The syntax of relativization

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Extrapolation

1. Introduction

In many languages relative clauses can be extrapolated to the right. An example of this phenomenon is repeated from Ch2§7.5 in (1), an example from Dutch, which is generally SOV – except that there is finite verb second in main clauses; this is the auxiliary in (1).

(1) a. Ik heb de man die zijn tas verloor gezien. [normal order]
   I have the man who his bag lost seen

   b. Ik heb de man gezien die zijn tas verloor. [extraposition]

It is claimed by Borsley (1997) and others that extrapolation of relative clauses is a problem for the promotion theory. If so, it casts some doubt on the validity of the arguments in the previous chapters. However, I will show that this is not the case.

Clearly, extrapolation is a general phenomenon that is applied to a wide range of sentence types. It is not a substrategy of the relative construction. This is illustrated in section 3. Therefore it must be an operation that is in principle independent of the (syntactic) analysis of relative clauses. Section 5 argues at length that an analysis in terms of specifying coordination is much better equipped to handle extrapolation in general than other theories (such as rightward movement or stranding; listed in section 4) – both on empirical and theoretical grounds. In section 6 I defend a variant of specifying coordination using ellipsis and parallel construal in terms of ‘behindance’ – an expression I take over from Grootveld (1992); I do not know the actual origin. I show that this analysis does not put any impediments whatsoever on the actual analysis of relative clauses. Hence the promotion theory argued for in the previous chapters can be maintained.

Section 2 starts with some preliminary remarks on extrapolation of relative clauses. From section 3 onwards, the discussion has a more general character, as explained. Section 7 focuses on extrapolation of non-relative constructions. Section 8 concludes the chapter. The Appendix to this chapter contains a collection of relevant data.

2. Extrapolation of relative clauses

In Chapter 2, section 7.5, I have posed the following questions regarding extrapolation of relative clauses:

- What conditions are there on extrapolation?
- What is the syntax of extrapolation?
Do all syntactic main types allow for extraposition?

Do all semantic main types allow for extraposition?

I will answer them in reverse order, with increasing detail. The first two questions are discussed at length in the subsequent sections. The answer to the fourth one is simply: yes; see the Dutch examples in (2), where the relative clause is placed to the right of the past participle.

(2) a. Hij heeft de muizen gezien die in de kooi zaten. [restr.]
    he has the mice seen which in the cage were

b. Hij heeft de muizen gezien die er in de kooi zaten. [degree]
    he has the mice seen which there in the cage were

c. Ik heb Japie gezien, die in een kooi zat. [app.]
    I have Japie seen who in a cage was

Sentence (2a) shows extraposition of a restrictive relative, (2b) of a degree relative, and (2c) of an appositive relative (cf. Ch2§7.5 and Ch6). Hence all three semantic types of relatives can be extraposed.

Question three is more difficult. Extraposition in languages with a postnominal relative strategy is quite normal (see e.g. Smits (1988) for Germanic and Romance languages). Extraposition of relative clauses in languages with a primary prenominal relative strategy is less well studied, but it is certain that it exists, for instance in Lahu (Lehmann 1984:203/4) or Turkish (Veld 1993). However, since these languages also show a secondary postnominal relative strategy, it is not certain that the extraposed order is derived from the prenominal variant.¹ In fact, this is clearly not the case for Turkish, where the extraposed variant mimics the postnominal finite relative instead of the regular participial prenominal one. Nevertheless, Navaho seems to be a language where extraposition is possible in the absence of a secondary postnominal strategy (cf. Lehmann 1984:116). Clearly, more study is needed here.

Extraposition is hard to define if the relative head is internal. For instance, if a circumnominal relative would be ‘extraposed’, the head is automatically extraposed, too, since it is internal to the relative clause. Therefore, if this construction exists – and it does: see Lehmann (1984:111) for a Mohave example – it actually involves heavy NP shift and not relative clause extraposition (recall that a circumnominal relative is a nominalized clause, hence a DP: [DP ... [CP ... NP ...]].²

What about (right-)extraposition in combination with a correlative strategy, which is some kind of left-extraposition per definition? We know that many languages with a correlative main strategy also have extraposed relatives, e.g. Hindi. However, Srivastav (1991) stresses that these two strategies are quite distinct (see also Ch4§6). For instance, correlatives contain the head noun, extraposed relatives

¹ The word derived must be understood in a pretheoretical sense here. It may be the case that extraposition does not involve syntactic movement, as in fact I will argue.

² I have found one example, also in Mohave, where the head is in situ and the extraposed (nominalized!) relative seems to contain a gap; see Lehmann (1984:113). However, Lehmann states that it is probably an apposition in the form of a free relative, hence irrelevant to the discussion here.
do not; correlative are maximalizing, extraposed relatives are usually restrictive. Therefore extraposed relatives cannot simply be analysed as correlative that are right-joined or moved to the right. Rather, they behave on a par with postnominal relatives. And in fact, Hindi and related languages have a secondary postnominal strategy. This reasoning is valid for Sanskrit, Avestic, Hindi, Marathi, and probably for related languages like Bengali and Gujarathi. Similarly, Bambara has correlative and extraposed relatives, but also a secondary postnominal strategy, which is probably also the case in the related Mande languages Maninka, Mandinka and Vai.

However, as far as I know, Warlpiri (Australian) and Wappo (Yuki, USA) do not have a secondary postnominal relative strategy. This does not justify the idea that relatives can be convertible (‘umstellbar’), i.e. from correlative to extraposed, as claimed in Lehmann (1984:49,129-140), because Srivastav’s objections translate straightforwardly to these languages. Rather, the issue is why these languages have a hidden postnominal relative strategy whereby extraposition is obligatory. I leave these matters for future research.

A final possibility to consider is the idea that at least some extraposed relatives might form an independent class, i.e. they are not derived from a postnominal or other relative main strategy. Among others, Lehmann (1984) and Downing (1978) argue in favour of this idea. In general, the kinds of arguments are the following: i) the particular class of extraposed relatives uses other relative pronouns than postnominal relatives do (or a subset of them); ii) the semantics may be slightly different (e.g. continuative).\(^3\) I am not really convinced by this type of reasoning. First, one must distinguish restrictives from appositives. For the latter, see also Smits (1988) and some comment in Ch2§7.5. Regarding restrictives, a strong counter-argument is that a relative is interpreted in combination with the antecedent, whether it is extraposed or not. It can be argued that a relative pronoun is a kind of anaphor that must be locally bound (co-indexed), etc.

Concerning extraposition of relative clauses, this chapter focuses on the most clear-cut case: extraposition of restrictive relatives in languages with a postnominal relative strategy.\(^4\) Most of the examples to be considered will be in Dutch.

3. Extraposition in a broader perspective

Relative clauses are not the only phrases that can be extraposed. In fact, it seems that every construction that may be divided in a first and a second part (henceforth: *duplex constructions*) allows for extraposition of the second part under certain conditions. These conditions are discussed in the next section. Crucially, they are

\(^3\) Actually, the arguments are mixed up with those for the correlative class in the literature mentioned. I have tried to separate them fairly.

\(^4\) I may add that it follows straightforwardly from the theory to be presented that extraposition of circumnominal and correlative clauses is impossible. However, it does not directly follow that extraposition of prenominal relatives is impossible. As discussed, it is not clear from the available data whether this is an advantage of the theory or rather an issue yet to be solved.
similar in important respects for all construction types; see also the Appendix. Here I will simply list the relevant constructions. There are at least eight of them:

(3) **duplex constructions, allowing for extraposition:**

a. conjuncts
   
   b. relative clauses
   
   c. result clauses
   
   d. appositions
   
   e. comparative clauses
   
   f. PP complements of N
   
   g. complement clauses of N
   
   h. PP complements of A

<table>
<thead>
<tr>
<th>a. conjuncts</th>
<th>XP and YP</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. relative clauses</td>
<td>NP who...</td>
</tr>
<tr>
<td>c. result clauses</td>
<td>so/too A that/to...</td>
</tr>
<tr>
<td>d. appositions</td>
<td>NP, NP,</td>
</tr>
<tr>
<td>e. comparative clauses</td>
<td>more A than...</td>
</tr>
<tr>
<td>f. PP complements of N</td>
<td>N PP</td>
</tr>
<tr>
<td>g. complement clauses of N</td>
<td>N CP</td>
</tr>
<tr>
<td>h. PP complements of A</td>
<td>A PP</td>
</tr>
</tbody>
</table>

These are exemplified (in Dutch) in their discontinuous form in (4). In some constructions, especially (4c/e/g), the extraposed order is preferred or even obligatory. This is discussed in the next section.

(4) a. Ik heb *Joop gezien en Jos.*
   I have Joop seen and Jos

b. Ik heb *de man gezien die een rode jas droeg.*
   I have the man seen who a red coat wore

c. Ze heeft *zo hard gelopen dat iedereen verbaasd was.*
   She has so fast run that everybody amazed was

d. Ik heb *Joop gezien, onze nieuwe directeur.*
   I have Joop seen, our new manager

e. Ze heeft *meer gedaan dan we hadden verwacht.*
   She has more done than we had expected

f. Ik heb *de man gezien met de rode hoed.*
   I have the man seen with the red hat

g. Ik heb *de vraag gesteld of hij wilde komen.*
   I have the question asked if he wanted to come

h. Hij is altijd *dol geweest op chocolade.*
   He has always been of chocolate

The phenomenon of extraposition is even more extensive than this. There are also simplex phrases that can be argued to be right-extraposed from the (matrix) clause. These divide into two classes: i) phrases that are part of the argument structure of the matrix predicate, and ii) phrases that are not. They are listed and exemplified in (5) through (8). The position in the matrix where the relevant phrase is expected normally is indicated by [e]. This position is discussed further in sections 6 and 7. Again, in some constructions extraposition is preferred or even obligatory, especially in (6a).
(5) *simplex extraposable argument phrases*

a. complement clauses of V

b. heavy NPs
   (i) enumerations, announcements, etc.
   (ii) free relatives

c. prepositional objects of V

   she has said that she comes

b. (i) *Hierbij doen we u [e] toekomen: de onderscheiding voor hereby do we you give: the reward for voorbeeldig gedrag.*
   exemplary behaviour

   (ii) *Ze heeft [e] vernield wat jij gemaakt hebt.*
   she has destroyed what you made have

   c. *Ze heeft [e] gedacht aan haar moeders verjaardag.*
   she has thought of her mother’s birthday

(7) *simplex extraposable non-argument phrases*

a. sentence adverbs

b. adverbia l PPs

c. adverbia l NPs

d. adverbia l clauses

e. predicative adjunct APs

f. attributive APs

(8) a. *Ik ben [e] wezen zwemmen, gisterenmiddag.*
   I have been swimming, yesterday afternoon

b. *Ik heb [e] gezwommen, in de Gaasperplas.*
   I have swum, in the Gaasperplas

c. *Ik ben [e] wezen zwemmen, die dag.*
   I have been swimming, that day

d. *Hij is [e] al vertrokken, omdat hij haast had.*
   He has already left, because he hurried was

e. *Hij keek me [e] aan, doodsbleek.*
   he looked me at, deathly pale

f. *Ze heeft [e] druiven geplukt, witte.*
   she has grapes picked, white (ones)

Notice that there is often an intonation break if non-arguments are extraposed. This is similar to the situation concerning extraposed appositive relatives and appositions.

Clearly, (3) through (8) show that extraposition is a very general phenomenon. It is not a substrategy of the relative construction. Before I continue with the theory of extraposition, some further remarks on different construction types are in order.

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5 That is, under the assumption that free relatives are DPs under all circumstances. It will become clear below that within the logic of the approach this is indeed the case.
Concerning right-dislocation: Right-dislocated phrases are in fact extraposed appositions. In a way, they are the reverse of left-dislocated phrases, but there are large asymmetries between the left-periphery and the right-periphery of a sentence.

Concerning heavy NPs (including free relatives): Heavy subject NPs may not be allowed to extrapose because of the Extended Projection Principle, etc. This constraint may be overcome by the use of an expletive, but then the construction changes to a right-dislocation configuration, hence the NP would be an extraposed apposition.

Concerning extraposition of NPs: Arguments and predicates cannot be extraposed, with the exception of heavy NPs. Appositions and adverbal NPs can. But note that – according to Klooster (1995) – adverbial NPs, e.g. in (8c), are in fact PPs with an empty situating preposition. Presumably, oblique Case is provided by the prepositional head.

Concerning extraposition of APs: Veld (1993) argues that extraposed attributive APs as in (8f) are in fact NPs, where N is reduced or A type-lifted. The construction can then be analysed as an extraposed apposition, which explains why the extraposed adjective is interpreted as appositive.

For unknown reasons extraposition of adverbial APs is severely restricted. Selected predicative APs cannot be extraposed at all, as one would expect (see below).

Concerning extraposition of complement PPs: extraposition of PP complements of NP may be restricted by non-syntactic factors, too. According to Guéron (1980) these limitations are semantic in nature, but Truckenbrodt (1995) shows that prosodic constraints yield roughly the same output. A quite different syntactic/semantic analysis is proposed by Barbiers (1995), on the assumption that PP and NP are generated separately. One would expect the same restrictions on extraposition of PP complements of AP. Further research is necessary, here.

Concerning extraposition of non-nominal arguments of V: prepositional objects, as well as complement clauses of V, are probably not extraposed in a regular way. Several authors (e.g. Zwart 1997) have claimed that i) selection is always to the right, and ii) these constituents simply fail to move leftwards, contrary to Case-bearing nominal phrases. See also Barbiers (1995) for an alternative analysis.

Concerning small clause predicates: SC predicates, independently of their categorial status, do not extrapose: *Joop is gisteren geweest ziek/voorzitter/in de tuin ‘*Joop has been yesterday ill/chairman/in the garden’. See Bennis & Hoekstra (1989) and references there.

The next sections discuss how some crucial general characteristics of extraposition can be explained.
4. Analyses of extraposition

Syntactic theories on extraposition can be divided into three main groups, with a total of at least seven distinct analyses, to be explained below:6

A. extraposition as right-hand adjunction
   (i) after rightward movement;
   (ii) base-generated;
B. extraposition as VP-internal stranding
   (iii) with leftward movement of the first part;
   (iv) base-generated in an additional complement position;
   (v) with leftward deletion of the second part of a copy after leftward movement;
C. extraposition as specifying coordination
   (vi) of the extraposed constituent only;
   (vii) plus ellipsis.

I will call these analyses (i) the rightward movement theory, (ii) the base-generated adjunct theory, (iii) the stranding theory, (iv) the base-generated complement theory, (v) the leftward deletion theory, (vi) the specifying coordination theory, and (vii) the specifying coordination plus ellipsis theory. I will stay close to the original proposals in the literature, but the discussion below is my own evaluation of the analysis as a type rather than a review of a particular analysis in all its details.

Extraposition as rightward movement of the A’ type is proposed by Reinhart (1980), Baltin (1984), and others. It is defended more recently in Büring & Hartmann (1995, 1997). In this view, a sentence like (1) has the structure of (9), where I abstract away from the position of the subject, etc.

(9) \[ \text{[CP Ik heb ... [VP [de man t] gezien] [CP-rel die zijn tas verloopt]]} \]

I have the man seen who his bag lost

The relative clause is generated next to the antecedent and moved to a right-adjoined position, in this case Adj VP.

An alternative view is that the extraposed relative is base-generated separate from the antecedent. Then there is no movement. The structure is as in (10).

(10) \[ \text{[CP Ik heb ... [VP [de man gezien] [CP-rel die zijn tas verloopt]]]} \]

This base-generated adjunct theory is defended by e.g. Culicover & Rochemont (1990).

Right-adjunction is not allowed in Kayne’s antisymmetry framework. Hence in this framework neither of the two proposals above can be maintained. This has lead to various proposals in which it is not the relative clause that moves rightward, but the

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6 A discontinuous constituent analysis along the lines of McCawley (1982) is left out of consideration; see Ch6§4 for some discussion.
antecedent that moves leftward. It is called the *stranding* analysis of extraposition: the extraposed constituent is stranded in its base-position. Thus (1) must be analysed as (11), where *de man* is moved to a higher position such as SpecAgrOP. (The problem that it is not a constituent is discussed below.)

(11) \[ \text{[CP} \text{ Ik heb ... [de man], ... [VP gezien [DP t, die zijn tas verloor]]]}. \]

Theories along these lines are proposed in e.g. Kayne (1994) and Rochemont & Culicover (1997).

Haider (1994, 1997) assumes that the relative is VP-internal, too, but in his theory it is generated separate from the antecedent, as shown in (12).

(12) \[ \text{[CP} \text{ Ik heb ... [VP [de man] gezien [CP die zijn tas verloor]]]}. \]

Hence the extraposed constituent is a *base-generated complement*.

Wilder (1995) provides an interesting alternative to Kayne (1994). He claims that the whole construction moves leftward – as *de man* in (11) – and leaves a syntactic copy, in accordance with Chomsky (1995). Then there is backward deletion of the relative clause, and, obviously, forward deletion of the antecedent; see (13).

(13) \[ \text{[CP} \text{ Ik heb ... [DP de man die zijn tas verloor], ... [VP gezien [DP de man die zijn tas verloor]]]}. \]

This is the *leftward deletion* theory of extraposition. It makes use of the same mechanism needed for Right Node Raising constructions. See also Wilder (1994, 1997, and 2000).

Yet another possibility is extraposition as *specifying coordination*,\(^7\) argued for in Koster (1995a, 2000c), and Rijkhoek (1996, 1998). In this analysis there is no movement. The extraposed phrase is a specifying conjunct, which is simply attached at the relevant level of the projection line. Koster and Rijkhoek then analyse (1) as in (14), where \&: (my notation) symbolizes a coordinative head with a specifying semantics.\(^8\) It may be paraphrased as *namely*. Again, example (14) abstracts away from movements irrelevant to the analysis.

(14) \[ \text{[CP} \text{ Ik heb ... [&:P [AgOP de man gezien] [ &: [CP-rel die zijn tas verloor]]]]}. \]

I will show that a theory making use of this insight is the most feasible. It is explained further and revised in section 6, along the lines of De Vries (1999a). In a nutshell, it combines *specifying coordination* with *ellipsis*. In this way, the two conjuncts can be of a similar class (both semantically and syntactically), which is advantageous in various respects. The analysis of (1) then becomes (15):

\(^{7}\) The concept of specifying coordination has been introduced in Ch6§5.1.

\(^{8}\) The analysis is called *conjunction analysis* in Rijkhoek (1998) and *parallel construal* in Koster (2000c). Koster uses the notation "&:P", the "colon phrase", instead of "&:P".
EXTRAPOSITION

Here the coordinated constituents are e.g. AgrOP₁ and AgrOP₂ – or some other (extended) projection. The second is more specific than the first, since it contains the relative clause. Repeated material is phonetically deleted. Coordination is represented as [\& XP [\& & YP]], the standard way in present-day syntax, until the revision in section 6.

The major differences between these seven theories are summarized in table 1.

Table 1. Characteristics of syntactic theories on extraposition.

<table>
<thead>
<tr>
<th>Theory</th>
<th>Adjunction</th>
<th>Separate base-position for EX</th>
<th>Movement creates separation</th>
<th>Ellipsis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rightward movement</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Base-generated adjunct</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>Stranding</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Base-generated complement</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>Leftward deletion</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Specifying coordination</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>Spec. coord. plus ellipsis</td>
<td>no</td>
<td>yes/no⁹</td>
<td>no</td>
<td>yes</td>
</tr>
</tbody>
</table>

5. Properties of extraposition: an evaluation of different types of analyses

This section discusses several properties associated with extraposition. At the same time it evaluates the analyses mentioned above. The evaluation has an empirical and a theoretical side. Section 5.1 starts with the latter, but the most convincing part is probably the empirical evaluation in section 5.2. Finally, section 5.3 summarizes the results.

5.1. Theoretical evaluation

Not every analysis on extraposition can be used without problems in present-day syntax. Four issues in particular are of interest here.

First, right-hand adjuncts are not used any longer by many syntacticians. Especially in an Antisymmetric syntax they cannot exist. If this claim is correct, it poses a problem for the rightward movement and the base-generated adjunction analysis of extraposition, since both make crucially use of right-adjunction.

⁹ ‘Yes’, because there is base-generated additional material; ‘no’ because the extraposed phrase is not generated on its own in this position: within the second conjunct it is in the regular place. There is no ‘discontinuous constituent’.
A second claim is that movement is triggered. This idea is designed as feature checking in many Minimalist analyses. If so, and if extraposition is movement, it may be a problem that extraposition is optional (see also section 5.2.10). Suppose that the movement that causes extraposition, is triggered by some feature. Then it is unclear why this feature is sometimes active and sometimes not. Hence the rightward movement analysis of extraposition is problematic in this respect. A counter-argument might be that there could be a meaning difference between the extraposed order and the normal order, which could be encoded in the presence versus absence of a trigger. However, I do not see any clear difference in meaning between e.g. (1a) and (1b). As far as I know, no account along these lines has been proposed.

The other analyses of extraposition do not suffer from the trigger problem, because there is no (rightward) movement involved. In the stranding theory, the leftward deletion theory, and to a certain extend the base-generated complement theory, there is leftward movement. This movement is triggered (e.g. by a Case feature) and it is not optional. In particular, in the stranding analysis it is the antecedent (or first part of a duplex construction in general) that moves leftwards. If the relative (or second part of a duplex construction in general) is stranded, it seems to be extraposed; if it is pied piped with the antecedent, the normal order arises. Of course, in this scenario one needs a theory about pied piping. However, that is needed anyway, since pied piping phenomena in general show signs of optionality; recall the well-known facts concerning preposition stranding/pied piping discussed in Chapter 4.

The third possible problem is less general; it concerns the promotion theory of relative clauses (and, possibly, analyses of duplex constructions with similar characteristics). According to the promotion theory a phrase like de man die zijn tas verloor has the structure in (14).

\[
(16) \quad [DP \ de [CP-rel [DP-rel man die \ t_m (C) t_j zijn \ tas \ verloor]]]
\]

The crucial point is that i) de man is not a constituent, and ii) die zijn tas verloor is not a constituent, either – unless the noun phrase man is moved out of DP\_rel to a higher projection of a split CP, as proposed in Bianchi (2000a) and Zwart (2000).

I have argued in Chapter 3 that the promotion theory of relatives has many advantages. However, it also seems to be incompatible with several theories on extraposition. The stranding theory needs to raise [de+man], which is not a constituent. The rightward movement theory needs to move die zijn tas verloor, which is not a constituent either (unless Bianchi and Zwart are right). The base-
generated adjunction theory, the base-generated complement theory, and the specifying coordination theory generate the two phrases separately; but then the noun cannot have raised from within the relative. However, the specifying coordination plus ellipsis theory and the leftward deletion theory support any analysis of relative clauses, including the promotion theory. This is because the head noun is syntactically present in both positions, cf. (13) and (15) above.

The fourth issue concerns the relation between the first and the second part of a duplex construction. In the case of relative clauses, the syntactic and semantic relations between the antecedent and the relative clause. These relationships can be accomplished if at least there is selection involved, cf. Chapter 3. If, however, in an extraposition configuration, the antecedent and the relative clause were to be generated apart, some kind of ‘interpretative linking’ is necessary (cf. Kaan 1992a/b). This is the case for the base-generated adjunction theory, the base-generated complement theory, and the specifying coordination theory.\(^\text{12}\) In my view it is problematic, since i) a pragmatic notion like ‘interpretative linking’ leads to theoretical inconsistency: it does not fit into the general (formal) approach to relatives argued for; ii) a relative pronoun is a (locally) bound pronoun, not a pronoun with free reference (cf. Ch6); iii) a restrictive meaning is always associated with syntactic sisterhood and selection, as far as I know; iv) properties of extraposition such as ‘binding at the base’ (cf. section 5.2.11) imply a local relation between the antecedent and the relative clause; etc. Thus in my view ‘interpretative linking’ is ill-advised.

The results of this short exposé are summarized in table 1. A plus means that the analysis is compatible with the relevant theoretical assumption; a minus that it is not.

Table 2. A theoretical evaluation of extraposition theories.

<table>
<thead>
<tr>
<th>theoretical issue</th>
<th>rightw. movement</th>
<th>base-gen. adj.</th>
<th>strand-</th>
<th>base-gen. compl.</th>
<th>lefhw. deletion</th>
<th>spec. coordination</th>
<th>spec. co. + ellipsis</th>
</tr>
</thead>
<tbody>
<tr>
<td>no right-hand adjunct (Antisymmetry)</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>trigger for movement (Minimalism)</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>promotion theory of relative clauses</td>
<td>+/-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no interpretative licencing</td>
<td>+/-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^{12}\) The particular theories by Culicover & Rochemont (1990) and Haider (1994, 1997) do have some licencing mechanisms, such as the complement principle. However, these are highly problematic. I quote Büring & Hartman (1995:199): “It should have become clear [...] that base-generating NP related clauses as ‘discontinuous constituents’ of the form NP, ... CP, does not provide a satisfactory explanation of the relevant data. The required licencing mechanisms are stipulative and empirically inadequate.” Therefore I replace these mechanisms with the unspecified notion ‘interpretative linking’ which has at least some advantages, e.g. it makes extraposition from embedded positions possible.
Notice that a plus at *trigger for movement* does not imply that there is movement; the principle that movements must be triggered is automatically fulfilled if there is none.

Thus if there is some truth in these four theoretical claims, the leftward deletion and the specifying coordination plus ellipsis theory of extraposition are the most promising ones. The next section shows that the latter it is supported by empirical arguments.

### 5.2. Empirical evaluation

In separate subsections I will discuss thirteen properties related to extraposition, and indicate if and how the different analyses mentioned above are able to handle them. Apart from a more or less detailed explanation, all theories are evaluated in the following way. A minus means that the property cannot be derived or violates generally assumed principles; +/- that it could be derived if additional assumptions are made; + that it can be derived straightforwardly, or with reference to independent principles.

The examples used here show relative clauses only; however, the Appendix to this chapter contains additional examples with all other relevant constructions from section 3 above. Crucially, they show exactly the same behaviour in almost all cases.

#### 5.2.1. Extraposition from any constituent

Extraposition may take place from any constituent. This is shown for relative clauses in (17).

(17) a. Ik heb de man *een boek* gegeven *dat hij graag wilde hebben*. [DO]
   I have the man a book given which he readily wanted to have
b. Ik heb *iemand de prijs* gegeven *die het verdiende*.
   I have someone the prize given who it deserved
c. *Iemand* heeft me *een boek* gegeven *die ik niet ken*.
   someone has me a book given who I not know
d. Ik heb *op een plek* gelopen *waar jij ook bent geweest*.
   I have on a spot walked where you also have been
e. *Dat boek* heb ik *de man* gegeven *dat hij graag wilde hebben*.
   that book have I the man given which he readily wanted to have

Many theories are able to derive this property, although some additional assumptions may be necessary. However, the stranding analysis and the leftward deletion analysis fail completely.

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13 See also Rijkhoek (1998), and Meinunger (2000:206) for some German examples.
Rightward movement: +
There are two possibilities. Either extraposition is movement to an arbitrary right-adjoined position (e.g. AdjIP for subjects, AdjCP for topics), or it is movement to AdjVP standardly, before leftward movement of the antecedent takes place – such as topicalization or subject raising to SpecIP (where it is presupposed that everything is generated within VP). In the latter case the licencing of the trace may be a problem.

Base-generated adjunct: +
In principle, the extraposed phrase can be generated wherever necessary.

Stranding: –
Extraposition from non-objects can only be explained if everything is generated within VP, and VP is always emptied. For example, extraposition from a subject leads to the structure in (18).

(18)  \[ S \text{ Aux } \ldots [\text{AgrOP DO} [V+AgrO] [\text{VP } [t, RC] t, t_{do} \text{ ]]} \]

If the verb were to be left in situ, the word order would be wrong, since in that case the verb would follow the extraposed relative, which is not what we want to derive. However, it is generally assumed that Dutch verbs are spelled out in V (apart from verb second of the finite verb in main clauses), see e.g. Den Besten (1989) and Zwart (1997). Apart from extraposed material, the verb is sentence-final. If there is an additional adverb like *snel* ‘fast’, it must precede the verb and it may precede the object. A reasonable assumption is therefore that adverbs can be generated directly above VP (e.g. in AdjVP). But this is problematic in (18), since V is spelled out above this position, which is an unacceptable word order. If, hypothetically, one assumes that adverbs are always above AgrOP, one must also assume that indefinite objects can scramble out of AgrOP – since an indefinite object may precede adverbs, e.g. *Ik heb gisteren iemand hard zien lopen* [I have yesterday someone fast seen walking] – which is at odds with general assumptions.

Things can get even worse than this. Suppose there is extraposition from a time-oriented adverbial phrase. Then all constituents from VP (including DO and V) must be raised to a position *above* the base-position of the adverbial phrase (say, AdjIP). After that, the adverbial phrase is moved to a position above the raised phrases, whilst the constituent to be extraposed is stranded in its base-position. Obviously, this scenario is implausible to the point of being ridiculous. I conclude that the stranding theory cannot handle extraposition from non-objects.

Base-generated complement: +
The extraposed constituent can be generated at its standard position deep down in VP, no matter what the status of the antecedent is.

Leftward deletion: –
This theory suffers from exactly the same problem as the stranding theory: the base-position of the antecedent is not right-peripheral in the case of extraposition from non-objects.
Specifying coordination: +
The specifying conjunct is simply added to the relevant level of the projection line; see the sketch in (19) for extraposition from a subject.

(19) \[ &.P \{S \text{Aux DO V}\} &.: [RC]\]

One may ask why the relative is not simply conjoined with VP, after which the subject could raise to its high position, e.g. as in (20).

(20) \[ S \text{Aux DO} &.P \{t_s V t_0\} &.: [RC]\]

However, (20) clearly violates the Coordinate Structure Constraint (CSC).\(^{14}\)

Specifying coordination plus ellipsis: +
Similarly, the specifying conjunct is added to the relevant level of the projection line; see (21).

(21) \[ &.P \{S \text{Aux DO V}\} &.: [S RC \text{Aux DO V}]\]

If there is extraposition from a subject, the deleted phrase is somewhat larger than in the case of extraposition from an object.

5.2.2. Extraposition from embedded positions
It is possible to extrapose from embedded positions. Example (22a) shows extraposition from within a PP. Even more spectacular, (22b) is extraposition from a PP within a DP.

(22) a. Ik heb [aan de man] gedacht die een rode jas droeg.
I have [of the man] thought who a red coat wore
b. Ik heb [de papieren van de man] gecontroleerd die een rode jas droeg.
I have [the papers of the man] checked who a red coat wore

These facts pose difficulties for the theories that rely on movement only, since movement is supposed to be limited by locality constraints (and a definite DP is certainly a barrier), and movement can only apply to constituents (but \textit{de papieren van de man} without the relative is certainly not one). Hence the rightward movement and the stranding theory are problematic in this respect.

Rightward movement: –
The examples above cannot be derived. Rightward movement would cross several barriers here (or in whatever terms locality of movement is defined). This problem is one of the core problems for a movement analysis of extraposition: rightward

\(^{14}\) Ross's (1967:98/99) definition of the CSC is the following: "In a coordinate structure, no conjunct may be moved, nor may any element contained in a conjunct be moved out of that conjunct." A general exception to this rule is across-the-board (ATB) movement.
movement must be different from leftward movement, but why and how is unclear. Notice furthermore that the relative would be taken out of the scope of the antecedent; however, this problem might be undone by reconstruction.

**Base-generated adjunct:** +
Since there is no movement, there are no major problems here. However, the scope problem remains, but here there is no reconstruction possible; see also section 5.2.11.

**Stranding:** –
The stranding theory cannot derive (22), since a non-constituent must be moved leftwards. For instance, (23) shows the VP from which *de+papieren+van+de+man* should be raised to AgrOP, stranding the relative.

\[(23) \quad \left[\text{VP} \left[ \text{V} \left[ \text{DP} \text{obj} \text{de} \left[\text{NP} \text{papieren} \left[\text{NP} \text{de} \left[\text{NP} \text{man die} \left[\text{NP} \text{een rode jas droeg}\right]\right]\right]\right]\right]\right]\right]\]

Obviously, this is impossible. Examples like these show in an enlarged form an essential flaw in the stranding theory. On closer inspection, extraposition from a definite phrase cannot be derived at all, cf. (24).

\[(24) \quad \left[\text{VP} \left[ \text{V} \left[ \text{DP} \text{de} \left[\text{CP} \text{man die} \left[\text{NP} \text{een rode jas droeg}\right]\right]\right]\right]\right]\]

Even in this simple case, *de+man* is not a constituent that can be moved leftwards. See also De Vries (1996, 1997).

**Base-generated complement:** +
There are no problems since the relative clause is generated apart from the antecedent; see (25).

\[(25) \quad \left[\text{VP} \left[ \text{DP} \text{de papieren van de man} \left[\text{NP} \text{die een rode jas droeg}\right]\right]\right]\]

However, as in the base-generated adjunct account, the relative is outside the scope of the antecedent.

**Leftward deletion:** +
The examples can be derived without problems:

\[(26) \quad \left[\text{S Aux ... de papieren van de man die een rode jas droeg}\right]\left[\text{do ... V de papieren van de man die een rode jas droeg}\right]\]

The non-constituent deletion in the lowest copy is comparable to deletion in Right Node Raising constructions.

**Specifying coordination:** +
Specifying coordination is comparable to the base-generated adjunct theory in this respect. An example is (27).
Again, the scope problem remains.

Specifying coordination plus ellipsis: +
There are no problems; see e.g. (28):

The analysis combines elements of the leftward deletion theory and the specifying coordination theory.

5.2.3. Mirror effects

In principle, each DP can have a relative clause. What happens if two relative clauses are extraposed, e.g. from the subject and the direct object? In these cases a clear mirror effect emerges: the dependencies are nested, not intertwined.

Examples with two relative clauses are extremely hard to comprehend. The effect is perhaps clearer if different construction types are used. See (30), where a comparative clause is extraposed from the subject, and a relative clause from the object.

---

The subject of multiple extraposition deserves a study of its own. Haider (1994) claims that there is a fixed serialization of extraposed phrases:


This is in contradiction with the mirror effect, and I believe that Haider is mistaken. According to the mirror analysis the extraposed phrases/clauses cannot be ordered in an absolute sense with respect to the types of phrases. Rather, the ordering is relative to the position in the matrix to which they are related. Hence an extraposed subject argument clause follows an extraposed relative related to the object; cf. Haider (1994:3). However, reversely, an object argument clause must precede a relative related to the subject; see e.g. (i).

(i) (Alleen) die mensen hebben gezegd dat ze weg zouden blijven die echt niet wilden komen.
   (only) those people have said that they away would stay who really not wanted to come

Or, a subject argument clause may precede an object comparative:

(ii) Het viel minder grammatici op dan gewenst dat deze zin ook acceptabel is.
   it struck less grammarians than desired that this sentence also acceptable is

Along these lines it is not so difficult to break down Haider’s complete serialization in favour of the mirror principle. Nevertheless, three potential difficulties remain: i) strong focus may sometimes override the normal grammatical order; ii) the phenomenon of object scrambling in the matrix may apparently blur the predicted order of object-related phrases in the extraposed domain; iii) the position of adverbial phrases/clauses remains somewhat unclear.
(30) a. Meer jongens hebben de man gezien die een hoed draagt, dan meisjes.
more boys have the man seen who a hat wears, than girls
b. *Meer jongens hebben de man gezien dan meisjes, die een hoed draagt.

More examples are in the Appendix.

The mirror effect is predicted by the specifying coordination theories. It is not derived in the rightward movement, the base-generated adjunct and the base-generated complement theory. Even worse, it cannot be derived (or, more precisely, the opposite is predicted) in the stranding and the leftward deletion theory.

**Rightward movement:** +/–
If extrapoosed phrases from subjects are adjoined to IP and those from objects to VP, then the mirror effect follows automatically. However, if both extrapoosed phrases can be adjoined to VP, it must be stipulated which one is attached first (even in a cyclic derivational grammar, since at the VP level both the subject and the object are there). If there is extrapoosition from two objects – IO and DO – this problem becomes more severe.

**Base-generated adjunct:** +/-
Culicover & Rochemont (1990) argue that extrapoosed constituents from subjects may be attached at the VP level. If so, the mirror symmetry must follow from an additional stipulations. The fact that there are different options here reveals an inherent weakness of the theory.

**Stranding:** –
If we grant for the moment that a relative extrapoosed from a subject can be stranded in SpecVP, the prediction would be as follows:

(31) \[ S_{AUX} DO V [VP [t_s RC_{ex-s}] t_v [t_{do} RC_{ex-do}]] \]
Clearly, if the structure in (31) is possible, it predicts the wrong order – i.e. the order in (29b/30b), which is unacceptable.

**Base-generated complement:** +/-
Multiple extrapoosition can be accounted for by adding another shell inside the VP (cf. Haider 1994/1997). However, the ordering of extrapoosed constituents remains to be explained.

**Leftward deletion:** –
Similar to the stranding analysis, the leftward deletion analysis predicts exactly the opposite of the mirror principle. This is because the base positions of the antecedents necessarily reflect the order of the extrapoosed phrases in these theories, which is wrong.
Specifying coordination: +
Since each specifying conjunct must be attached to the phrase whose specifier is the relevant antecedent, the mirror principle automatically follows; see (32).

\[(\&_{p-1} S \text{Aux} \&_{p-2} D O \ V [\&_{r-2} R C_{do}]) [\&_{r-1} R C_r]\]

The same applies to:

Specifying coordination plus ellipsis: +
with the proviso, of course, that there is ellipsis; see (33).

\[(\&_{p-1} S \text{Aux} \&_{p-2} D O \ V [\&_{r-2} D O \ R C_{do} \ V]) [\&_{r-1} S \ R C_r \ Aux \ DO \ R C_{do} \ V]\]

5.2.4. No preposing
Contrary to (right-)extraposition, preposing (i.e. 'left-extraposition') is impossible:

\[(34) \quad * \text{Die een rode jas draagt, heb ik de man _ een boek gegeven.} \]
who a red coat wears, have I the man _ a book given

This is a problem for the rightward movement and the base-generated adjunct theory.

Rightward movement: –
If a relative clause can move rightwards, why can’t it move leftwards (to a topic or left adjunct position)? I do not see how to prevent it. The fact that the relative c-commands the antecedent in (34) cannot be the explanation, since it does that too in a right-extraposed (adjoined) position according to this theory.

Base-generated adjunct: –
Similarly, why can’t the relative be in a high left-adjoined position?

All other theories are asymmetric, hence we get the following judgements:

Stranding: +
Base-generated complement: +
Leftward deletion: +
Specifying coordination: +
Specifying coordination plus ellipsis: +

5.2.5. No left position
The next logical question (although it may sound a bit silly) is why the relative cannot be left of the antecedent at all:

\[(35) \quad * \text{Ik heb die een rode jas draagt, de man _ een boek gegeven.} \]
I have who a red coat wears, the man _ a book given
If extraposition is adjunction, this is problematic, since left-hand adjuncts in general are not excluded in principle; moreover, the hierarchical status of left-hand and right-hand adjuncts is equal. By contrast, complements can be forced to be on the right (e.g. by the Linear Correspondence Axiom, or some directional licencing mechanism). Furthermore, in the theories that use specifying coordination, a specification follows the phrase to be specified per definition. Hence none of the other theories suffer from this potential problem.

**Rightward movement:** –  
**Base-generated adjunct:** –  
**Stranding:** +  
**Base-generated complement:** +  
**Leftward deletion:** +  
**Specifying coordination:** +  
**Specifying coordination plus ellipsis:** +

### 5.2.6. The Right Roof Constraint

Extraposition does not cross clause boundaries. In other words, it obeys the Right Roof Constraint.\(^{16}\) This is shown in (36).

(36) a. [Dat het meisje dat op de hoek woont die baan wil], is aangekondigd.
   [that the girl that on the corner lives that job wants], has been announced
b. [Dat het meisje die baan wil dat op de hoek woont], is aangekondigd.
   [that the girl that job wants on the corner lives], is announced

c. *[Dat het meisje die baan wil dat op de hoek woont].

In general, \((w h-)\)movement to the left across a clause boundary is degraded, but not strongly ungrammatical. This contrasts with extraposition, which is completely unacceptable.\(^{17}\) All theories have difficulties with this property, except the stranding and the specifying coordination plus ellipsis theory.

---

\(^{16}\) The Right Roof Constraint is equivalent to the Upward Boundedness Constraint. Ross (1967:179) states: “Any rule whose structural index is of the form...A Y, and whose structural change specifies that A is to be adjoined to the right of Y, is upward bounded.” This is paraphrased in Van Riemsdijk & Williams (1986:30) into: “No element that is moved rightward by a transformation may be moved out of the next higher node S.”

\(^{17}\) However, Meinunger (2000:Ch6.4.1) claims that the Right Roof Constraint can sometimes be violated in German. The first context is with verb clusters. If there are additional contradictory temporal adverbials, there must be two or more TPs – which is almost the same as a clause, according to Meinunger. The example is (i):

(i) weil er damals [das Buch t, [heute in einer Woche] abliefern] wollte], [auf das alle gewartet haben], ‘since at that time he wanted to hand in the book a week from now, on which everybody has waited.’

The second context is with a factive clause in the middlefield:

(ii) Peter hat, [daß er uns denjenigen Computer t, schenkt,] fest versprochen, [den er nicht mehr braucht]. ‘Peter can’t go back on his promise that he will give us that computer as a present, that he doesn’t need anymore’

I cannot reproduce these examples in Dutch. Furthermore I think TP is equivalent to IP, not CP, for what it’s worth. However, if sentences like these can be confirmed, further inquiry is necessary to be continued...
Rightward movement: +/-
The difference between movement to the left and movement to the right (extraposition) is not explained, hence additional assumptions are necessary.

Base-generated adjunct: +/-
Here too, additional assumptions to limit the number of potential attachment sites are necessary to prevent Right Roof violations. Notice that (36c) is an extreme case of extraposition from an embedded position (cf. section 5.2.2), which has been claimed to be derivable above.

Stranding: +
Since extraposition from embedded positions cannot be derived in general (cf. section 5.2.2), the Right Roof Constraint is obeyed automatically; see (37).

\[
(37) \begin{align*}
\text{a.} & \quad V_{\text{matrix}} \left[ \text{CP-2} \ X \ [NP_{\text{ant}} \ RC \ Y] \right] \\
\text{b.} & \quad \left[ \text{CP-1} \ [CP-2 \ X \ [NP_{\text{ant}} \ Y]] \right] \ldots \ [V_{\text{matrix}} \ [t_x \ [t_{\text{ep}} \ RC \ t_y]]] 
\end{align*}
\]
Schematically, (37a) shows the base position of the embedded clause, and (37b) the matrix clause after the necessary movements to derive the ungrammatical (36c). Obviously, these would concern non-constituent movement, which is impossible, as required.

Base-generated complement: +/-
Here, too, a Right Roof violation such as (36c) would involve non-constituent movement:

\[
(38) \quad V_{\text{matrix}} \left[ \text{CP-2} \ X \ [VP \ldots \ [NP_{\text{ant}} \ldots \ [RC] \ldots]] \right]
\]
In (38), which corresponds to (37a), X+...+NP would have to be moved, whilst RC is stranded. This is not possible. However, a Right Roof violation could be created by generating the relative in the lowest shell of the matrix VP, as in (39):

\[
(39) \quad \left[ \text{CP-2} \ X \ldots \ [NP_{\text{ant}} \ldots] \ldots \ [VP \ldots \ V_{\text{matrix}} \ [VP \ldots \ RC]] \right]
\]
The configuration \[ ... NP ... ] ... [RC] is similar to the one for extraposition from an embedded position, which has been argued to be derivable above. So additional assumptions are necessary to exclude (39) but include (25).

Leftward deletion: +/-
One major condition on leftward deletion is that the relevant phrase is right-peripheral within the copy of the larger constituent that has been moved leftwards,

\[ \ldots \text{continued} \]
find out why the Right Roof Constraint (or, preferably, its deeper cause) can be overridden in the contexts mentioned.
cf. Wilder (1995). In (36a/c) this condition is not fulfilled, hence a Right Roof violation cannot be derived. However, in an English example like (40) the antecedent is right-peripheral within the embedded clause.

(40) * [That we rescued someone] was praised who was in trouble.

Thus a derivation like (41) cannot be excluded without further assumptions.

(41) [That we rescued someone who was in trouble] was praised [that we rescued someone who was in trouble].

Moreover, if – in a successive cyclic grammar – (36b) is taken as the input to derive (36c), the relevant phrase to be deleted is right-peripheral in its copy.

**Specifying coordination:** +/−

Suppose the basis of (36b/c) is, schematically, (42):

(42) V, ^ [cp. X ] \[&: P] [.. . NP \[.. .] & : [RC]]

The topicalization of the whole CP gives (36b): clause-bound extraposition. A Right Roof violation (36c) cannot be derived, since movement of X+NP would be non-constituent movement (and a violation of the Coordinate Structure Constraint, too). However, Koster and Rijkhok seem to overlook that (36c) could also be analysed as in (43), where the relative is a specifying conjunct attached at the matrix level:

(43) [&: P [CP-2 X ...NP \[.. .] V^ & : [CP-2 ...{NP RC} ...} V ]] \[ & : [CP-2 X ...[NP RC] ...} V ]]

Again, this is just a special case of a configuration in which the antecedent is embedded (cf. section 5.2.2 above). It does not take scope over the relative. Since the relative is only interpretatively linked to the antecedent this should not be a problem, unless further assumptions are made.

**Specifying coordination plus ellipsis:** +

The only possible representation of the crucial case, (36c), is (44), where I abstract away from internal movements:

(44) [&: P [CP-2 X ...NP \[.. .] V] \[ & : [CP-2 X ...[NP RC] ...} V ]]

As required, however, this is not a legitimate representation, since the deletion involved violates a general constraint on deletion. G. de Vries (1992) argues the following: a CP smaller than a conjunct has to contain a left-hand clue to be recoverable; see section 6.3. This constraint prevents sentences like *He says that Peter went to the movies and she says that John went to school. It also excludes (44), where X constitutes the necessary left-hand clue to recover the CP embedded
within the second conjunct. Thus, within this theory, the Right Roof Constraint on extraposition follows from an independent principle on deletion.

5.2.7. No stranding in the middlefield

Stranding in the middlefield is not allowed. That is, if the antecedent is topicalized, the relative clause cannot be left behind at the normal object position; see (45).

(45) * De man heb ik die een rode koffer draagt gesignaleerd.
the man have I who a red suitcase carries noticed

Especially for the stranding theory this is problematic.

Rightward movement: +/−

In general, the first part of a duplex construction is not a constituent. Hence stranding in the middlefield is prohibited because it would involve non-constituent movement. For example, the derivation of (45) from (46) would imply raising of de+man, which is impossible. (Even if the relative is assumed to be an adjunct to DP, de man is not the maximal projection.)

(46) Ik heb [DP de [man [die ...]]] gesignaleerd.

However, if there is no article, it is less clear how topicalization of the first part is to be excluded, though it may still be feasible. A serious problem might be (47) or (48): similar constructions with a normal conjunct and an apposition, respectively.

(47) a. Ik heb [[Jaap en [Joop]] gezien.
I have Jaap and Joop seen
b. * [Jaap], heb ik [t, en [Joop]] gezien

(48) a. Ik heb [[Joop, [onze baas]], gezien.
I have Joop, our boss, seen
b. * Joop heb ik [t, [onze baas]], gezien.

Since extraposition of the second DP is possible, movement of an entire conjunct does not appear to be a violation of the Coordinate Structure Constraint. Therefore movement to the left of the first one should also be possible, but it is not. A way out could be that i) moving one entire conjunct is a violation of the CSC, and ii) extraposition of conjuncts and appositions is not rightward movement, but ellipsis within a second conjunct, as in (49).

(49) Ik heb [[Jaap gezien] en [Joop gezien]].

In fact, I agree with this analysis. Anyway, the rightward movement account of extraposition seems to miss the generalization, here.
**Base-generated adjunct:** +

Leftward movement of the first part of a duplex construction is either non-constituent movement or a violation of the CSC. Since extraposition does not involve movement in this theory, there is no potential inconsistency between rightward and leftward movement.

**Stranding:** –

If extraposition is stranding, it is not clear why the relative cannot be stranded in the middlefield. A schematic derivation of (45) would be (50).

\[
\begin{align*}
(50) \quad a. & \quad V [NP \ RC] \\
& \quad \rightarrow \\
(50) \quad b. & \quad [NP \ RC], V t \\
& \quad \rightarrow \\
(50) \quad c. & \quad NP \ Aux \ S [t_{np} \ RC], V t
\end{align*}
\]

Here it is to be noticed that the structure in (50b) represents a grammatical order (viz. the non-extraposed order), and that the raising of NP from [NP RC] as in (50c) is the way to derive grammatical extraposition (but then with (50a) as the input). Therefore it is not clear to me how to exclude (50) without simply stipulating it.

**Base-generated complement:** +

The explanation is similar to the one in the base-generated adjunct theory.

**Leftward deletion:** +

In the relevant example, there are three members of a movement chain. The structure is sketched in (51):

\[
(51) \quad * \ [NP \ CP], Aux \ S [NP \ CP], V [NP-CP]
\]

As explained, there are two deletion processes: forward deletion of the antecedent and backward deletion of the relative clause. In general, there is an across-the-board requirement on this process: forward/backward deletion must be maximal in the domain of deletion, i.e. the copies of the chain, ordered by c-command. This ATB principle is violated in (51) because the postcedent of backward deletion is not final in the chain. See further Wilder (1995).

**Specifying coordination:** +

Koster and Rijkhoek assume that a relative is always a specifying conjunct. It specifies the antecedent directly, or it is attached to a larger phrase. (The latter case is extraposition.) Therefore stranding in the middlefield is excluded by the Coordinate Structure Constraint. The source of (52b) would be (52a), from which NP is to be raised.

\[
\begin{align*}
(52) \quad a. & \quad [_{&p} NP [\&: RC]] V \\
& \quad \rightarrow \\
(52) \quad b. & \quad NP \ Aux \ S [_{&p} t_{np} [\&: RC]] V
\end{align*}
\]

This is impossible, since NP is the first conjunct of a coordination structure.
It is not necessary to follow Koster and Rijkhoek's radical approach in that a relative (or a result clause, or a degree phrase, etc.) is always a specifying conjunct. It may be the case that only extraposition is accounted for in that way. If so, the argumentation for base-generated adjuncts carries over to this theory, at least with respect to the ban on stranding in the middlefield.

*Specifying coordination plus ellipsis:* +

Similarly, leftward movement of the antecedent (or the first part of a duplex construction) from the middlefield involves either non-constituent movement or a CSC violation.

5.2.8.  Kaan's generalization

Virtually every constituent can be topicalized. See (53) for example. As for (53b), we must assume that the object has been scrambled out of the VP before topicalization takes place.

(53) a. Ik heb de man die een rode jas draagt gezien.  [normal order]
   I have the man who a red coat wears seen
b. [gezien] heb ik de man die een rode jas draagt.  [VP topicalization]
c. [de man die een rode jas draagt gezien] heb ik.  [large topicalization]

As shown before, extraposition can take place from DO and from the topic position:

(54) a. Ik heb de man gezien die een rode jas draagt.  [extraposition from DO]
b. [de man gezien] heb ik die een rode jas draagt.  [extraposition from TOP]

Interestingly, VPs with (optionally) extraposed material are inert, i.e. V+EX cannot be topicalized together. This is Kaan’s generalization (cf. Kaan 1992a/b); see (55a). However, topicalization of a larger constituent including the first part of a split duplex construction is possible (55b).

(55) a. * [gezien die een rode jas draagt] heb ik de man.  [extr. + topicalization]
b. [de man gezien die een rode jas draagt] heb ik.  [extr. + large topical.]

This contrast begs for an explanation. It turns out that only the specifying coordination theories have one.

*Rightward movement:* –

An extraposed constituent is right-adjoined to the VP (or at least VP is one of the possible adjunction sites). Hence this phrase is (or may be) part of the maximal projection of V. Therefore I see no way to prevent the derivation of (55a), which is simply VP topicalization.18 (Again, after object scrambling, which is also necessary to derive (53b) and facts with intervening adverbs.) The possible objection that in

---

18 Büring & Hartmann (1995:197) claim to have a solution, but it is countered in Wilder (1995:283/4).
(55a) the antecedent does not precede the relative clause is irrelevant for several reasons. First, syntax is first and foremost about hierarchy, not about precedence. The relative is embedded; it depends on the definition of c-command whether it would take scope over the antecedent. It probably also c-commands (a trace of) the antecedent in the adjoined extraposition site if there is no topicalization. Second, topicalization is A'-movement, which is to be reconstructed in some way. It is well-known that an anaphor can precede (and c-command) its antecedent if it is topicalized, e.g. Zichzelf, bewonderde hij, niet t._ ‘Himself he didn’t admire.’

*Base-generated adjunct:* –
Similarly, (55a) would be topicalization of the maximal VP, which includes the extraposed right-adjunct.

*Stranding:* –
Since an extraposed constituent is stranded within VP, (55a) would simply be VP topicalization.

*Base-generated complement:* –
Again the same problem.

*Leftward deletion:* –
The derivation of (55b) is unproblematic. The relative is embedded in the VP. The whole AgrOP (including the relative) is topicalized; this gives a lower and a higher copy according to the copy theory of movement. As usual, the lower one is phonetically deleted (by forward deletion), hence it may be viewed as a trace.

A potential derivation of (55a) – which is to be excluded – is sketched in (56). (56a) is more or less the selection structure. The complex direct object moves to the midfield in (56b); then the remnant VP is topicalized (56c).

(56) a. (Ik heb) gezien [de man die een rode jas draagt] →
b. Ik heb [de man die een rode jas draagt], gezien [de man die een rode jas draagt], →
c. [gezien [de man die een rode jas draagt]]_k heb ik [de man die een rode jas draagt], [gezien [de man die een rode jas draagt]],_k →

This is the structure from which to spell out, that is, after the necessary deletions. First, there is deletion concerning the copy with subscript i in (56d). There is forward deletion of *de man* and backward deletion of the relative clause, which gives extraposition. Notice that the sequence *de man die*... in the topic position is not a member of the relevant i-chain, since it is only a part of a member of another chain with subscript k.

d. [gezien [de man die een rode jas draagt]],_k heb ik [de man die een rode jas draagt], [gezien [de man die een rode jas draagt]],_k →
If nothing more happens, de man survives twice – which is impossible. It seems to me that in order to prevent remnant movement to cause double surfacing in general, one must assume that the higher copy (here: of \( k \)) includes information about subdeletion in the lower copy. Hence (56d) becomes (56e).

\[
\text{e. } [\text{gezien [de man die een rode jas draagt]}]_k \text{ heb ik [de man die een rode jas draagt], [gezien [de man die een rode jas draagt]}]_k
\]

Finally, (56f) shows forward deletion of the entire copy of \( k \).

\[
\text{f. } [\text{gezien [de man die een rode jas draagt]}]_k \text{ heb ik [de man die een rode jas draagt], [gezien [de man die een rode jas draagt]}]_k
\]

If I am not mistaken, this leads to a violation of Kaan’s generalization. Hence the contrast in (55) is not predicted; both sentences can be derived.

**Specifying coordination:** +

Example (55b) is derived by topicalizing a large constituent within which extraposition has taken place. This is shown in (57).

\[
\text{(57) a. } (\text{Ik heb}) \; [\&P [\text{de man gezien}] \&: \; [\text{die een rode jas draagt}]] \rightarrow \\
\text{b. } [\&P [\text{de man gezien}] \&: [\text{die een rode jas draagt}]], \text{ heb ik t,}
\]

Clearly, gezien and the relative clause die een rode jas draagt do not form a constituent in (57), the specifying coordination approach to extraposition. Hence they cannot be topicalized together without the antecedent de man. So (55a) cannot be derived. Kaan’s generalization follows from the structure.\(^{19}\)

**Specifying coordination plus ellipsis:** +

Similarly, V+EX is not a constituent, hence cannot be topicalized.

5.2.9. **Islandhood of extrapoosed material**

A relative clause is an island for extraction, whether it is extrapoosed or not; see (58) and (59).\(^{20}\) Example (58) can be recognized as a violation of the Complex Noun Phrase Constraint.

\[
(58) * \text{Wat heb je de man die _ draagt gezien?} \\
\text{what have you the man who _ wears seen}
\]

---

\(^{19}\) Movement of the whole \&P after scrambling out de man is not an option either, since the latter would violate the Coordinate Structure Constraint.

\(^{20}\) However, some speakers of Norwegian, Swedish and Danish accept extraction from a relative clause. This phenomenon is known as *satsflator*. It is subject to severe syntactic and semantic restrictions; see the description in Taraldsen (1981) and Smits (1988:198-203). I will not discuss it here.
(59) * Wat heb je {de man gezien die _ draagt?

After extraposition, as in (59), this is less obvious, but still there are possible explanations independent from extraposition. For instance, it can be assumed that CP is a barrier for movement since SpecCP of a relative clause is always filled with a relative pronoun or operator.

Note that other constructions show that extraposition does play a role with respect to islandhood. See e.g. the examples with a PP complement of A in (60), and a PP object of V in (61). In these cases extraction from the relevant phrase is possible, but not if it is extraposed. This is the so-called freezing effect. More examples are in the Appendix.

(60) a. Waar is hij altijd afhankelijk van _ geweest?
    where has he always dependent of _ been
    b. * Waar is hij altijd afhankelijk geweest van _?

(61) a. Waar heb je aan _ gedacht?
    where have you of _ thought
    b. * Waar heb je gedacht aan _?

These facts are a problem for the stranding theory, the base-generated complement theory, and the leftward deletion theory.

Rightward movement: +
If extraposed phrases are in an adjoined position, then the relevant facts are predicted since adjuncts are claimed to be islands for extraction on independent grounds (whatever the exact cause is).

Base-generated adjunct: +
Similarly.

Stranding: –
In this theory extraposed phrases are simply stranded. Therefore it is predicted that there is no difference in extraction possibilities between phrases in the normal and in the extraposed position. For relative clauses this happens to be correct, but other constructions such as (60)-(61) show that this prediction is wrong.

Base-generated complement –
Leftward deletion: –
As in the stranding theory, the freezing effects remain unexplained.

Specifying coordination: +
Extraposition is analysed as coordination. Extraction as in (59), (60b) or (61b) would involve extraction from the second conjunct only. This is a clear violation of the Coordinate Structure Constraint.
Specifying coordination plus ellipsis: +
Similarly. See the representation in (62).

\[(62) \text{ * Wat heb je [\&P [de man gezien] \&: [de-man die _ draagt gezien]]?}\]

Here the movement of wat out of the second conjunct violates the CSC. Hence extraction from an extraposed phrase is never possible. Extraction from non-extraposed phrases depends on the internal structure of the pertinent phrase.

5.2.10. Optionality
Extrapolation of relative clauses is optional:

\[(63)\]
\[
a. \text{Ik heb de man die een rode hoed op had gezien.}
\]
\[
b. \text{Ik heb de man gezien die een rode hoed op had.}
\]

The Appendix shows that extrapolation of all constructions mentioned in section 3 is optional, although there is a preference to extrapolate clauses and other large phrases. This preference can be explained phonologically. Truckenbrodt (1995) shows that clauses in the middlefield lead to an awkward intonation contour.

There seems to be one exception to the generalization that all extrapolation is optional. Namely, ‘extraposition’ of complement clauses of V is obligatory. In other words, the regular position is postverbal, which contrasts with DP objects of V. So there seems to be obligatory extrapolation. However, it can be shown that complement clauses can be optionally extrapolated from this obligatory position; see (64).\(^{21}\)

\[(64)\]
\[
a. \text{Ze heeft dat ze een nieuwe baan krijgt gewenst, gisteren. [preverbal]}
\]
\[
b. \text{Ze heeft gewenst dat ze een nieuwe baan krijgt, gisteren. [oblig. extr.]}
\]
\[
c. \text{Ze heeft gewenst, gisteren, dat ze een nieuwe baan krijgt. [optional extr.]}
\]

Zwart (1997), Koster (1999a) and others claim that the position of the complement clause in (64b) is actually the base position, not an extrapolated one. Leftward movement for Case reasons is excluded, contrary to the situation with DPs. If so, we can maintain the generalization that all extrapolation is optional.

All theories seem to account for the optionality of extrapolation automatically, since they are designed to explain the right-peripheral position in contrast to the normal position of the constructions discussed.\(^{22}\) However, the position of optionally extrapolated complement clauses is problematic for the VP-internal stranding theories, since the ‘intermediate’ position in (64b) is the position obtained by

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\(^{21}\) Barbiers (1998) shows that a preverbal position as in (64a) is possible for some quotative and factive sentences. This involves leftward movement, and it is not relevant for the discussion here.

\(^{22}\) The trigger problem for the rightward movement theory has been discussed in section 5.1 above; I will not count it again here.
stranding. This means that optional extraposition to a more peripheral position as in (64c) is underivable. The other theories do not have this problem. For instance, in the rightward movement theory the complement clause is moved to a right-adjoined position after right-adjoining the adverb. In short, we have the following judgements:

- **Rightward movement:** +
- **Base-generated adjunct:** +
- **Stranding:** -
- **Base-generated complement:** -
- **Leftward deletion:** -
- **Specifying coordination:** +
- **Specifying coordination plus ellipsis:** +

5.2.11. **Binding at the base**

In general, a subject takes scope over an object, and an indirect object takes scope over a direct object (S > IO > DO). If a phrase – say, a relative clause – is extraposed, it turns out to behave as if it is still at the original position near the antecedent with respect to scope properties. This is stressed by Büring & Hartmann (1995, 1997). Haider (1994, 1997) also shows that phrases extraposed from objects have VP-internal scope. This phenomenon may be called 'binding at the base'. It can be shown in many ways.

First consider variable binding by quantifiers; see (65), where there must be binding from IO into DO, from DO into IO, from S into DO, and from DO into S in (a) through (d), respectively. In (65b/d) this is not possible because of the scope relations S>IO>DO. Each pair in (65a/b/c/d) shows that the judgements are equal for the extraposed and the non-extraposed order.

(65) a. Ik heb iedereen, _het verhaal dat hij, wilde horen_ verteld. [io > do]
   I have everybody the story that he wanted to hear told

a.' Ik heb iedereen, _het verhaal verteld dat hij, wilde horen._

b. *Ik heb _de persoon die het, wilde horen_ [elk verhaal], verteld. [do < io !]
   I have the person who it wanted to hear every story told

b.' *Ik heb _de persoon [elk verhaal], verteld die het, wilde horen._

c. [Elke man], _is het huis waar hij, woonde binnengegaan._ [s > do]
   every man has the house where he lived entered

c.' [Elke man], _is het huis binnengegaan waar hij, woonde._

d. * _De man die er, woonde is_ [elk huis], binnengegaan. [do < s !]
   the man who there lived has every house entered

d.' * _De man is_ [elk huis], binnengegaan _die er, woonde._

The examples in (66) show similar effects using binding Principle C. In each case, Joop may not be c-commanded by the pronoun.
(66) a. Ik heb de vrouw die Joop zus natrok hemzelf, aanbevolen.²³ [io > do]
   I have the woman who Joop’s sister investigated himself recommended
   a.’ Ik heb de vrouw hemzelf, aanbevolen die Joops zus natrok.
   b. * Ik heb hem, een vrouw die Joop, niet kende aanbevolen. [do < io !]
   I have him a woman who Joop not knew recommended
   b.’ * Ik heb hem, een vrouw aanbevolen die Joop, niet kende.
   c. Iemand die Joop, vertrouwde heeft hem, hulp geboden. [s > io]
   someone who Joop trusted has him help offered
   c.’ Iemand heeft hem, hulp geboden die Joop, vertrouwde.
   d. * Hij, heeft de vrouw die Joop, vertrouwde hulp geboden. [io < s !]
   he has the woman who Joop trusted help offered
   d.’ * Hij, heeft de vrouw geholpen die Joop, vertrouwde.

See the Appendix for examples with other constructions. Clearly, these facts are problematic for those theories that do not have a ‘base position’ next to the antecedent, i.e. the base-generated adjunct theory, the base-generated complement theory and the specifying coordination theory. Moreover, the theories that cannot represent extraposition from subjects properly, have a problem with the scope of phrases extrapoosed from subjects. These are the stranding and the leftward deletion theory. Since this is not an entirely independent problem, I will score it as +/-.

Rightward movement: +
It must be assumed that extrapoosed phrases are reconstructed to their original positions. According to Haider (1994, 1997) this is not entirely without problems, but I will grant it the benefit of the doubt.

Base-generated adjunct: −
There is no base position, hence there cannot be reconstruction. This is problematic because a phrase extrapoosed from a direct object c-commands VP-internal material such as the indirect object. By contrast, if one assumes that all elements from VP are raised to a higher position, then every argument c-commands an extrapoosed phrase attached to VP, e.g. DO would take scope over EX_{IO}, which is wrong.

Stranding: +/-
See the text directly below (66) above.

Base-generated complement: −
In this theory an extrapoosed phrase is in the lowest position in the VP. Hence a relative belonging to e.g. the subject is c-commanded by IO and DO, which is contradicted by the facts: etc.

²³ This example shows that Joop, which is embedded in the indirect object, is not c-commanded by hemzelf, the direct object, so Principle C is not violated. Notice that hemzelf is not an anaphor but an identifying emphatic expression (see De Vries 1999b); therefore it may not be c-commanded by a nearby antecedent (like a pronoun). This is not a problem, because Joop is embedded.
**EXTRAPPOSITION 263**

*Leftward deletion: +/-*

See the text directly below (66) above.

*Specifying coordination: –*

As in the base-generated adjunct theory, the problem is that there is no base position. However, if a phrase extraposed from a direct object is attached lower than the direct object (e.g. if there is a strong AgrIOP, or if &:P can split a VP-shell), and an extraposed phrase from an (indirect) object lower than the subject, the scope problem may be partially resolved. If so, there is still a remaining problem. A phrase extraposed from an object topic must be attached at the highest sentence level; see (67). Therefore it should be out of the scope of the subject, which is at odds with the facts; see e.g. (68).

\[(67) \ [\&: P [TOP, do Aux S V] \&: [RC]]\]

\[(68) a. \ \text{Dat ene boek waarin hij, de hemel in geprezen wordt, zal [elke geleerde],}\]

that one book which-in he the heaven in praised is, will every scholar desire

b. **Dat ene boek zal [elke geleerde], begeren waarin hij, de hemel in geprezen wordt.**

Hence an object topic can be interpreted within the scope of the subject, but in the analysis of (67) there is no way to get the relative structurally lower.

*Specifying coordination plus ellipsis: +*

The specifying coordination plus ellipsis theory does not have these problems, since the relative is always structurally associated with the antecedent. For instance, (69) shows why a relative with a direct object antecedent is within the scope of the indirect object, even if the &: phrase is attached at the VP level.

\[(69) \ S \ Aux \ [\&: P [\text{VP IO DO V}] \&: [\text{VP IO-}[	ext{DO RC}] \text{ V }]]\]

Within the second conjunct, IO c-commands DO and the relative associated with it. In an analysis with AgrOPs, the indirect object c-commands the whole &:P; see (70).

\[(70) \ S \ Aux \ [\text{AgrIOP IO} \ [\&: P [\text{AgrDO} DO V] \&: [\text{AgrDO} [\text{DO RC}] \text{ V }]]]\]

Hence the scope predictions are still the same.

**5.2.12. Split antecedent**

It has been reported in Ch2§7.6 above that English and Dutch allow for a split antecedent – or, more precisely: type A multiple relativization – in rare occasions. An example is in (71). The Appendix shows that this is possible with most duplex constructions.
(71)  

\[ \text{Ik heb een vrouw gezien en jij hebt een man bespied die \text{\textit{beide een rode jas droegen}}} \]

[I have a woman seen] and [you have a man spied-on] who both a red coat wore{pt}.

Notice that the relative pronoun, which is the subject, triggers plural agreement on the verb in the relative. This means that (71) is not simply a Right Node Raising construction such as (72).

(72)  a.  

\[ \text{Ik heb een vrouw gezien en jij hebt een man bespied die een rode jas droeg} . \]

I have a woman seen and you have a man spied.on who a red coat wore\sub{SG}

b.  

\[ \text{[Ik heb een vrouw gezien die een rode jas droeg] en [jij hebet een man bespied die een rode jas droeg]} . \]

The relative pronoun \textit{die} can refer to male and female nouns, but not to neuter ones. The analysis in (72) is confirmed by the use of the neuter relative \textit{dat} in (73).

(73)  

\[ \text{[Ik heb een kind gezien dat een rode jas droeg] en [jij hebt een vrouw gezien die een rode jas droeg]} . \]

I have a child seen that a red coat wore and you have a woman seen who a red c. wore

Here \textit{dat} cannot be deleted backwards because it differs phonologically from \textit{die}.

In short, (72) and (73) are not examples of a split antecedent, but Right Node Raising constructions. The true case to consider is (71). Now, let us turn to the theories.

\textit{Rightward movement:} –

The relative clause in (71) cannot have its origin next to one or both split part(s) of the antecedent, because the relative pronoun and the verb are plural, but \textit{de man} or \textit{de vrouw} is singular.

\textit{Base-generated adjunct:} + (but see below)

The relative is generated apart from the antecedent, hence (71) can be treated as a relative with an embedded antecedent, which, moreover, is split. This is not a problem, because the relative pronoun is only interpretatively linked to the antecedent. Like a personal pronoun it can combine two referents into a plural. So the structure could be like (74), where the relative is right-adjoined to the conjunction phrase that combines the two matrix clauses:

(74)  

\[ \text{[\&P [\&P [CP \ldots i \ldots] \& [CP \ldots j \ldots]] [\text{RC die}_{ij} \ldots]]} \]

Notice, however, that if (74) is possible, it makes an explanation for the Right Roof Constraint difficult.

\textit{Stranding:} –

In the stranding theory a relative is always generated in combination with the antecedent. This is impossible here because of the plural relative pronoun and verb.
**Base-generated complement:** +/-

The only way to generate (71) is to embed the relative deep down within the second conjunct:

(75) \[ [\&P [CP \ldots i \ldots] \& [CP \ldots j \ldots [RC \text{die}_{i+j} \ldots]]] \]

The relative pronoun must be interpretatively linked to \(i\) and \(j\). If this is allowed, an explanation of the Right Roof Constraint becomes difficult, since in (75) clause boundaries are crossed (although here they are coordinated, not subordinated).

**Leftward deletion:** –

As in the stranding theory, the relative is always generated in combination with the antecedent, which is impossible here because of the plural pronoun and verb.

**Specifying coordination:** + (but see below)

As in the base-generated adjunct theory, the relative can be attached at the highest level. The conjoined matrix clauses are the first conjunct of the specifying coordination phrase. The relative is the second conjunct.

(76) \[ [\&P [CP \ldots i \ldots] \& [CP \ldots j \ldots]] \& [RC \text{die}_{i+j} \ldots]]

The relative pronoun is interpretatively linked to the two parts of the antecedent. Again, the Right Roof Constraint may become problematic.

**Specifying coordination plus ellipsis:** +/-

Speculatively, one may argue for an entirely different approach; see (77).

(77) \[ [\&P [[\text{Ik heb een vrouw gezien} \text{ en } \text{en een postbode heeft de brief bezorgd}]] \&:

[[\text{ik en jij} \text{ hebben [[een vrouw en een man} \text{ die beide een rode jas droegen} \text{ gezien/bespied}].

The conjoined matrix clauses are specified. However, they are not literally repeated in the specifying conjunct, but conflated. A paraphrase of (77) is the following: ‘I have seen a woman, and you have spied on a man, that is to say, we (you and I) have seen (or spied on) them (i.e. woman and a man) who both wore a red coat.’ This kind of conflation is only possible if the structure of the conjoined sentences is entirely parallel, both syntactically and semantically.

The predicted parallelism may be correct, since sentences like (78), which cannot be derived in this approach, are unacceptable.

(78) * Ik heb een vrouw gezien en een postbode heeft de brief bezorgd
I have a woman seen and a postman has the letter delivered

die beide een rode jas droegen.
who both a red coat wore

The contrast between (71) and (78) may justify the unconventional approach in (77). Notice that the analyses that use interpretative linking (the base-generated adjunct,
the base-generated complement and the specifying coordination theory) cannot
distinguish the two cases: both can be derived in the same way. Therefore the
judgements given before must be reconsidered. In short, we have:

Rightward movement: –
Base-generated adjunct: +/-
Stranding: –
Base-generated complement: +/-
Leftward deletion: –
Specifying coordination: +/-
Specifying coordination plus ellipsis: +/-

5.2.13. Question formation

Question formation can be divided into three kinds: i) topicalization of the whole
construction, ii) topicalization of the first part only and stranding the second in the
middlefield (which is unacceptable), and iii) extraposition from a topic. This is
shown in (79).

(79) a. Hoeveel mensen die weggingen heb je gezien?
   how many people who left have you seen
   b. * Hoeveel mensen heb je die weggingen gezien?
   c. Hoeveel mensen heb je gezien die weggingen?

The constructions in (79b) and (79c) are special cases of stranding in the middlefield
and extraposition from a topic that have been treated in sections 5.2.7 and 5.2.1
above, respectively. (79a) is simply pied piping of a large wh-constituent; which can
be derived in any theory, provided that a duplex construction is a constituent (in the
non-extraposed order). This seems to be generally assumed, hence question
formation of type (i) is unproblematic.

Rightward movement: +
Base-generated adjunct: +
Stranding: +
Base-generated complement: +
Leftward deletion: +
Specifying coordination: +
Specifying coordination plus ellipsis: +

5.3. Summary and conclusion

It must be stressed that all extraposable constructions behave similarly in many
ways. This is shown in the Appendix. It suggests that the relevant properties must
follow from the extraposition system itself, rather than from the structures of the
particular constructions. This does not mean, however, that the behaviour needs to
be equal in all respects, since there may be construction-specific (and language-
specific) additional constraints.
A final demand on extraposition theories is therefore their general applicability. Clearly, the adjunction theories and the specifying coordination theories are capable of extraposing any kind of phrase. On the other hand, the stranding theories (including the leftward deletion theory) can only extrapose argument-related phrases. Stranding of e.g. a sentence adverb within VP is impossible, since it cannot be generated there. Therefore these theories miss a large generalization. The base-generated complement theory does have an additional VP-internal position for extraposed phrases, but it seems strange to generate adverbial material as the complement of V.

All results are summarized in table 3. They are scored simplistically as follows: + is one point, +/- is zero points, – is minus one point. I am aware that not every problem is equally important, but the results are clear enough to avoid a difficult discussion.

Table 3. An empirical and theoretical evaluation of extraposition theories.

<table>
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<tr>
<th>empirical or theoretical issue</th>
<th>rightw. movement</th>
<th>base-gen. adj.</th>
<th>stranding</th>
<th>base-gen. compl.</th>
<th>leftw. deletion</th>
<th>spec. coordination</th>
<th>spec. co. + ellipsis</th>
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<td>+</td>
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<td>general applicability</td>
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<td>–</td>
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<tr>
<td>no right-hand adjunct (Antisymmetry)</td>
<td>–</td>
<td>–</td>
<td>+</td>
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<tr>
<td>trigger for movement (Minimalism)</td>
<td>–</td>
<td>+</td>
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<tr>
<td>promotion theory of relative clauses</td>
<td>+/-</td>
<td>–</td>
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<tr>
<td>no interpretative licensing</td>
<td>+</td>
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<td>+</td>
<td>–</td>
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<tr>
<td>score</td>
<td>0</td>
<td>1</td>
<td>-3</td>
<td>1</td>
<td>2</td>
<td>10</td>
<td>17</td>
</tr>
</tbody>
</table>
I conclude that the stranding theory is quite problematic, in fact untenable. The rightward movement theory,\(^{24}\) the base-generated adjunct theory, the base-generated complement theory, and the leftward deletion theory are not much better. This confirms several statements made before in the literature. I quote:

Haider (1994:5):
"Culicover & Rochemont seem to overlook that their argument against [rightward] movement is an argument against their own position [i.e. the base-generated adjunct theory], too."

Haider (1994:19):
"Accounts that employ movement to the right or base generation of adjoined positions miss their explanatory target on empirical and theoretical grounds."

Büring & Hartmann (1995:180):
"Neither of these more recent analyses of extraposition [i.e. the stranding theory and the base-generated complement theory] can account for the relevant facts in a thorough and revealing fashion."

Koster (2000c:12):
"We must conclude that extraposition is highly problematic, both from the point of view of the classical analysis [i.e. the rightward movement theory] as from the point of view of Kayne's alternative [the stranding theory]."

Thus the most promising are the specifying coordination theories, especially the one with deletion. The next section discusses it in more detail.

6. Asyndetic specifying coordination and ellipsis

I have shown how the properties of extraposition can be explained by simply using the structure of specifying coordination. This section discusses the structure itself in more detail. It compares the ellipsis approach with the non-ellipsis approach (§6.1), argues for coordination as a behindance relation (§6.2), and elaborates on deletion (§6.3).

6.1. Advantages of ellipsis in specifying coordination

Recall from Chapter 6, section 5.1, that there are three main types of coordination. These are repeated in (80). I will not repeat the discussion on the concept of specifying coordination here.

\(^{24}\) Haider (1994) points out yet another difficulty for this theory. If extraposition is adjunction to the right, any phrase that can be scrambled should be extraposeable. This is not the case however: there are phrases that can be extraposed but not scrambled (e.g. PPs) and the other way around (argument DPs).
I have shown that extraposition is asyndetic specifying coordination. Thus (81a) is analysed as in (81b), Koster and Rijkhoek’s representation, or (81c), my representation.  

(81) a. Ik heb de man gezien die een rode jas droeg.
   I have the man seen who a red coat wore

   b. Ik heb [de man gezien [&: [die een rode jas droeg]]].

   c. Ik heb [de man gezien [&: [de-man die een rode jas droeg gezien]]].

Problems aspects of Koster and Rijkhoek’s analysis treated above are the following ones:

I. Interpretative licencing. (See section 5.1 above.)
II. The promotion theory of relative clauses. (See section 5.1 above.)
III. The Right Roof Constraint. (See section 5.2.6 above.)
IV. Binding at the base. (See section 5.2.11 above.)

But there are more arguments in favour of the ellipsis analysis and against theirs.

V. CSC violations.
According to Koster and Rijkhoek, a constituent extraposed from the direct object is inserted as a specifying conjunct at the level of AgrOP. This is shown in more detail in (82).

(82)   Ik heb [&#P [AgrOP [de man]ko (AgrO) [VP tga gezien tab]] [&: [RC ]]].

The crucial thing to notice is that, as usual, the subject is moved out of the VP to its normal overt subject position. However, in (82), this means extraction out of the first conjunct (which is the whole AgrOP). This is a direct violation of the Coordinate Structure Constraint. In fact, this problem always occurs, since any further derivation of the sentence has to proceed from the first conjunct onwards (except if the whole clause is coordinated). The CSC cannot be abandoned, because it is crucial for the explanation of ‘no stranding in the middlefield’, ‘islandhood of extraposed material’, etc.

The specifying coordination plus ellipsis theory does not have this problem, since all relevant material is syntactically present in both conjuncts. Therefore

---

25 The specification is preferably asyndetic, because the type of specification used here is comparable to a type B (i.e. attributive) non-restrictive apposition such as Joep, a nasty liar, which also resists an overt coordinator; see Ch2§5.1. By contrast, extraposition of an adverbial phrase need not be asyndetic: Ik ben [e] wezen zwemmen, (namelijk), in de Gaasperplas [I have been swimming, (namely), in the Gaasperplas]. Clearly, this type compares to type A(ii) (i.e. identificational) non-restrictive attribution such as a nice present, (namely) a book by Mulisch.
(subject) movement to a higher position from within the coordination phrase is always across-the-board; see (83), where the subject traces are printed in bold face.

(83) Ik heb [\&: \[Agrop \[\text{de man}\] \[\text{do} (AgrO) [\text{vp t_s gezien t_pb}]] \[\&:
\[Agrop \[\text{de-man RC}\] \[\text{do} (AgrO) [\text{vp-t_s gezien t_pb}]] \]

VI. Unbalanced conjuncts.
Specifying coordination as Koster and Rijkhoek propose it, heavily relies on the possibility of unbalanced coordination. In (81b) the first conjunct is an AgrOP, the second a relative clause. Although there are instances of syntactically unbalanced coordination (she\_NOM and him\_ACC; there\_ADV and behind\_P you), i.e. Williams’s Law of Coordination of Likes can be easily violated, the possibilities are not unlimited. Sturm (1995) shows that coordination can be syntactically unbalanced, provided that the conjuncts are functionally equivalent. Clearly, AgrOP and an extraposed phrase such as a relative clause or a prepositional phrase are not equivalent in any sense, neither functionally, nor syntactically. Hence this is a strong argument in favour of the ellipsis analysis, where the conjuncts are balanced.

VII. Restriction is not specification.
An extraposed relative can restrict the meaning of the antecedent. If the relative alone is the specifying conjunct, there is a semantic problem, exactly similar to the one elaborated on in the previous chapter. The representation is equivalent to the one (in the non-extraposed order) where a restrictive relative is attached to the antecedent by means of specifying coordination, instead of being a complement. I have argued in Ch6§5.1 that restriction is not specification – which I will not repeat here – hence the representation by Koster and Rijkhoek constitutes a semantic anomaly.

In the ellipsis theory the relation between the relative and the ‘antecedent’ in the first conjunct is indirect. The relative restricts the antecedent in the second conjunct in the regular way, that is, it involves complementation at least (see below). Furthermore, there is a relation between the first and second conjunct, say AgrOP\_1 and AgrOP\_2. This is a specification relation: the second AgrOP is a subset of the first, since one of its arguments is more specific. Thus the problem vanishes.

I conclude that the specifying coordination plus ellipsis theory is to be preferred over the variant without ellipsis.

6.2. Coordination as behindance
At this point consider the syntactic nature of coordination. I have not addressed it in detail before, but since the analysis of extraposition (and also apposition) crucially depends on coordination structures, a closer inspection of this phenomenon is desirable. I will argue that an analysis of coordination in terms of behindance in combination with a ‘CoP’ theory is the most feasible, especially from the perspective of specifying coordination.
If we take binary branching for granted, there are essentially two possibilities concerning the syntactic analysis of coordination: 

i) coordinated constituents are the specifier and the complement of a coordination projection, say CoP; 

ii) the second conjunct is in a behindance relation to the first, i.e. in a parallel tree structure.

See (84), where Co stands for e.g. AND (\(\land\)), NAMELY (\&:), or (exclusive) OR (\(\lor(x)\)).

(84) a. \([\text{CoP XP } [\text{Co} \text{ Co YP}]]\) 

b. \([\text{XP} \text{ Co YP}]\)

The CoP analysis (84a), is defended by Johannessen (1993, 1998). Coordination as behindance (the 3D approach in popular terms), (84b), is proposed by Goodall (1987) and G. De Vries (1992), and extended to other constructions by Van Riemsdijk (1998).

Until now I have used the more conventional way of coordination like (84a) in order to prevent confusion, but I want to switch to another approach at this point, for two reasons. First, I will use G. de Vries’s theory on ellipsis, which is presented in tandem with the behindance view on coordination, so the internal consistency of this chapter is guaranteed if I maintain that idea (although this is probably an unnecessary safety precaution). Second, there are some general advantages of the alternative representation that I will present below. I want to stress, however, that the exact analysis of coordination is not essential to the theory of extraposition proposed in this chapter.

Both approaches to coordination in (84) have their merits. It seems to me that linguistics needs a revolutionary, new analysis where the advantages of both theories are somehow combined. An attempt to achieve this goal is presented in Grootveld (1992, 1994). She proposes CoPs (without a specifier) that are behind each other. Unfortunately this does not yet adequately solve all apparent paradoxes that a coordination theory faces. Therefore I tentatively propose an unconventional alternative. My considerations are the following ones:

The problem of the categorial status of the connection

A normal coordinator like AND or OR has (almost) all characteristics of a functional head. This is shown by Grootveld (1992, 1994), and at length by Johannessen (1998). It is not the case for initial coordinators (e.g. neither...nor, both... and, not only... but ...also/too); see again Johannessen (1998), and also G. de Vries (1992). An interesting observation is that an initial coordinator can move and trigger inversion in some cases: \textit{Ofwel heeft Joop gelogen, of (hij heeft) de waarheid gesproken} ‘Either has Joop lied, or (he has) spoken the truth’. This suggests that initial coordinators are maximal projections, not coordinative heads – even though sometimes they have the appearance of a coordinative head (e.g.}

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26 See e.g. Grootveld (1992, 1994) and the references there for comment on non-binary branching approaches to coordination.

27 I leave alternative analyses such as Munn’s or Van Zonneveld’s out of consideration. They are variants of the CoP analysis. See e.g. Johannessen (1998) and Grootveld (1992, 1994) for comment.
either... or', 'both... and' in Dutch). I follow G. de Vries (1992) and many others in that initial coordinators are adverbial phrases; normally they are adjoined to the coordinative phrase as a whole.\textsuperscript{28} Finally, and this is the most difficult point, a specifying connection can be a word or a phrase, e.g. namely, or, that is (to say), or rather. I conclude the following:

A. A normal coordinator is a functional head.
B. An initial coordinator is an adverbial adjunct phrase.
C. A specifying coordinator can be followed or replaced by a phrase.
D. Thus there are i) coordinative heads, ii) coordinative adverbs, and iii) specifying coordinative phrases.

The CoP theory (84a) can account for coordinative heads and adverbs, but there is no room at all for a specifying coordinative phrase, because there is only a head position available (&: in this case). Within the behindance approach, the connection between the conjuncts is a discourse connection, according to G. de Vries (1992). This is an unsatisfying answer. It potentially leaves room for specifying phrases like that is, since a discourse link does not need to be a syntactic head, but the internal syntax of the specifying phrase remains unaccounted for, as well as the fact that a normal coordinator behaves as a functional head. Grootveld's theory treats all coordinators as heads, which is incorrect for coordinative adverbs. Furthermore she has no available position for specifying phrases, either.

\textit{The hierarchy paradox}

In the CoP theory the first conjunct c-commands the second, which in turn c-commands the third, etc. Is it correct to assume this counter-intuitive syntactic hierarchy? Binding facts suggest that the answer is no. An anaphor within the second conjunct cannot be bound by the first: *Joop, \textit{en zichzelf}, 'Joop and \textit{SE-SELF}'; * \textit{zij, en elkaar}, \textit{buren} 'they and each other's neighbours'.\textsuperscript{29} Furthermore, the second conjunct cannot contain a bound variable: \textit{[every woman]}, \textit{and [her, husband]}.

A syntactic hierarchy implies a logical hierarchy (but not the other way around, as I will show). However, in the case of ordinary multiple coordination a representation like \textit{[XP [\& [YP [\& [ZP [\& [UP [\& WP]]]]]]]]} does not necessarily reflect the meaning well. In a sentence such as \textit{The teacher handed over the tests to}

\textsuperscript{28} This is clear from observations such as (i) and (ii):

(i) zowel mooie tafels als stoelen 'both beautiful tables and chairs'.
(ii) * mooie zowel stoelen als tafels 'beautiful both tables and chairs'.

\textsuperscript{29} Notice that this cannot be tested with the ambiguous himself in English; cf. Ch3§2.3.4. Some more facts are (i) and (ii), where in each case a pronoun is possible, but not an anaphor.

(i) Een gesprek tussen [Joop, en hemzelf/\{zijn, (eigen) buren\}/*zichzelf,]
\textit{a conversation between [Joop and PRON-SELF/[his (own) neighbours]/*SE-SELF]}
(ii) Een gesprek tussen [hen, en \{hun, (eigen) buren\}/*\{elkaars, buren\}]
\textit{a conversation between [them and their (own) neighbours]/*each other's neighbours]}

Note that the context requires an identifying emphatic expression (which is not an anaphor; cf. De Vries 1999b) or a possessive construction; but not a bare pronoun.
Joop, Piet, Mieke, Jaap and Joep I do not feel an implied hierarchy in the sense that Jaap and Joep forms a group, Mieke forms a group with [Jaap and Joep], Piet forms a group with [Mieke, [Jaap en Joep]], and Joop forms a group with [Piet [Mieke, [Jaap en Joep]]]. However, there can be a logical hierarchy in sentences like I will invite Joop or Joep and Jaap. Depending on the intonation pattern the meaning is (Joop ∨x (Joep ∧ Jaap)) or ((Joop ∨x Joep) ∧ Jaap). Even in this case there cannot be a syntactic hierarchy in the sense of c-command, since tests with Binding give the same results as above. Finally, notice that a logical hierarchy can be stressed or forced with an additional coordinative adverb: (Joop and (either Jaap or Joep)), (Jaap and (both Mini and Maxi)). In short, I conclude the following:

E. There is a distinction between syntactic hierarchy and logical hierarchy.
F. There is no syntactic hierarchy between (groups of) conjuncts.
G. There is an optional logical hierarchy between groups of conjuncts.
H. If there is a logical hierarchy, there can be an additional coordinative adverb which is embedded.

The CoP theory as in (84a) assumes a syntactic hierarchy, which is incorrect. The behindance theories (84b) and Grootveld (1992, 1994) do not have this problem. Clearly, the advantage is that there is no syntactic hierarchy. However, the behindance theory provides no means to account for an optional logical hierarchy, as far as I can see. Moreover, they do not predict the possibility of an additional coordinative adjunct, whereas the CoP theory does, e.g. [xP [xP Adv [xP YP [vx ZP]]]]. The solution presented below is similar to the one in Grootveld (1994).

**The feature problem**
If, for instance, two singular phrases are conjoined, the result can be a plural. Similarly the gender and person of the whole can be different from each of the conjuncts. Hence what is syntactically needed is a mechanism to accommodate for the fact that the φ-features of two or more coordinated phrases can be different from the separate conjuncts. A straightforward solution is to assume that there is a node on top of the conjuncts, such as CoP.

I. There must be a projection on top of the separate conjuncts.

Hence the CoP theory and Grootveld’s theory accommodate for the feature problem, but the behindance theory as in (84b) does not.

Furthermore, Johannessen (1998) shows that unbalanced coordination is not very exceptional; it can be found cross-linguistically. The relevant examples here are those where a second nominal conjunct has an unexpected Case, e.g. she\textsubscript{NOM} and him\textsubscript{ACC}. This asymmetry can be explained well in the CoP theory, e.g. by assuming that the & head blocks transmission of grammatical features and licences default Case of its complement. However, what is bothering is that the derivation of

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30 The (lexical-semantic) procedure to establish what the features of CoP are, is quite complex; cf. Link (1984) and G. de Vries (1992:109ff), but this is not what concerns me here.
symmetrical coordination is awkward within this theory. In other words, it is designed to explain the systematic exception, but it fails to account for the regular case in a feasible way. On the other hand, the behindance approach naturally accounts for the regular case, but it is not clear how to handle asymmetric instances of coordination, as far as Case is concerned.

The findings in A through I lead to the following proposal. First, there must be both behindance and a CoP. Second, conjuncts are in the same syntactic position, but behind each other. Third, coordinative heads are in Co; coordinative adverbs can be treated as adjuncts to CoP. Fourth, since a coordination does not start with a coordinative head, the first conjunct is the specifier rather than the complement of Co. Consequently, every conjunct of a multiple coordination is the spec of a CoP in another plane, except the last one. Fifth, it is the presence of Co (or Co'; see below) that triggers a second (or third, etc...) conjunct in another plane. The results up to this point are drawn in (85), where the dots indicate behindance. Notice that XP, YP and ZP are on the same vertical level, hence there is no hierarchical difference.

(85)  
\[
\begin{array}{ll}
\text{CoP}_1 & \text{CoP}_2 & \text{ZP} \\
\text{XP} & \text{Co'} & \text{Co}_2 \\
\text{Co}_1 &
\end{array}
\]
\begin{itemize}
\item e.g. (either) Joop or Jaap or Joep
\item either Joop or Jaap or Joep
\end{itemize}

At this point it becomes clear where there is room for a specifying coordinative phrase: the complement position of Co. An indication that this might be correct are complex phrases like or rather, and that it to say, and in Dutch en wel, oftewel. All of these seem to consist of a coordinative head plus some kind of complement. Thus we have (86):

(86)  
\[
\begin{array}{ll}
\text{XP} & \text{YP} \\
\text{&:} & \text{SpP} \\
\end{array}
\]
\begin{itemize}
\item e.g. the White House, or rather the house with the Oval Office
\end{itemize}

The specifying coordinative head and phrase are united in &:'. In the third dimension XP and YP are sisters. They are connected by a specifying coordinative relation.

Now consider the case where there is a logical hierarchy, say (Joop or (Jaap and Joep)). Clearly, the first coordinative head must not select the second nominal phrase, but the second coordination phrase; see (87):
In this representation YP and ZP are sisters in the third dimension, related by AND. XP is a sister of \( \wedge P \), related by OR. Hence there is a logical hierarchy. As required, there is not a syntactic hierarchy between XP, YP and ZP, because there is no c-command relation between any of them.

Finally, consider point H above: the possibility of an intermediate coordinative adverb. If there is a logical hierarchy, as in (87), there can be an additional adverb. This is because Co\(_1\) is related to the maximal CoP\(_2\). See (88a). If there is no such hierarchy, Co\(_1\) is linked to the second conjunct, not to CoP\(_2\). In that case, an extension of CoP\(_2\) with an adjunct would be a countercyclic procedure, which I assume to be impossible; see (88b).

Thus the analysis reflects all properties essential to coordination.

Linearization of 3D structures involves the simple rule if Y is directly behind X then X directly precedes Y. I agree with Grootveld (1992, 1994) that behindance must be an independent notion. It does not interfere with other grammatical notions. Hence every conjunct has to be grammatical in its syntactic context. This theory deviates substantially from Goodall (1987) and G. de Vries’s (1992) system with Reduced Phrase Markers, which has received heavy critique – see Grootveld (1992) and the references there.\(^{31}\)

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\(^{31}\) If I understand correctly, this means that I cannot use G. de Vries’s solution for Right Node Raising constructions. In short, it comes down to the effect that a right bracket can close several left brackets, provided that they are in a parallel structure. This accounts elegantly for the fact that the left ‘gap’ (which, then, is not a gap in this theory) is right-peripheral and that both the ‘gap’ and the right node do not need to be a constituent. However, Wilder (1994, 1995, 1997) provides a feasible alternative system with backward deletion. Wilder’s (2000) approach with multiple dominance does not account for non-constituent RNR.
I will not further discuss the nature of coordination. Obviously, the theory set out above deserves further inquiry.

I have argued that extraposition involves specifying coordination. Thus a sentence like (89a) is represented as in (89b), where the second conjunct is in a parallel tree structure, as drawn more precisely in (89c):

(89) a. Ik heb *de man gezien die een rode jas droeg.
    b. Ik heb [\& &P [XP de man gezien]
        \&: [YP de man die een rode jas droeg gezien]].
    c. Ik heb...
        \&: P
        / \ / \ ...
        XP \ &:’
        / \ / \ &: (SpP)

Here XP and YP are AgrOPs. In this example the connection \&:’ (‘namely’) is asyndetic.

6.3. Rules on ellipsis

The ellipsis used in the specifying coordination plus ellipsis theory, e.g. in (89), needs a justification. A suitable, independent theory on ellipsis is already available in G. de Vries (1992). She elaborates on Fiengo’s Head Condition, among other things. Some important results are summarized in (90).

(90) Conditions on ellipsis (simplified), taken from G. de Vries (1992):

a. The Head Condition: X [lex] → XP [lex]

b. Recoverability:
   (i) An elliptical conjunct has to contain at least one remnant to be recoverable.
   (ii) An elliptical CP smaller than a conjunct has to contain a left-hand clue to be recoverable.

The Head Condition states that if the head of a projection is lexical, then all its arguments must be lexical, too. For example, if V is the relevant head, we have: *I saw Pete and *(you) saw *(John). If the head is absent, all kinds of remnants may be present: *I saw Pete and you saw John. Recoverability assures that there are not zero remnants: *I saw Pete and you saw Joop. The second recoverability condition prevents sentences like *Joop says that Peter likes grapes and Jaap says that John likes apples.\(^\text{32}\)

\(^{32}\) If the left-hand clue that is spelled out (*Joop says that Peter likes grapes and Jaap says that John likes apples), the sentence is still unacceptable, since there are Head Linking rules that I will not to be continued...
As long as no condition is violated, there is a certain freedom concerning the remnants. However, it is tacitly assumed that remnants must provide new information. This important pragmatic principle is illustrated in (91).

(91) John gave me a book yesterday, and...

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<tbody>
<tr>
<td>a.</td>
<td>Pete</td>
<td>you</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>Pete</td>
<td>you/me</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>Pete/John</td>
<td>you</td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>Pete</td>
<td>you</td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>Pete</td>
<td>gave me</td>
<td></td>
</tr>
<tr>
<td>f.</td>
<td>Pete</td>
<td>gave me</td>
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</table>

In (91a-e) any combination of remnants is possible as long as each of them provides new information. In (91f) things are different because of the Head Condition: the verb is present, therefore all its arguments must be projected, too, whether new or not.

As long as (90) is obeyed, almost anything goes, provided that no information is repeated. Hence (92) might be viewed as a kind of economy condition.  

(92) **Condition on Remnants:**

A remnant must provide new information.

It is remarkable that a violation of (92) in (91b-e) is unacceptable, whereas (91f) is perfectly all right, although only one of the arguments provides new information. Here the condition simply doesn’t apply because there is no deletion, hence no remnant.

This brief exposé on deletion/ellipsis in general suffices for the present purposes. For more details I refer to G. de Vries (1992), but also Wilder (1994, 1995, 1997, 2000), and the references there.

Now consider the surface structure of an extraposed relative clause; see (93), where the promotion theory of relative clauses is applied:

(93) Ik heb [\textbf{\&P} [\textbf{\&} [\textbf{\&} \text{gezien}] [\text{dp de man}] [\text{gezien}]]].

The Condition on Remnants demands that all old information is deleted in the second conjunct. Hence *de, man* and *gezien* are elliptical. The conditions in (90) must also be checked. First, the head of the construction (*gezien*) is deleted, hence...
there may be other deletions and remnants. Second, there is a remnant (the relative clause), hence the elliptical conjunct is recoverable. Thus it turns out that (93) can be derived without problems.\(^{35}\)

### 7. Extrapolation in general

Extrapolation of duplex constructions (cf. section 3) is carried out according to the following scheme:

\[
\text{(94) } \ldots \{\&: \text{XP } \{\text{XP}_1 \{\text{Dup}_1 \text{YP}\} \} \}.
\text{\&: \{XP}_2 \{\text{Dup}_1 + \text{EX} \text{YP}\} \}
\]

At a certain point the sentence splits up into two parts: a first and second conjunct XP\(_1\) and XP\(_2\), where the second specifies the first. The first conjunct contains only the first part of the duplex construction, Dup\(_1\) (e.g. the antecedent of a relative clause) – next to the remainder YP of the phrase XP (e.g. the verb). The second conjunct contains the whole construction Dup\(_1\)+EX (plus the remainder YP) **syntactically**, but **phonetically** only EX – the second, extrapolated part of a duplex construction (e.g. a relative clause). Some examples are given in (95) through (99), where I abstract away from movements internal to AgrOP.

**PP complement of N:**

\[
\text{(95) } \text{Ik heb } \{\&: \text{Agrop} \{\text{DP } \text{de man gesteld}\} \}.
\text{\&: \{Agrop}_2 \{\text{DP } \text{de man met de hoed} \text{YPD}\} \}
\]

I have the man seen with the hat

**Complement clause of N:**

\[
\text{(96) } \text{Ik heb } \{\&: \text{Agrop} \{\text{DP } \text{de vraag} \text{gesteld}\} \}.
\text{\&: \{Agrop}_2 \{\text{DP } \text{de vraag } [\text{CP of} \text{his wegging}\} \text{gesteld}\} \}
\]

I have the question asked if he left

\(^{35}\) However, some remaining issues are not entirely clear. First, I do not know exactly how G. de Vries's conditions on NP domains of ellipsis translate into a DP theory, how they interact with CP domains, and hence how they would apply to structures like (93). I leave this for future research. Second, regularly coordinated sentences with structures similar to those proposed for extrapolated relatives, such as (93), vary in acceptability:

(i) ? Joop zag de man die een rode jas droeg en Jaap zag de man die een groene jas droeg

Joop saw the man who a red coat wore and Jaap saw the man who a green coat wore Notice, however, that there is a crucial difference with (93): in (93) de man in the first and second conjunct has the same referent, but in (i) the deleted person is necessarily someone else. The same effect can be shown in another way: in (ii) the deleted someone is preferably interpreted with the same referent as the overt someone.

(ii) Yesterday someone gave Joop a book, and today someone gave Jaap a CD.

I think this indicates that forward deletion is not simply an operation on phonetic form. The meaning is involved, too. On different grounds, Wilder (1997) concludes that forward deletion, contrary to backward deletion, is not PF-deletion, but it involves insertion of material with semantic and syntactic but not phonological features.
Complement PP of A:

(97) Hij is altijd [\&P [Ag rop1 [AP afhankelijk] geweest] \&: [Ag rop2 [AP afhankelijk [PP van ons]] geweest]] ge
he has always dependent been of us

Result clause:

(98) Ik heb [\&P [Ag rop1 [Dexp zoveel] gedaan] \&: [Ag rop2 [Dexp gedaan [CP dat ik uitgeput was]] gedaan]] ge
I have so much done that I exhausted was

Comparative clause:

(99) Ik heb [\&P [Ag rop1 [Dexp meer] gedaan] \&: [Ag rop2 [Dexp gedaan [CP dan [CP ze hadden verwacht]]] gedaan]] ge
I have more done than they had expected

If the schema in (94) is applied without further thought, an extraposed conjunction might be analysed as in (100a), where Jaap is conjoined to Joop within the specifying conjunct. However, this is highly unlikely since the much simpler analysis in (100b) is compatible with the meaning of the sentence.

Conjunction:

(100) a. Ik heb [\&P [Ag rop1 [DP Joop] gezien]] \&: [Ag rop2 [DP Joop] gezien] \& [DP Joap]
I have Joop seen and Jaap

I have Joop seen, our boss

The difference with (95)-(99) is that EX (here: Jaap) does not restrict the meaning of Dup1 (here: Joop), but they are conjoined in the non-separated order.

Something similar can be said about appositions. An analysis like (101) is not clearly excluded, but there is a simpler analysis possible; see (102).

Apposition:

(101) Ik heb [\&P [Ag rop1 [DP Joop] gezien]] \&: [Ag rop2 [\&P [DP Joop] gezien]] \&: [DP Joap]
I have Joop seen, our boss

(102) Ik heb [\&P [Ag rop1 [DP Joop] gezien]] \&: [Ag rop2 [DP Joop] gezien]] \&: [DP Joap]
I have Joop seen, our boss

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36 The degree phrase Dexp is an extended projection of NP, taken over from Rijkehoek’s (1998) analysis. I have no claims concerning the internal analysis of result clauses or comparative clauses.

37 See Den Besten (1978, 1989) and the references there concerning the internal analysis of comparative clauses.
The analysis in (101) can be paraphrased as ‘I have seen Joop, that is to say, I have seen Joop, namely, our boss.’; (102) as ‘I have seen Joop, in other words, I have seen our boss’. The first possibility seems a little overdone.

Importantly, both conjuncts must be grammatical in combination with the rest of the sentence. This has many beneficial consequences. Generally, selected constituents (i.e. arguments and proper predicates) cannot be extraposed, because then the first conjunct would be ungrammatical. For instance, if an indirect object is extraposed, there would be a first conjunct where an argument lacks, hence some Case feature or theta-role cannot be checked/licenced, etc. Exceptions such as complement clauses and free relatives are treated below.

By contrast, adjuncts can generally be left out with preservation of grammaticality, so they can be extraposed. Thus, apart from the duplex constructions above, where the associative elements have a first part Dup1 that is the grammatical head of the construction, a list of independent adjuncts can be analysed in a similar fashion: an extraposed order is obtained according to the scheme in (103), where [e] indicates the regular position of the phrase in question.

(103) \[ &:: [XP1 \[ [e] YP \] ] \]

Examples are provided in (104) through (109). These are the ‘simplex extrapposable non-argument phrases’ from section 3. Notice that [e] can be filled with a dummy, as indicated.

**Sentence adverb:**

(104) a. Ik ben (toen) wezen zwemmen, (namelijk) gisterenmiddag. 
I have (then) been swimming, (viz.) yesterday afternoon

b. Ik ben \[ &:: [IP1 \[ [e] wezen zwemmen \] ] \].

**Adverbial PP:**

(105) a. Ik heb (er) gezwommen, (namelijk) in de Gaasperplas.
I have (there) swum, (viz.) in the Gaasperplas

b. Ik heb \[ &:: [AgOP1 \[ [e] gezwommen \] ] \].

**Adverbial NP:**

(106) a. Ik ben (toen) wezen zwemmen, (namelijk) die dag.
I have (then) been swimming, (viz.) that day

b. Ik ben \[ &:: [IP2 \[ [e] wezen zwemmen \] ] \].
Adverbial clause:

(107) a. Hij is (daarom) al vertrokken, (namelijk) omdat hij haast had.
    he has (therefore) already left, (viz.) because he in-a-hurry was

b. Hij is [& P [IP1 [e] al vertrokken]
    &:: [IP2 [omdat hij haast had] al-vertrokken]

Predicative adjunct AP:

(108) a. Hij keek me (zo) aan, (namelijk) doodsbleek.
    he looked me (so) at, (viz.) deathly pale

b. Hij keek me [& P [AGOP1 [e] aan]
    &:: [AGOP2 [doodsbleek] aan]

Attributive AP:

(109) a. Ze heeft (zulke) druiven geplukt, (namelijk) witte.
    she has (such) grapes picked, (viz.) white ones

b. Ze heeft [& P [AGOP1 [e] druiven] geplukt]
    &:: [AGOP2 [witte druiven] geplukt]

Finally, consider the ‘simplex extraposable argument phrases’. These are prepositional, clausal and other heavy objects of V. As shown in (110), there can be a dummy argument. (For unknown reasons the specifying connection (en wel) can be overt only if the dummy is overtly present. This is different from the situation in (104)-(109).)

(110) a. **Complement clause of V:**
    Ze heeft (‘t) gezegd, gisteren, (en wel) dat ze komt.
    she has (it) said, yesterday, (namely) that she comes

b. **Heavy NP (i):**
    Hierbij doen we (‘t) u toekomen, (en wel) de onderscheiding voor
    hereby do we (it) you give, (namely) the reward for
    voorbeeldig gedrag.
    exemplary behaviour

c. **HNP(ii), free relative:**
    Ze heeft (‘t) vernield, (en wel) wat jij gemaakt hebt.
    she has (it) destroyed, (namely) what you made have

d. **PP complement of V:**
    Ze heeft (eraan) gedacht, gisteren, (en wel) aan Joops verjaardag.
    she has (thereof) thought, yesterday, (namely) of Joop’s birthday

According to Koster (1995b/1999b) constructions with (extraposed) complement clauses involve an empty element in the normal object position. This can be proved by using parasitic gaps (e.g. *Hij heeft [e1] zonder [e2] te merken beweerd dat het regende ‘he has without noticing asserted that it rained’).*8 A similar argument can be made for

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8 How parasitic gaps – here: [e2], a PRO – are licenced exactly is not relevant here. (N.B. There is an anti-c-command constraint on the two gaps.) Clearly, for its interpretation [e2] is dependent on [e1]. Notice that in this example it is not ‘that it rained’ that is not noticed, rather, the subject does not notice that he asserted that it rained.
the other heavy objects, e.g. *Ze heeft zonder te bekijken vernield wat jij gemaakt hebt* ‘she has without looking at destroyed what you have made’. I conclude that constructions with heavy objects licence a *pro* argument in the regular object position. The reason for that is subject to further research. What is relevant here, is that this explains why extraposition is possible. It is shown in (111) and (112) how these constructions could be analysed with specifying coordination. Crucially, the first conjunct would be ungrammatical if there were no *pro* argument.

(111) a. Hierbij doen we u [ÀP [ÀOP1 [DP pro] toekomen] &: [ÀOP2 [DP de onderscheiding... gedrag] toekomen].

At present I am not sure how to treat (extraposed) heavy non-DP objects of V. Nevertheless, an analysis along the lines of (112) seems feasible.


The position of **gisteren** ‘yesterday’ is tentative here. I conclude that the specifying coordination approach constitutes the overarching scheme of extraposition. It predicts which constructions can extrapose and which cannot. It also predicts that extraposed constructions of different types have properties in common (cf. section 5). Nevertheless there are some additional language-specific and construction-specific constraints, which require further study. I have touched on some these in the course of the argument, but I cannot discuss them any further here.

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39 For instance, the representation in (112b) shows an interesting problem: the primary conjunct contains a gap with categorial status PP; cf. the dummy in (110d). However, *pro* is arguably a DP. Perhaps there is an empty preposition, too.

40 See fn. 15 on multiple extraposition. Notice that the possibility of more than one remnant in a specifying conjunct must be excluded for argument-related phrases in order to maintain the effects of the mirror principle. It is unclear to me what causes this restriction and why it does not apply to normal conjunction. Furthermore, the mirror effect in extraposition can be disturbed by adverbial phrases. As yet it is unexplained why this is so.
8. Conclusion

This chapter discusses the syntactic nature of extraposition, in particular of relative clauses. I have shown at length that an analysis in terms of specifying coordination plus ellipsis is to be preferred over rightward movement, adjunction and stranding theories of extraposition. It is compatible with current theoretical assumptions and derives most empirical properties associated with extraposition straightforwardly.

The concept of specifying coordination (that has been introduced in the previous chapter) gains strength now it turns out to be central to the analysis of both apposition and extraposition. Furthermore, I have tentatively proposed a new theory on coordination that combines properties of the CoP and the behindance analysis. The three semantic main types of coordination are conjunction, disjunction and specification. This theory on coordination has been completed with general rules on ellipsis. Finally, and this is very relevant within the context of this book, it has become clear that the analysis of extraposition proposed is fully compatible with the promotion theory of relative clauses advocated for in the previous chapters.

Since the consequences of the theory proposed in this chapter are far-reaching, there are many issues that deserve further, detailed inquiries, e.g. differences between languages or multiple extraposition. As a start, the Appendix compares data of different construction types that allow for extraposition.
Appendix: example sentences

The examples are ordered according to the relevant sections in Chapter 7.

5.2.1. Extraposition from any constituent

(1) conjunct
a. Ik heb de man een boek gegeven en een CD. [DO]
I have the man a book given and a CD
b. Ik heb hem een boek gegeven en haar (ook). [IO]
I have him a book given and her (too)
c. Hij heeft de man een boek gegeven en zij (ook). [S]
he has the man a book given and she (too)
d. Ik heb over straat gelopen en in het park. [Adv]
I have on the street walked and in the park
e. Een boek heb ik hem gegeven en een CD. [TOP]
a book have I him given and a CD

(2) relative clause
a. Ik heb de man een boek gegeven dat hij graag wilde hebben. [DO]
I have the man a book given which he readily wanted to have
b. Ik heb iemand de prijs gegeven die het verdiende. [IO]
I have someone the price given who it deserved
c. Iemand heeft me een boek gegeven die ik niet ken. [S]
someone has me a book given who I not know
d. Ik heb op een plek gelopen waar jij ook bent geweest. [Adv]
I have on a spot walked where you also have been
e. Dat boek heb ik de man gegeven dat hij graag wilde hebben. [TOP]
that book have I the man given which he readily wanted to have

(3) result clause
a. Ik heb de man zoveel gegeven dat hij in verlegenheid werd gebracht. [DO]
I have the man so much given that he in embarassment was brought
b. Ik heb zoveel mensen een boek gegeven dat ik een lintje kreeg. [IO]
I have so many people a book given that I a decoration received
c. Zoveel mensen gaven me een boek, dat ik in verlegenheid werd gebracht. [S]
so many people gave me a book, that I in embarassment was brought
d. Ik heb op zoveel plaatsen gelopen dat ik niet meer weet waar precies. [Adv]
I have on so many places walked that I not anymore know where exactly
e. Zoveel boeken heb ik hem gegeven dat hij in verlegenheid werd gebracht. [TOP]
so many books have I him given that he in embarassment was brought

(4) apposition
a. Ik heb de man De aanslag gegeven, een boek van Mulisch. [DO]
I have the man De aanslag given, a book by Mulisch
b. Ik heb Joop een boek gegeven, onze baas. [IO]
I have Joop a book given, our boss
c. Joop heeft me een boek gegeven, onze baas. [S]
Joop has me a book given, our boss
d. Ik heb in Amsterdam gelopen, een mooie stad. [Adv]
I have in Amsterdam walked, a nice city
e. *De aanslag heb ik hem gegeven, een boek van Mulisch.*
   De aanslag have I him given, a book by Mulisch

(5) **comparative clause**
   a. Ik heb de man meer gegeven dan hij verwachtte.
      I have the man more given than he expected
   b. Ik heb *meer mensen* een boek gegeven dan men verwachtte.
      I have more people a book given than one expected
   c. *Meer mensen* hebben me een boek gegeven dan ik verwachtte.
      more people have me a book given than I expected
   d. Ik heb *op meer plaatsen* gelopen dan men verwachtte.
      I have on more places walked than one expected
   e. *Veel meer boeken* heb ik gekregen dan ik verwachtte.
      much more books have I received than I expected

(6) **PP complement of N**
   a. Ik heb de man *een boek gegeven met een rode kaft.*
      I have the man a book given with a red cover
   b. Ik heb *de man een boek gegeven met de rode hoed.*
      I have the man a book given with the red hat
   c. *Iemand heeft* me een boek gegeven met *een lange grijze baard.*
      someone has me a book given with a long grey beard
   d. Ik heb in *de tuin* gelopen met *die drie hoge coniferen.*
      I have in the garden walked with those three large conifers
   e. *Dat boek* heb ik de man *gegeven met die rode kaft.*
      that book have I the man given with that red cover

(7) **complement clause of N**
   a. Ik heb de vraag *gesteld of hij wilde komen.*
      I have the question asked if he wanted to come
   b. Ik heb de voorspelling *het voordeel van de twijfel gegeven dat het gaat regenen.*
      I have the prediction the benefit of the doubt given that it goes to rain
   c. *De vraag* werd *gesteld of hij wilde komen.*
      the question was asked if he wanted to come
   d. Ik heb aan *de voorspelling* getwijfeld *dat het gaat regenen.*
      I have to the prediction doubted that it goes to rain
   e. *Die vraag* kan ik *niet beantwoorden of het gaat regenen.*
      that question can I not answer if it goes to rain

(8) **PP complement of A**
   Hij is altijd *dol geweest op chocolade.*
   he has always fond been of chocolate

   Some of the [Adv] examples show extraposition from a DP *embedded* in an adverbia*
   position, strictly speaking – hence they belong to section 5.2.2, too.

**5.2.2. Extraposition from embedded positions**

(9) **extraposition from a PP**
   a. Ik heb [aan Joop] gedacht *en Piet.*
      I have of Joop thought and Piet
   b. Ik heb [aan de man] gedacht *die een rode jas droeg.*
      I have of the man thought who a red coat wore
c. Ik heb [aan zoveel] gedacht dat Joop versteld stond.  
   [result clause]
   I have of so much thought that Joop stunned was

d. Ik heb [aan Joop] gedacht, onze baas.
   [apposition]
   I have of Joop thought, our boss

e. Ik heb [aan meer] gedacht dan jij.
   [comparative clause]
   I have of more thought than you

f. Ik heb [aan de man] gedacht met de rode hoed.
   [PP complement of N]
   I have of the man thought with the red hat

g. Ik heb [aan het feit] gedacht dat een koe vier poten heeft.
   [compl. clause of N]
   I have of the fact thought that a cow four legs has

h. < n/a >  
   [PP complement of A]

(10) extraposition from a PP in a DP

a. Ik heb [de papieren van Joop] gecontroleerd en (van) Piet.  
   [conjunct]
   I have the papers of Joop checked and (of) Piet

b. Ik heb [de papieren van de man] gecontroleerd die een rode jas droeg.
   [RC]
   I have the papers of the man checked who a red coat wore

c. Ik heb [de papieren van zoveel mensen] gecontroleerd
   [result clause]
   dat ze niet meer te tellen waren.
   I have the papers of so many people checked that they not anymore to count were

d. Ik heb [de papieren van Joop] gecontroleerd, onze baas.
   [apposition]
   I have the papers of Joop checked, our boss

e. Ik heb [de papieren van meer mensen] gecontroleerd dan je kunt tellen.
   I have the papers of so many people checked than you can count  
   [comp. cl.]

f. Ik heb [de papieren van iedereen] gecontroleerd met een rode hoed.
   I have the papers of everybody checked with a red hat

[PP compl. of N]

g. Ik heb [de stellers van de vraag] geïdentificeerd of Kok al een opvolger heeft.
   I have the ‘posers’ of the question identified if Kok already a successor has
   [c. cl. of N]

h. < n/a >  
   [PP compl. of A]

5.2.3. Mirror effects

Most examples here need heavy stress, since they are extremely complicated. Not all (a)-examples are perfectly acceptable to everyone, but the contrast with the (b)-examples is quite clear.

(11) conjuncts

   you have him seen and her, and I (too)

b. * Jij hebt hem gezien en ik, en haar.

(12) relative clauses

a. Iemand heeft een kast gekocht die tweeduizend gulden kostte, die je wel kent.
   someone has a cupboard bought which two thousand guilders cost, who you for sure know

b. * Iemand heeft een kast gekocht die je wel kent, die tweeduizend gulden kostte.

(13) result clauses

a. Zoveel mensen hebben zoveel boeken gekocht dat ze ze niet meer konden tillen.
   so many people have so many books bought that they them not anymore could carry,  
   dat alle boekwinkels uitverkocht waren.
   that all bookstores out sold were

b. * Zoveel mensen hebben zoveel boeken gekocht dat alle boekwinkels uitverkocht waren, dat ze ze niet meer konden tillen.
(14) **appositions**  
   a. *Joop* heeft *De aanslag* gelezen, *een bekende roman, onze baas.*  
      Joop has *The Attack* read, a well-known novel, our boss  
   b. *Joop* heeft *De aanslag* gelezen, *een bekende roman.*  

(15) **comparative clauses**  
   a. *Meer mensen* hebben *meer boeken thuis dan ik bezit, dan ik verwachtte.*  
      more people have more books at home than I possess, than I expected  
   b. *Meer mensen* hebben *meer boeken thuis dan ik verwachtte, dan ik bezit.*  

(16) **PP complements of N**  
   a. *Iemand* heeft *een boek gekocht over taalkunde, met een lange grijze baard.*  
      someone has bought a book on linguistics, with a long grey beard  
   b. *Iemand* heeft *een boek gekocht met een lange grijze baard, over taalkunde.*  

(17) **complement clauses of N**  
   a. *De vraag* heeft *het feit verdoezeld dat Jan ziek is, waarheen we met vakantie willen.*  
      the question has the fact obscured that Jan ill is, where to we on vacation want  
   b. *De vraag* heeft *het feit verdoezeld waarheen we met vakantie willen, dat Jan ziek is.*  

(18) **PP complements of A:** < n/a >  

Mixed examples show exactly the same nesting symmetry:  

(19) **mixed example: comparative clause & PP complement of N**  
   a. *Meer jongens* hebben *de man gezien met de rode hoed, dan meisjes.*  
      more boys have the man seen with the red hat, than girls  
   b. *Meer jongens* hebben *de man gezien dan meisjes, met de rode hoed.*  

(20) **mixed example: result clause & relative clause**  
   a. *Zoveel mensen* hebben *de man gezien die een rode hoed droeg, dat het bewijs sluitend is.*  
      so many people have the man seen who a red coat wore, that the evidence complete is  
   b. *Zoveel mensen* hebben *de man gezien dat het bewijs sluitend is, die een rode hoed droeg.*  

5.2.4.5.2.4. **No preposing**  

(21) a. *En Piet, heb ik Jan *een* boek gegeven.*  
      [conjunct]  
      and Piet, have I Jan _ a book given  
   b. *Die een rode jas draagt, heb ik de man *een* boek gegeven.  
      [relative clause]  
      who a red coat wears, have I the man _ a book given  
   c. *Dat hij ze niet kon tillen, heb ik hem zoveel boeken *gegeven.*  
      [result clause]  
      that he them not could carry, have I him so many books _ given  
   d. *Onze baas, heb ik Joop *gezien.*  
      [apposition]  
      our boss, have I Joop _ seen  
   e. *Dan ik, heeft hij *meer boeken gekregen.*  
      [comparative clause]  
      than I, has he more books _ received

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1 However, some people accept (i):  
   (i) *Dan wie heeft hij *meer boeken gekregen?  
       [than who has he more books received]
f. *Met een hoed, heb ik de man _ een boek gegeven. \(2\)  
   with a hat, have I the man _ a book given

\(2\) Apparentely, preposed PP complements of N do exist in Dutch. However, they can only be interpreted adverbially; see Klein & Van den Toorn (1980), and also Cattell (1976) and Corver (1990): contra Koop & Wiers (1980) and e.g. Barbiers (1995). PPs and other material cannot be raised out of a DP in Dutch. If it appears so, nevertheless, the PP must be an adverbial PP (which is generated as an adjunct). This is shown by the minimal pair in (i/ii), where in (ii) an adverbial interpretation is highly unlikely (but not impossible given a special context).

\(i\) Van wie heb je een boek gelezen?  
   Of whom have you a book read?

\(ii\) * Van wie heb je een boek afgestoft?  
   Of whom have you a book dusted?

In (i) van wie can be generated as an adverbial PP, contrary, in (ii) it must have been raised from within DP (een boek), an illegal operation.

\(3\) Obviously, if Joop is taken to specify onze baas, instead of the reverse, the sentence is acceptable, but then the meaning is different in a subtle way.

\(4\) However, if the adjective is deverbal or if it is a pseudo-participle, this configuration is acceptable, e.g. Hij is van ons afhankelijk geweest [he has of us dependent been]. See also De Vries (1998b).
c. [Dat zoveel mensen die baan willen dat ze niet te tellen zijn] is gebleken. [res. cl.]
   that so many people that job want that they not to count are, has been found.

d. [Dat Joop die baan wil, onze chef] is duidelijk. [apposition]
   that Joop that job wants, our manager, is clear.

e. [Dat meer mensen die baan willen dan mogelijk is] is duidelijk. [comp. cl.]
   that more people that job want than possible is, is clear.

f. [Dat dat meisje die baan wil, met de rode jurk] is duidelijk. [PP compl. of N]
   that that girl that job wants, with the red dress, is clear.

g. [Dat het feit bekend is dat Joop die baan wil] is duidelijk. [compl. clause of N]
   that the fact known is that Joop that job wants, is clear.

h. [Dat Joop dol is op chocolade] is duidelijk. [PP complement of A]
   that Joop fond is of chocolate, is clear.

The same can be shown with simple argument and non-argument constructions.

(24) a. * [Dat Joop die baan wil] heeft je vader gezegd, en Piet. [conjunct]
   b. * [Dat het meisje die baan wil] is aangekondigd, dat op de hoek woont. [RC]
   c. * [Dat zoveel mensen die baan willen] is gebleken, dat ze niet te tellen zijn. [res. cl.]
   d. * [Dat Joop die baan wil] is duidelijk, onze chef. [apposition]
   e. * [Dat meer mensen die baan willen] is duidelijk, dan mogelijk is. [comp. cl.]
   f. * [Dat dat meisje die baan wil] is duidelijk, met de rode jurk. [PP compl. of N]
   g. * [Dat het feit bekend is] is duidelijk, dat Joop die baan wil. [compl. clause of N]
   h. * [Dat Joop dol is] is duidelijk, op chocolade. [PP complement of A]

(25) a. [Dat ze heeft gezegd dat ze zal komen] is verheugend. [compl. clause of V]
   that she has said that she will come, is joyful.

b. [Dat we u hierbij doen toekomen: de onderscheiding voor voorbeeldig gedrag] is verheugend. [HNP(i)]
   that we you hereby do give: the reward for exemplary behaviour, is joyful.

c. [Dat ze vernield wat jij gemaakt hebt] is betreurswaardig. [HNP(ii): FR]
   that she destroyed has what you made have, is regrettable.

d. [Dat ze niet heeft gedacht aan haar moeders verjaardag] is treurig. [PP object of V]
   that she not has thought of her mother’s birthday, is regrettable.

(26) a. * [Dat ze heeft gezegd dat ze zal komen] is verheugend, dat ze zal komen. [compl. clause of V]
   b. * [Dat we u hierbij doen toekomen de onderscheiding voor voorbeeldig gedrag] is verheugend. [HNP(ii)]
   c. * [Dat ze vernield heeft wat jij gemaakt hebt] is betreurswaardig. [HNP(ii): FR]
   d. * [Dat ze niet heeft gedacht] is treurig, aan haar moeders verjaardag. [PP object of V]

(27) a. [Dat ik ben wezen zwemmen gisterenmiddag] is fijn. [sentence adverb]
   that I have been swimming yesterday afternoon, is nice.

b. [Dat ik heb gezwommen in de Gaasperplas] is fijn. [adverbial PP]
   that I have swum in the Gaasperplas, is nice.

c. [Dat ik ben wezen zwemmen die dag] is fijn. [adverbial NP]
   that I have been swimming that day, is nice.

d. [Dat hij al vertrokken is omdat hij haast had] is betreurswaardig. [adv. clause]
   that he already left has because he hurried was, is regrettable.

e. [Dat hij me aankeek, doodsbloek] was beangstigend. [pred. adj. AP]
   that he me at looked, deathly pale, was scary.
f. [Dat ze druiven heeft geplukt, witte,) komt goed uit. that she grapes has picked, white (ones), is convenient  [attributive AP]

(28) a. * [Dat ik ben wezen zwemmen] is fijn, gisterenmiddag. [sentence adverb]
b. * [Dat ik heb gezwommen] is fijn, in de Gaasperplas. [adverbial PP]
c. * [Dat ik ben wezen zwemmen] is fijn, die dag. [adverbial NP]
d. * [Dat hij al vertrokken is] is betreurenswaardig, omdat hij haast had. [adv. clause]
e. * [Dat hij me aankeek] was beangstigend, doodbleek. [pred. adj. AP]
f. * [Dat ze druiven heeft geplukt] komt goed uit, witte. [attributive AP]

5.2.7. No stranding in the middlefield

(29) a. * Jan heb ik _ en Piet gezien. [conjunct]
    Jan have I _ and Piet seen
b. * De man heb ik _ die een rode jas draagt gezien. [relative clause]
    the man have I _ who a red coat wears seen
c. * Zoveel boeken heb ik hem _ dat hij ze niet kon tillen gegeven. [result clause]
    so many books have I him _ that he them not could carry given
    
d. * Joop heb ik, _ onze baas, gezien. [apposition]
    Joop have have I , _ our boss, seen

e. * Meer boeken heeft hij _ dan ik gekregen. [comparative clause]
    more books has he _ than I received
f. * De man heb ik _ met de hoed gezien
    the man have I _ with the hat seen
    
g. * De vraag heb ik _ of hij terugkeert gesteld.
    the question have I _ if he returns asked

h. Dol is hij altijd _ op chocolade geweest. [PP complement of A]
    fond has he always _ of chocolate been

Example (29h) is acceptable with a contrastive reading, cf. (21h) above.

5.2.8. Kaan’s generalization

VPs with extraposed material are inert, hence cannot be topicalized. Topicalization of the verb alone or of a larger constituent including the first part of a duplex construction is possible. The examples are contrastive. For instance, (31b) can be understood as: ‘it is seen, not beaten that I have the man, (yesterday,) who wears a red coat.’

(30) conjunct
a. Ik heb Joop gezien, en Piet.
    I have Joop seen, and Piet
b. * [Gezien] heb ik Joop en Piet _.


c. * [Gezien, en Piet] heb ik Joop _.

d. [Joop gezien en Piet] heb ik _.

(31) relative clause
a. Ik heb de man gezien die een rode jas draagt.
    I have the man seen who a red coat wears
b. * [gezien] heb ik de man (gisteren) die een rode jas draagt.

c. * [gezien die een rode jas draagt] heb ik de man.

d. [de man gezien die een rode jas draagt] heb ik.
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(32) result clause
a. Ik heb zoveel mensen gezien dat het me duizelt.
   I have so many people seen that it me gets dizzy
b. [Gezien] heb ik zoveel mensen (gisteren) dat het me duizelt.
c. * [Gezien dat het me duizelt] heb ik zoveel mensen.
d. [Zoveel mensen gezien dat het me duizelt] heb ik.

(33) apposition
a. Ik heb Joop gezien, onze baas.
   I have Joop seen, our boss
d. ? [Joop gezien, onze baas] heb ik.5

(34) comparative clause
a. Ik heb meer mensen gezien dan jij.
   I have more people seen than you
b. [Gezien] heb ik meer mensen (gisteren), dan jij.
d. [Meer mensen gezien dan jij] heb ik.

(35) PP complement of N
a. Ik heb de man gezien met de grijze baard.
   I have the man seen with the grey beard
b. [Gezien] heb ik de man (gisteren), met de grijze baard.
c. * [Gezien met de grijze baard] heb ik de man.
d. [De man gezien met de grijze baard] heb ik.

(36) complement clause of N
a. Ik heb de vraag gesteld of hij komt.
   I have the question asked if he comes
b. [Gesteld] heb ik de vraag (gisteren), of hij komt.
c. * [Gesteld of hij komt] heb ik de vraag.
d. [De vraag gesteld of hij komt] heb ik.

(37) PP complement of A
a. Hij is altijd dol gebleven op chocolade.
   he has always fond remained of chocolate
b. * [Gebleven] is hij altijd dol op chocolade.
c. * [Gebleven op chocolade] is hij altijd dol.
d. [Dol gebleven op chocolade] is hij altijd.

Notice that (37b) is impossible, too.

Normal heavy NPs also confirm to the pattern, but Kaan's generalization seems to be invalid for the other simplex extraposed argument phrases. However, if they are extraposed to the right of an adverb (gisteren 'yesterday'), the pattern reemerges; see the (d/e)-examples.

5 Concerning (33d), see (42) and onwards.
(38) complement clause of V
a. Ze heeft gezegd dat ze zal komen.
   she has said that she will come
b. [gezegd] heeft ze dat ze zal komen.
c. [Gezegd dat ze zal komen] heeft ze.
d. Ze heeft gezegd, gisteren, dat ze zal komen.
e. * [Gezegd, gisteren, dat ze zal komen] heeft ze.

(39) heavy NP(i)
a. Hierbij doen we u toekomen: de onderscheiding voor voorbeeldig gedrag.
   hereby do we you give: the award for exemplary behaviour
b. [Toekomen] doen we u hierbij: de onderscheiding voor voorbeeldig gedrag.
c. * [Toekomen: de onderscheiding voor voorbeeldig gedrag] doen we u hierbij.

(40) HNP(ii): free relative
a. Ze heeft vernield wat jij hebt gemaakt.
   she has destroyed what you have made
b. [Vernield] heeft ze wat jij hebt gemaakt.
c. [Vernield wat jij hebt gemaakt] heeft ze.
d. Ze heeft vernield, gisteren, wat jij hebt gemaakt.
e. * [vernield, gisteren, wat jij hebt gemaakt] heeft ze.

(41) PP object of V
a. Ze heeft niet gedacht aan haar moeders verjaardag.
   she has not thought of her mother’s birthday
b. [Gedacht] heeft ze niet aan haar moeders verjaardag.
c. [Gedacht aan haar moeders verjaardag] heeft ze niet.
d. Ze heeft niet gedacht, gisteren, aan haar moeders verjaardag.
e. * [Gedacht, gisteren, aan haar moeders verjaardag] heeft ze niet.

Simplex extraposited non-argument phrases behave similar to duplex constructions, although the judgements are less clear. Therefore the (e/f)-examples serve to illustrate the contrast with topicalization of phrases without extraposited material. The (d)-examples are not perfect, because the appositive meaning of the phrase in italics is more or less in contradiction with the meaning of the topic position; hence the problem is semantic, not syntactic.

(42) sentence adverb
a. Ik wil het cadeau kopen, morgen.
   I want the present to buy, tomorrow
b. [kopen] wil ik het cadeau, morgen.
c. * [Kopen, morgen] wil ik het cadeau.
d. ? [Het cadeau kopen, morgen] wil ik.
e. Ik wil morgen het cadeau kopen.

(43) adverbial PP
a. Ik heb mijn rijbewijs niet gekregen, die dag.
   I have my driver’s licence not received, that day
b. [Gekregen] heb ik mijn rijbewijs niet, die dag.
c. * [Gekregen, die dag] heb ik mijn rijbewijs niet.
d. ? [Mijn rijbewijs gekregen, die dag] heb ik niet.
e. Ik heb die dag mijn rijbewijs niet gekregen.
f. [Die dag mijn rijbewijs gekregen] heb ik niet.

(44) adverbial NP
   a. Ik heb die man gezien, op school.
      I have that man seen, at school
   b. [Gezien] heb ik die man, op school.
   d. ? [Die man gezien, op school] heb ik.
   e. Ik heb die man op school gezien.

(45) adverbial clause
   a. Deze verstandige jongen zal het koopje laten schieten, omdat zijn geld op is.
      this sensible guy will the bargain let go, because his money gone is
   b. [Laten schieten] zal deze verstandige jongen het koopje, omdat zijn geld op is.
   c. * [Laten schieten, omdat zijn geld op is] zal deze verstandige jongen het koopje.
   d. ? [Het koopje laten schieten, omdat zijn geld op is] zal deze verstandige jongen.
   e. Deze verstandige jongen zal het koopje omdat zijn geld op is laten schieten.
   f. [Het koopje omdat zijn geld op is laten schieten] zal deze verstandige jongen.

(46) predicative adjunct AP
   a. Hij heeft het monster aangekeken, bevend van angst.
      he has the monster at looked, trembling with fear
   b. [Aangekeken] heeft hij het monster, bevend van angst.
   d. ? [Het monster aangekeken, bevend van angst] heeft hij.
   e. Hij heeft het monster bevend van angst aangekeken.
   f. [Het monster bevend van angst aangekeken] heeft hij.

(47) attributive AP
   a. Ze heeft druiven geplukt, witte.
      she has grapes picked, white (ones)
   d. ? [Druiven geplukt, witte] heeft ze.
   e. Ze heeft witte druiven geplukt.
   f. [Witte druiven geplukt] heeft ze.

If there is not an object, the difference between the VP-level and a larger constituent below IP is undetectable. Therefore topicalization patterns with the (d)-examples above, the most favourable option of the two.

(48) a. Ik heb gezwommen, gisteren.
      I have swum, yesterday
   [sentence adverb]

(49) a. Ik heb gefietst, in de bergen.
      I have cycled, in the mountains
   [adverbial PP]
5.2.9. *Islandhood of extraposed material*

Duplex constructions are islands for extraction, whether they are extraposed (51) or not (50). The non-extraposed configuration in (50) resembles the ones for ‘preposing’ and ‘stranding in the middlefield’, which is also impossible, cf. (21) and (29). Most of the facts in (50) can be recognized as instances of the Complex Noun Phrase Constraint and the Coordinate Structure Constraint. However, after extraction, as in (51), this is not so obvious.

(50) a. *Wie heb je Piet en _ gezien?* \[conjunct\]
    who have you Piet and _ seen
b. *Wat heb je de man die _ draagt gezien?* \[relative clause\]
    what have you the man who _ wears seen
c. *Wat heb je zoveel soep dat je _ deed gegeten?* \[result clause\]
    what have you so much soup that you _ did eaten
d. *Wat heb je Joop, onze _, gezien?* \[apposition\]
    what have you Joop, our _, seen
e. *Wie heeft hij _ meer boeken dan _ gekregen?* \[comparative clause\]
    who has he more books than _ received
f. *Wat heb je _ een boek over _ afgestoft?* \[PP complement of N\]
    what have you a book on _ dusted
g. *Wat heb je _ de vraag gesteld of hij _ deed?* \[complement clause of N\]
    what have you the question if he _ did asked
h. *Waar is hij altijd _ dol op _ geweest?* \[PP complement of A\]
    what has he always fond of _ been

(51) a. *Wie heb je Piet gezien en _?* \[conjunct\]
    who have you Piet and _ seen
b. *Wat heb je de man gezien die _ draagt?* \[relative clause\]
    what have you the man who _ wears seen
c. *Wat heb je zoveel soep gegeten dat je _ deed?* \[result clause\]
    what have you so much soup that you _ did eaten
d. *Wat heb je Joop gezien, onze _?* \[apposition\]
    what have you Joop, our _?, seen
e. *Wie heeft hij _ meer boeken gekregen dan _?* \[comparative clause\]
    who has he more books than _ received
f. *Waard heb je _ een boek afgestoft over _?* \[PP complement of N\]
    what have you a book dusted over _?
g. *Wat heb je _ de vraag gesteld of hij _ deed.* \[complement clause of N\]
    what have you the question if he _ did asked
h. *Waar is hij altijd _ dol geweest op _?* \[PP complement of A\]
    what has he always fond of _ been

Notice the difference between (50h) and (51h), which can be reproduced with a deverbal adjective:

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6 Nevertheless, Across-The-Board extraction from conjuncts is possible, cf. (i):

(i) *Wat heeft Piet _ gekocht en Joop _ verkocht?* \[what has Piet bought and Joop sold\]

7 As noted before, some people accept preposing the entire second part with a question:

(i) *Dan wie heeft hij _ meer boeken _ gekregen?*

8 See below.

9 Preposing the entire second part by means of a question is also possible:

(i) *Waarop is hij altijd _ dol _ geweest?* \[what.on has he always fond _ been\]

This is not extraction, but preposing like (21h).
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(52) a. *Waar is hij altijd afhankelijk van _ geweest?^{10}
   where has he always dependent of _ been
b. *Waar is hij altijd afhankelijk geweest van _?

PPs show the same pattern, whether they are selected (a) or adverbial (b/c/c'):

(53) a. *Waar heb je aan _ gedacht?
   what have you of _ thought
b. *Waar heb je in _ gespeeld?
   where have you in _ played
c. *Waar heb je een boek over _ gelezen?
   what have you a book about _ read
c.' *Waar heb je de man mee _ gezien?
   what have you the man with _ seen

(54) a. *Waar heb je gedacht aan _?
   [PP object of V]
b. *Waar heb je gespeeld in _?
   [adverbial PP]
c. *Waar heb je een boek gelezen over _?
   what have you a book about _ read
c.' *Waar heb je de man gezien mee _?

Notice that the PPs in (53c/c') and (54c/c') must be interpreted adverbially, hence they are not complements of N, contrary to appearances; cf. footnote 2.^{11}

Contrary to (54a), extraction from complement clauses is possible, but preferably not if they are extraposed further to the right. The judgements are not very clear.^{12}

(55) a. *Wie heb je gezegd dat ik moest opbellen _?
   [compl. clause of V]
b. ?? Wie heb je gezegd, gisteren, dat ik moest opbellen _?
   who have you said, yesterday, that I should call _

The other simplex constructions are opaque, anyway.

(56) a. *Van wat heb je mij de medaille ter preventie _ doen toekomen?
   of what have you me the medal for prevention _ do give
b. *Wat heb je wie _ wilde geholpen?
   what have you who _ wanted helped
c. *Van wat heb je die dag _ gezwommen?
   of what have you that day _ swam
d. *Wie heb je omdat hij _ sloeg aangeklaagd?
   who have you because he _ beat sued
   [adverbial clause]
e. *Als wat heeft Joop je bleek _ aangekeken?
   as what has Joop you pale _ at looked
   [predicative adjunct AP]

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^{10} In Dutch, only an 'R-pronoun' can escape from a PP. Examples like (i) or (ii) are impossible.
   (i) *Wie is hij altijd dol op _ geweest? [who has he always fond of _ been]
   (ii) *Wie is hij altijd afhankelijk van _ geweest? [who has he always independent of _ been]

^{11} The following dialogue is impossible: "Ik heb een man met een rode jas gezien." "Pardon, ik heb je
   niet verstaan. Waar heb je een man mee gezien?" ["I have seen a man with a red coat." "Sorry, I
   didn't hear you, what did you see a man with?"] Here an adverbial interpretation is excluded. Hence
   the PP is a complement of N, and extraction is impossible, as in (50f).

^{12} Perhaps this is (partly?) caused by a structural ambiguity: if the adverb is interpreted in the
   subordinate clause, there is only a bounding problem; if it is interpreted in the main clause, there
   should be a freezing effect.
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f. * Als wat heb je druiven, blauw __ geplukt?
   as what have you grapes, blue __ picked [attributive AP]
   <n/a> [sentence adverb]

5.2.10. Optionality

All instances of extraposition are optional. Nevertheless, there is a preference to extrapose clauses and other large phrases. The ‘obligatory extraposition’ of complement clauses of V is not true extraposition, but probably just indicates the base position (cf. Zwart 1997; Koster 1999a, etc.), from which true optional extraposition can take place, cf. (65). The same may be the case for PP complements of V (see e.g. Barbiers 1995).

(57) conjunct
   a. Ik heb Joop en Jos gezien.
      I have Joop and Jos seen
   b. Ik heb Joop gezien en Jos.

(58) relative clause
   a. Ik heb de man die een rode hoed op had gezien.
      I have the man who a red hat on had seen
   b. Ik heb de man gezien die een rode hoed op had.

(59) result clause
   a. Zo hard dat iedereen schrok heeft ze nog nooit gelachen.
      so hard that everybody was scared has she yet never laughed
   b. Ze heeft nog nooit zo hard gelachen dat iedereen schrok.
      she has yet never so hard laughed that everybody was scared
   a.' Te veel om te bespreken heeft hij nog nooit ingeleverd.
      too much to discuss has he yet never handed
   b.' Hij heeft nog nooit te veel ingeleverd om te bespreken.

(60) apposition
   a. Ik heb Joop, de directeur, ontmoet.
      I have Joop, the manager, met
   b. Ik heb Joop ontmoet, de directeur.

(61) comparative clause
   a. Ik heb meer dan jij gegeten.
      I have more than you eaten
   b. Ik heb meer gegeten dan jij.

(62) PP complement of N
   a. Ik heb de man met de rode hoed gezien.
      I have the man with the red hat seen
   b. Ik heb de man gezien met de rode hoed.

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13 In general, there is a strong preference to extrapose result clauses. However, especially if the whole construction is topicalized, the non-extraposed order is acceptable.
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(63) complement clause of $N$
   a. Ik heb de vraag of hij komt niet durven stellen.
      I have the question if he comes not dare to pose
   b. Ik heb de vraag niet durven stellen of hij komt.

(64) PP complement of $A$
   a. Hij is altijd dol op chocolade geweest.
      he has always fond of chocolate been
   b. Hij is altijd dol geweest op chocolade.

(65) complement clause of $V^{14}$
   a. * Ze heeft dat ze een nieuwe baan wil gezegd, gisteren.
      she has that she a new job wants said, yesterday
   b. Ze heeft gezegd dat ze een nieuwe baan wil, gisteren.
   c. Ze heeft gezegd, gisteren, dat ze een nieuwe baan wil.

(66) heavy NP(i)
   a. Hierbij doen we u de onderscheiding voor voorbeeldig gedrag toekomen.
      hereby do you the reward for exemplary behaviour give
   b. Hierbij doen we u toekomen: de onderscheiding voor voorbeeldig gedrag.

(67) HNP(ii): free relatives
   a. Ze heeft wat jij gemaakt hebt vernield,
      she has what you made have destroyed
   b. Ze heeft vernield wat jij gemaakt hebt.

(68) PP object of $V$
   a. Ze heeft aan haar moeders verjaardag gedacht,
      she has of her mother’s birthday thought
   b. Ze heeft gedacht aan haar moeders verjaardag.

(69) sentence adverb
   a. Ik ben gisterenmiddag wezen zwemmen.
      I have yesterday afternoon been swimming
   b. Ik ben wezen zwemmen, gisterenmiddag.

(70) adverbial PP
   a. Ik heb in de Gaasperplas gezomen.
      I have in the Gaasperplas swum
   b. Ik heb gezwommen, in de Gaasperplas.
   a.’ Ik heb de man met een verrekijker bespied.
      I have the man with binoculars spied on
   b.’ Ik heb de man bespied, met een verrekijker.

(71) adverbial NP
   a. Ik ben die dag wezen zwemmen.
      I have that day been swimming
   b. Ik ben wezen zwemmen, die dag.

14 If the complement clause is quotative or factive, it can be preverbal (cf. Barbiers 1998):
   (i) Joop zal dat hij gelogen heeft nooit toegeven.  [Joop will that he lied has never admit]
(72) **adverbial clause**
   a. Hij is *omdat* hij haast *had* al vertrokken.  
      he has because he in a hurry was already left
   b. Hij is al vertrokken, *omdat* hij haast *had*.

(73) **predicative adjunct AP**
   a. Hij keek me doodsbly aan.  
      he looked me deathly pale at
   b. Hij keek me aan, *doodsbly*.

(74) **attributive AP**
   a. Ze heeft *witte* druiven geplukt.  
   b. Ze heeft druiven geplukt, *witte*.

5.2.11. **Binding at the base**

The fact that subjects take scope over objects, and indirect objects over direct objects (S > IO > DO) in combination with variable binding by quantifiers (Q) and binding Principle C effects (C) can be used to show that extraposed phrases behave as if they are at the 'original' position. In particular, this is relevant for duplex constructions with a clause, and for complement clauses of V.

(75) **relative clause**
   a. Ik heb iedereen, *het verhaal dat hij wilde horen* verteld.  
      I have everybody the story that he wanted to hear told
   a'. Ik heb iedereen, *het verhaal verteld dat hij wilde horen*.  
   b. *Ik heb de persoon die het, wilde horen [elk verhaal], verteld.*  
      I have the person who it wanted to hear every story told
   b'. *Ik heb de persoon [elk verhaal], verteld die het, wilde horen.*  
   c. [Elke man], *is het huis waar hij, woonde binnengegaan.*  
      every man has the house where he lived entered
   c'. [Elke man], *is het huis binnengegaan waar hij, woonde.*  
   d. *De man die er, woonde is [elk huis], binnengegaan.*  
      the man who there lived has every house entered
   d'. *De man is [elk huis], binnengegaan die er, woonde.*  

(76) a. Ik heb *de verpleegster die Joops vrouw natrok hemzelf; aanbevolen.*  
      I have the nurse who Joop's wife investigated himself recommended
   a'. Ik heb *de verpleegster hemzelf; aanbevolen die Joops vrouw natrok.*  
   b. *Ik heb hem; een vrouw die Joop, niet kende aanbevolen.*  
      I have him a woman who Joop not knew recommended
   b'. *Ik heb hem; een vrouw aanbevolen die Joop, niet kende.*  
   c. *Iemand die Joop, vertrouwde heeft hem, hulp geboden.*  
      someone who Joop trusted has him help offered
   c'. *Iemand heeft hem; hulp geboden die Joop, vertrouwde.*  
   d. *Hij; heeft de vrouw die Joop, vertrouwde hulp geboden.*  
      he has the woman who Joop trusted help offered
   d'. *Hij; heeft de vrouw geholpen die Joop, vertrouwde.*  

(77) **result clause**
   a. Ik heb iedereen, *zoveel dat hij, er gek van werd verteld.*  
      I have everyone so much that he there crazy of became told
   a'. Ik heb iedereen, *zoveel verteld dat hij, er gek van werd.*  

*Q :: i o  >  d o*  
*Q :: d o  <  i o  !*  
*C :: s  >  i o*  
*C :: i o  <  s  !*  
*C :: i o  >  d o*
b. * Ik heb zoveel mensen dat het, afgestompt raakte [elk verhaal], verteld. [Q: do < io !]
   I have so many people that it dulled every story told
b. * Ik heb zoveel mensen [elk verhaal], verteld dat het, afgestompt raakte.
c. [Elke man], heeft zoveel CD's dat hij, failliet raakte gekocht. [Q: s > do]
   every man has so many CDs that he bankrupt became bought
c. [Elke man], heeft zoveel CD's gekocht dat hij, failliet raakte.
d. * Zoveel mensen dat ze het, beschadigden zijn [elk huis], binnengegaan. [Q: do < s !]
   so many people that they it damaged have every house entered
d. * Zoveel mensen zijn [elk huis], binnengegaan dat ze het, beschadigden.

(78) a. Ik heb zoveel mensen dat Joop, verlegen werd hemzelf aanbevolen. [C: io > do]
   I have so many people that Joop shy became himself recommended
a. * Ik heb iedereen, meer dan hij, wilde horen verteld. [Q: io > do]
   I have everybody more than he wanted to hear told
a. * Ik heb iedereen, meer verteld dan hij, wilde horen.
   I have more people than he wanted to hear every story told
b. * Ik heb meer mensen dan het, wilden horen [elk verhaal], verteld. [Q: do < io !]
   I have more people than it wanted to hear every story told
b. * Ik heb meer mensen [elk verhaal], verteld dan het, wilden horen.
c. [Elke man], heeft meer CD's dan hij, zich kon veroorloven gekocht. [Q: s > do]
   every man has more CDs than he could afford bought
c. [Elke man], heeft meer CD's gekocht dan hij, zich kon veroorloven.
d. * Meer mensen dan er, woonden zijn [elk huis], binnengegaan. [Q: do < s !]
   more people than there lived have every house entered
d. * Meer mensen zijn [elk huis], binnengegaan dan er, woonden.

(79) comparative clause
a. Ik heb iedereen, meer dan hij, wilde horen verteld. [Q: io > do]
   I have everybody more than he wanted to hear told
a. * Ik heb iedereen, meer verteld dan hij, wilde horen.
   I have more people than he wanted to hear every story told
b. * Ik heb meer mensen dan het, wilden horen [elk verhaal], verteld. [Q: do < io !]
   I have more people than it wanted to hear every story told
b. * Ik heb meer mensen [elk verhaal], verteld dan het, wilden horen.
c. [Elke man], heeft meer CD's dan hij, zich kon veroorloven gekocht. [Q: s > do]
   every man has more CDs than he could afford bought
c. [Elke man], heeft meer CD's gekocht dan hij, zich kon veroorloven.
d. * Meer mensen dan er, woonden zijn [elk huis], binnengegaan. [Q: do < s !]
   more people than there lived have every house entered
d. * Meer mensen zijn [elk huis], binnengegaan dan er, woonden.

(80) a. Ik heb meer mensen dan Joop, verwachtte hemzelf, aanbevolen. [C: io > do]
   I have more people than Joop expected himself recommended
a. * Ik heb meer mensen hemzelf, aanbevolen dan Joop, verwachtte.
   I have him more candidates than Joop expected recommended
b. * Ik heb hem, meer kandidaten dan Joop, verwachtte aanbevolen. [C: do < io !]
   I have him more candidates than Joop expected recommended
b. * Ik heb hem, meer kandidaten aanbevolen dan Joop, verwachtte.
c. Meer mensen dan Joop, verwachtte hebben hem, hulp geboden. [C: s > io]
   he has more people than Joop expected have him help offered
c. Meer mensen hebben hem, hulp geboden dan Joop, verwachtte.
d. * Hij, heeft meer mensen dan Joop, verwachtte hulp geboden. [C: io < s !]
   he has more people than Joop expected help offered
d. * Hij, heeft meer mensen geholpen dan Joop, verwachtte.
EXAMPLE SENTENCES

(81) complement clause of N
a. Ik heb iedereen, de vraag of hij, wilde vertrekken voorgelegd. [Q: io > do]
   I have everybody the question if he wanted to leave presented
a'. Ik heb iedereen, de vraag voorgelegd of hij, wilde vertrekken.
b. [n/a]
c. [Elke gek], heeft de vraag waar hij, woonde gesteld.
   every nut has the question where he lived asked
   [Q: s > io]
c'. [Elke gek], heeft de vraag gesteld waar hij, woonde.
d. * Het verzoek of hij, kon komen heeft [iedereen], verbaasd.
   the request if he could come has everybody surprised
   [Q: io < s !]
d'. * Het verzoek heeft [iedereen], verbaasd of hij, kon komen.

(82) a. <n/a>
b. * Ik heb hem, de vraag of Joop, kwam gesteld.
   I have him the question if Joop came asked
   [C: do < io !]
b'. * Ik heb hem, de vraag gesteld of Joop, kwam.
c. Het verzoek of Joop, kon komen heeft hem, hoofdbrekens bezorgd.
   the request if Joop could come has him ‘mind-bending’ given
   [C: s > io]
c'. Het verzoek heeft hem, hoofdbrekens bezorgd of Joop, kon komen.
d. * Hij, heeft het verzoek of Joop, kwam overwogen.
   he has the request if Joop came considered
   [C: do < s !]
d'. * Hij, heeft het verzoek overwogen of Joop, kwam.

(83) complement clause of V
a. Ik heb Joop, iedereen, gezegd dat hij, weg moest gaan.
   I have Joop/everybody told that he away should go
   [C/Q: io > do]
a'. Ik heb Joop, iedereen, gezegd, gisteren, dat hij, weg moest gaan.
b. * Ik heb hem, gezegd dat Joop, iedereen, weg moest gaan.
   I have him told that Joop/everybody away should go
   [C/Q: do < io !]
b'. * Ik heb hem, gezegd, gisteren, dat Joop, iedereen, weg moest gaan.
c. Joop, iedereen, heeft me gezegd dat hij, weg moest gaan.
   Joop/everybody has me told that he away should go
   [C/Q: s > do]
c'. Joop, iedereen, heeft me gezegd, gisteren, dat hij, weg moest gaan.
d. * Hij, heeft me gezegd dat Joop, iedereen, weg moest gaan.
   he has me told that Joop/everybody away should go
   [C/Q: do < s !]
d'. * Hij, heeft me gezegd, gisteren, dat Joop, iedereen, weg moest gaan.

5.2.12. Split antecedent
In severely restricted contexts, extrapoosed relatives may have more than one antecedent in Dutch. It is called type A multiple relativization in Ch2§7.6. Most duplex constructions show a similar pattern.

(84) a. [Ik heb een vrouw gezien] en [jij hebt een man bespied],
   [relative clause]
   [I have a woman seen] and [you have a man spied on]
die beide een rode jas droegen.
   who both a red coat wore
b. [Joop is zo klein] en [Piet is zo groot],
   [result clause]
   [Joop is so small] and [Piet is so tall]
dat ze elkaar niet in de ogen kunnen kijken.
   that they each other not in the eyes can look
c. [Ik heb Joop gezien] en [jij hebt Piet bespied], onze twee bazen.
   [apposition]
   [I have Joop seen] and [you have Piet spied on], our two bosses
5.2.13. Question formation

Question formation can be divided into three kinds: i) topicalization of the whole construction, ii) topicalization of the first part only and stranding the second in the middle field (which is unacceptable), and iii) extraposition from a topic.

(85) conjunct
a. * Welke man en welke vrouw heb je uitgenodigd?
   which man and which woman have you invited
b. Welke man heb je en welke vrouw uitgenodigd?
   which man have you and which woman invited

c. * Welke vrouw heb je uitgenodigd, en welke man?
   which woman have you invited, and which man?

(86) relative clause
a. Hoeveel mensen die weggingen heb je gezien?
   how many people who left have you seen
b. * Hoeveel mensen heb je die weggingen gezien?
   how many people have you who left seen

c. Hoeveel mensen heb je gezien die weggingen?
   how many people have you seen who left

(87) result clause
a. * Hoeveel zulke domme mensen dat ze niet gaan stemmen heb je geteld?
   how many so stupid people that they not go voting have you counted
b. Hoeveel zulke domme mensen heb je dat ze niet gaan stemmen geteld?
   how many such stupid people have you that they not go voting counted

c. ? Hoeveel zulke domme mensen heb je geteld dat ze niet gaan stemmen?
   how many such stupid people have you counted that they not go voting

(88) apposition
<n/a>

(89) comparative clause
a. Hoeveel langer dan Piet heb je hem geschat?
   how much taller than Piet have you him estimated
b. * Hoeveel langer heb je hem dan Piet geschat?
   how much longer have you him than Piet estimated

c. Hoeveel langer heb je hem geschat dan Piet?
   how much longer have you him than Piet estimated

(90) PP complement of N
a. Hoeveel mannen met een hoed heb je geturfd?
   how many men with a hat have you tallied
b. * Hoeveel mannen heb je met een hoed geturfd?
   how many men have you with a hat tallied

c. Hoeveel mannen heb je geturfd met een hoed?
   how many men have you tallied with a hat
(91) complement clause of *N
a. Wiens verzoek of hij geld kreeg heb je gehonoreerd?
   whose request if he money became have you honoured
b. *Wiens verzoek heb je of hij geld kreeg gehonoreerd?
c. Wiens verzoek heb je gehonoreerd of hij geld kreeg?

(92) PP complement of A
<n/a>

Simplex constructions can be questioned with preservation of categorial status, except clauses. This has nothing to do with extraposition.

(93) a.  <n/a>  [complement clause of *V]
b. Wiens verzoek om overplaatsing naar een betere positie [Heavy NP(i)]
   whose request for replacement to a better position
   heeft u gehonoreerd?
   have you honoured
c.  <n/a>  [HNP(ii): free relative]
d.  Aan wie heb je gedacht?  [PP object of V]

(94) a.  Wanneer heb je gevoetbald?
   when have you played soccer
b.  Waarin heb je gezommen?
   Where in have you swum
c.  Welke dag ben je wezen zemmen?
   which day have you been swimming
d.  <n/a>  [adverbial clause]
e.  Hoe bleek keek hij je aan?
   how pale looked he you at
f.  Welke kleur druiven heeft ze geplukt?
   which colour grapes has she picked

[attributive AP]