of Extraposition of the complement and long distance Scrambling of the argument(s) of the embedded verb. The two constructions can, however, be distinguished by taking the perfect tense of the constructions into consideration. The matrix verb will then surface as an infinitive in the Verb Raising construction, but as a participle in the Remnant Extraposition construction. By using this test, we have shown that verbs that take a propositional complement such as beweren are not able to trigger Verb Raising, but are only possible with (Remnant) Extraposition.

Further, we argued that Scrambling is constrained by the regular conditions on movement, and hence that the barrier status of the infinitival complement determines whether Remnant Extratposition is possible or not: L-marked IP can be crossed by Scrambling but not CP or non-L-marked IP. By further investigating the anaphoric properties of the implied subject PRO of the infinitival complement, we discovered that some om-less infinitival complements may contain an empty complementizer, that is, that not all te-infinitivals are IPs. The verb proberen 'to try' for instance can take a te-infinitival either with or without an empty complementizer (and of course an om + te-infinitival).

These findings are summarized in the table 2, in which we have also included the bare infinitivals for completeness, and illustrated the possibilities with a small sample of verbs. The interested reader may find a more complete classification of verbs in den Besten, Rutten, Veenstra and Veld (1988) and Rutten (1991).
### Table 2. Infinitival constructions

<table>
<thead>
<tr>
<th>Verb Raising</th>
<th>bare infinitivals VP</th>
<th>complementizerless te-infinitivals IP</th>
<th>complementizer (om/Ø) te-infinitivals CP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>cf. table 1</td>
<td>schijnen, etc. proberen, etc.</td>
<td></td>
</tr>
<tr>
<td>Extra-position</td>
<td>—</td>
<td>proberen beloven beweren voorschrijven etc.</td>
<td>proberen beloven voorschrijven etc.</td>
</tr>
<tr>
<td>Remnant Extra-position</td>
<td>—</td>
<td>proberen beloven beweren etc.</td>
<td></td>
</tr>
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**References**


