Chapter 5

Result Clauses

part II

A Conjunction Analysis

5.1 Introduction

In the preceding chapter several earlier analyses of result clause constructions like (1) have been presented.

(1) a. Zoveel mensen kwamen op het feest dat de kamer te klein was
    `So many people came to the party that the room was too small'

    b. Janna heeft [zoveel boeken] gelezen [dat ze niet op één plank zouden kunnen staan]
    Janna has so-many books read that they not on one shelf
    would can stand
    `Janna read so many books that they would not fit on one shelf'

    c. Ik heb zo hard gerend dat ik een uur buiten adem was
    `I ran so hard that I was out of breath for an hour'

We saw that result clause constructions exhibit the following properties. First, result clauses usually occur at the end of the (smallest) clause in which the associated degree phrase occurs. Second, the degree phrase can occupy a position in almost any constituent in that clause, and (third) be deeply embedded in the constituent at issue. Fourth, however, result clauses cannot be separated from their associated degree phrase by non-complement CP boundaries. Fifth, result clause constructions allow multiple antecedents. That is to say, one result clause can be associated with more than one degree head. These antecedents need not be part of a single clause.
These properties will be addressed in a little more detail in the next section. Along with the presentation of the result clause examples, I will show that there are a number of other constructions that exhibit similar properties. These constructions are noun phrase (DP) plus relative clause combinations, comparative constructions and noun phrase coordinations.

The striking similarities in behaviour among the four constructions provide one of the arguments for the structural analysis of result clauses to be presented in this chapter. The observation that noun phrase coordination, comparatives, noun phrase plus relative clause and result clause constructions behave alike suggests that they involve the same structural configuration (viz. a conjunction phrase), despite the fact that the latter two are usually considered to be instances of subordination, rather than coordination.¹

5.1.1 A sketch of the structural configuration

The idea that coordination and subordination are structurally alike has been suggested by several authors in the past few years (cf. Goldsmith 1985, Munn 1992, Johannessen 1993, Wilder 1994, Kayne 1994, etc.). Specifically, these authors argue that coordination does not involve a symmetric structure, but an asymmetric one like any X-bar structure:²,³

(2) \[ [ ZP & [YP]] \]

I will follow their suggestion that coordination is asymmetric, much like subordination, and assume that both types of conjunction make use of the same structural configuration. Hence, two coordinated noun phrases and a noun phrase plus relative clause will involve the same structure (cf. Koster 1996), on a par with the configuration underlying result clause constructions.

¹ I will use the term *conjunction* as overarching both coordinating and subordinating constructions, and *not* as synonymous to coordination.

² Munn’s (1992) analysis is different. He proposes that the conjoining head and the second conjunct form a Boolean Phrase (BP), which is right-joined to the first conjunct.

³ The idea that the coordinator *and* is a head that forms a constituent with the clause (or phrase) it introduces dates back to Ross (1967, p.90). He does not assume *and* projects, but has it introduced by the projection rule in (i) and subsequently adjoined to each of the clauses in the structure.

(i) \[ S \rightarrow \text{ and } S^{\prime} \quad \text{where } n \geq 2 \]

or

(i) \[ S \rightarrow \text{ or } S^{\prime} \quad \text{where } n \geq 2 \]
A CONJUNCTION ANALYSIS OF RESULT CLAUSES

In the preceding chapter I presented several earlier analyses of result clauses, and concluded that result clauses are not generated inside the degree phrase. The analysis to be defended here is one in which result clauses are base-generated in clause-final position.

The structure underlying my conjunction analysis is the following:

(3) ConjP
    [...[\textit{conjP}]...]
    ConjP
    Conjo\textsuperscript{\textdegree} [\textit{dat}...]

In this structure the constituent in the specifier position of the conjunction phrase will vary across examples (e.g. it may be AgrOP, or TP etc.). I assume that the conjunction phrase is transparent, in the sense that it behaves as if it were the constituent in its specifier position (see the analysis in section 5.3 below):

(4) a Hij heeft zo\textit{veel boeken gelezen dat} ze niet op één plank zouden passen\textsuperscript{4} 
    he has so\textit{many books read that} they not on one shelf would fit

b \texttt{[conjP [...[zo\textit{veel boeken] gelezen}] : [res.cl dat... ]]}

The colon as head of the conjunction phrase is adopted from Koster's (1996) work on relative clause extraposition as a form of parallel construal akin to asyndetic coordination. The four constructions to be discussed in the next section differ in the choice of the conjoining head. I will adopt Koster's colon for relative and result clause constructions. Coordination will have the coordinator \textit{en `and'} as conjoining head, and comparatives \textit{dan `than'}.

Up till now, we have mainly been concerned with the structural aspects of the analysis. However, the result clause needs to be licensed as well.

\textsuperscript{4} See chapter 3 of this thesis on the internal structure of degree phrases, and why zo `so' is combined with veel `much/many' in almost all examples.
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5.1.2 Licensing relations

In chapter 4 I rejected an extraposition analysis in which the result clause is generated within its antecedent degree phrase (and then moved to sentence-final position). Although such an analysis is arguably incorrect, it does have the advantage of providing a structural relation that reflects the dependency of the subclause with respect to the degree head.

Within a conjunction phrase analysis, there are two aspects to a proposal of how the result clause is licensed.⁵

First, as was observed at the end of the previous section, the conjoining head varies across the constructions we are looking at. That is, a comparative combines with the conjoining head than, whereas a degree phrase headed by so occurs with a lexically empty head:

(5) [...] faster... [ than [...] ]
    [...] so fast... [ : [ that ... ] ]

This means that the degree phrase and the relevant conjoining head has to be matched. This is the first requirement for the licensing proposal.

Second, in the various constructions at issue the second conjunct is of a different nature. For example, a result clause that is dependent on so or on a comparative is a finite clause, whereas a clause that is dependent on too is non-finite:

(6) a Janna heeft zo hard gelopen [ dat ze niet meer rustig kan ademhalen ]
    Janna has so fast walked that she not more calmly can breath-take
    `Janna ran so fast that she cannot breath calmly anymore'

b * Janna heeft zo hard gelopen [ om nog rustig adem te kunnen halen ]
    Janna has so fast walked to still calmly breath to can take
    `*Janna ran so fast to be able to breath calmly anymore'⁶

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⁵ In the coming sections I focus on the similarities between coordination, comparison, relative clause and result clause constructions. This is not meant to imply that I ignore their differences. Some of these differences are presumably connected to the way in which the second conjunct in each construction is related to the phrase (in the first conjunct) that it depends on. In some of the properties of the four constructions (to be discussed in this chapter) these differences are expressed.

In this thesis I confine myself mainly to the analysis as it pertains to degree phrases.

⁶ The intended meaning is not that Janna ran fast so that she could breath calmly.
I propose that the head of the conjunction phrase functions as an intermediary in matching the type of the degree phrase and the second conjunct. That is, since the second conjunct is the complement of the conjoining head, the head selects the type of clause that matches with the type of degree phrase. Matching the degree phrase and the subclause in the second conjunct is the second requirement for the licensing proposal.

Given these two requirements on licensing a conjunction phrase, I propose the following analysis.

In chapter 3 I adopted Zwarts' (1992) analysis of degree phrases, in which heads like too or so are operators that Theta-bind a variable in the Theta-grid of their complement. Previous theories on result clauses (cf. chapter 4) assume that so undergoes Quantifier Raising at LF (cf. Guéron & May 1984, Rouveret 1978) The authors assume that so raises to the first dominating CP node (or in some cases to the top of the matrix CP node). From its derived position it licenses the result clause that depends on it.

In the conjunction phrase analysis proposed here, however, the domain of licensing appears to be the conjunction phrase itself. This may amount to a (matrix) CP domain, but may also involve just a part of a clause. For instance, when a conjunction phrase as a whole is topicalized, the result clause can be licensed within the topicalized constituent, because the sentence is grammatical (cf. section 5.4):

(8) [\text{ quelque boeken geschreven dat ze niet op deze plank zouden passen}] heeft ze niet

However, extracting the phrase containing the degree head from the specifier of the conjunction phrase creates a configuration in which the degree head cannot license the result clause within the conjunction phrase. As predicted when the domain of licensing is taken to be ConjP, this yields an ungrammatical example (cf. section 5.9):
To capture these observations and the two requirements noted above, I propose that the degree phrase (including the operator) raises and adjoins to the top node of the constituent in the specifier position of ConjP. As a result of this, the whole specifier constituent is marked, so to speak, by the degree phrase.

Note that it is not unknown for a constituent to be marked by a particular element contained in it. In WH-movement, a WH-word may pied-pipe a larger constituent along (cf. (11)). Similarly, in comparatives, the degree operator can be contained in the object noun phrase, whereas the actual comparison concerns a larger part of the clause than just that object (cf. (12)):

(11) [De vader [van [welke vrouw]]] heb je gezien?


Once the specifier of the conjunction phrase is marked by the degree operator, the degree operator and the head of the conjunction can be matched under specifier-head agreement. The head of the conjunction phrase takes care of selecting the appropriate type of complement: a non-finite clause if the degree head is too, a finite clause if the degree head is so etc.

Thus, movement of the degree phrase to adjoin to the specifier constituent of the conjunction phrase ensures that the degree head and the conjoining head can be matched and, indirectly, ensures that the degree head and the dependent clause can be matched.
Note that, for the degree phrase to be able to adjoin to the constituent in [Spec,ConjP], say XP, it must be dominated by XP. That is, the degree phrase that invokes the conjunction phrase structure, must be contained in the specifier conjunct. In the forthcoming sections we will see that the constituent in the specifier position can be a CP, but a lower projection as well. In fact, the only two restrictions seem to be that: (1) the degree phrase (or the noun phrase that a relative clause is associated with, for that matter) must be part of the specifier constituent and (2) it must occur in a position from which it can move up to adjoin to the specifier constituent.

Before turning to the details of the properties that result clause constructions, relative clause constructions, coordination and comparatives have in common, let us look at how the analysis put forth in the previous and the present subsection is motivated.

5.1.3 Motivation

The analysis proposed in this chapter is motivated both empirically and conceptually.

In what follows, I will discuss several properties of result clause constructions and show that they behave similarly to noun phrase plus relative clause constructions, noun phrase coordination and comparatives. After presenting each property, I show how the proposal above accounts for it. Additional empirical motivation comes from negative polarity items that can be licensed from outside of their own clause (cf. chapter 6).

Conceptual motivation for the analysis is related to the similarities in behavior of coordination, comparison, relative clause and result clause constructions. Since constructions of a coordinative nature (viz. DP-coordination and comparatives) appear to behave similarly to constructions of a subordinative nature (viz. relative and result clauses) with respect to several phenomena that can be accounted for structurally, the simplest assumption one can make is that they do in fact involve the same structural configuration. However, there are several criteria by which coordinating and subordinating conjunctions are supposedly distinguished. None of these criteria applies without exceptions. For example, asymmetric coordination (like [John and me] went to the market or He is [a Republican and proud of it]) seems to exemplify an intermediary form, in between `pure' (symmetric) coordination and `pure' (asymmetric) subordination. Such
intermediary instances of conjunction (in which the structure is asymmetric, but no subordination is involved) are unexpected if there is indeed a sharp distinction between coordination and subordination. In contrast, if there is a continuum from constructions that are symmetric in every respect (e.g. a book and a pencil) to constructions that are asymmetric to the extent that one conjunct is entirely subordinate to the other, these intermediary forms have a rightful place along the line. This provides additional motivation for an analysis in which noun phrase coordination and degree phrase - result clause constructions share the same structural configuration, even though they may behave a little different within that structure.\footnote{This was also proposed by Munn (1987, 1992), as in the following quotation: "Suppose now that a coordinating conjunction and [a] subordinating conjunction differ semantically but have identical syntactic configurations." (Munn 1992, p.18).}

Other conceptual motivation comes from the following consideration. Looking at result clause constructions, we may view them as causatives, in the sense that the effect expressed by the result clause is caused by something that is indicated in the main clause. Interestingly, Song (1996, pp. 35-49) provides examples of causative constructions that make use of a conjunction. In addition, Español-Echevarría (1995) proposed to view purpose clauses as complements of a preposition \textit{CAUSE}. This analysis can also be analysed as an instance of a conjunction phrase, if we consider this \textit{CAUSE} to be an abstract conjoining head. Español-Echevarría provides the initial structure in (13b) for (13a):

\begin{itemize}
  \item[(13)]
    \begin{enumerate}
      \item[(a)] John put the books on the shelf to please his mother
      \item[(b)] $[vp1 \text{John} \_ [pp \_ [vp2 \text{the books put on the shelf}] [\text{CAUSE} [\text{[to please his mother]]}]\_]$ \end{enumerate}
\end{itemize}

These analyses of causatives constructions as involving conjunction support the conjunction analysis of result clauses proposed here.

A final conceptual argument for the conjunction phrase analysis is that the structural configuration is strictly binary branching.

Additional evidence for the structural configuration of the conjunction analysis proposed in this chapter is provided by Frisian result clauses. They are shown to behave exactly as predicted by the conjunction analysis with respect to main clause properties like verb second (cf. chapter 6): result clauses that exhibit such main clause features as verb second word order will be shown to be conjoined
with the matrix clause. Their being conjoined with the matrix clause apparently allows them to behave like a main clause themselves. Given that two coordinated main clauses have the same structure (cf. (2) above), it is not too surprising under a conjunction analysis that a result clause may have main clause features. If result clauses were right-adjoined to the matrix clause (as in older analyses), however, their main clause status in Frisian would be extremely weird. In short, Frisian result clauses provide empirical motivation for the structure in (2)/(3), because all predictions about whether or not they can have verb second are neatly borne out. Moreover, they also provide conceptual motivation by arguing against a right-adjunction analysis of result clauses.

5.1.4 Summary

In short, I propose to analyse result clauses as the second conjunct in a conjunction phrase. The degree phrase with which a result clause is associated is part of the specifier constituent of the conjunction phrase:

\[
\text{(14) ConjP} \\
\text{[...[degree zo AP]...]} \quad \text{Conjp} \\
\text{Conj}^0 \quad [\text{dat}...]
\]

The degree phrase covertly moves up and adjoins to the specifier of the conjunction, thereby marking the specifier such that the match between degree head and conjoining head can be checked in specifier-head agreement. The head of the conjunction phrase functions as an intermediary in matching the degree head and the dependent clause.

The next section will present an overview of the result clause properties that will be discussed in more detail in sections 5.3 to 5.11. The presentation of each property is followed by a discussion of how the proposed conjunction phrase analysis accounts for it.
5.2 Overview of properties to be discussed

The properties discussed in the coming sections are the following:

1. clause-final occurrence of result clauses, relative clauses and second conjuncts (in noun phrase coordination and comparatives);
2. a clause-final result clause, relative clause or second conjunct can be associated with an antecedent (degree phrase or noun phrase) in several constituents of a clause;
3. the antecedent degree phrase or noun phrase can be deeply embedded in the constituent it is part of;
4. result clauses, relative clauses, and to a lesser extent noun phrase coordination and comparison, allow multiple antecedents;
5. the antecedent degree phrase or noun phrase cannot be separated from the associated clause or second conjunct by a CP node that is not a complement CP;
6. in sentences with more than one result clause, relative clause, coordination or comparative construction, the dependencies are nested. For instance, a relative clause associated with a direct object noun phrase will precede a relative clause that is associated with a subject noun phrase;
7. if the four constructions at issue occur in the middle-field (which is only marginally possible with result clauses), it is ungrammatical to topicalize the (constituent containing the) antecedent noun phrase or degree phrase when the second conjunct or subclause is not part of the topicalized material;
8. clause-final result clauses, relative clauses and second conjuncts cannot be topicalized if the antecedent is not topicalized as well;
9. result clauses, relative clauses and second conjuncts in noun phrase coordination and comparatives are islands for extraction.

These properties will be discussed and analyzed in the next sections.

5.3 Clause-final occurrence

Result clauses usually appear in sentence-final position. Despite their dependency on a degree item within the clause, they cannot readily appear close to that item.\(^8\)

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\(^8\) The result clause's dependency on the degree head has lead some authors to analyses in which the result clause is generated as sister to the degree element (cf. chapter 4 of this thesis). Their sentence-final position was supposed to be the result of extraposition. See chapter 4 for arguments against this type
(15) a ?? Ik heb [zoveel boeken dat ze niet op één plank zouden kunnen staan] gelezen
   *I have so-many books that they not on one shelf would can stand read

   b  Ik heb [zoveel boeken] gelezen [dat ze niet op één plank zouden kunnen staan]
   *I have so-many books read that they not on one shelf would can stand
   `I read so many books that they would not fit on one shelf'

In their sentence-final position, result clauses follow `sentence-final' adverbs, e.g. *gisteren `yesterday' in (16):

(16)  Ik heb zo hard gerend gisteren dat ik een uur buiten adem was
   *I have so fast run yesterday that I an hour out-of breath
   was
   `I ran so hard yesterday that I was out of breath for an hour'

They also follow complement clauses, cf. *dat ze ziek was `that she was ill' in (17):

(17)  Hij zei zo zacht dat ze ziek was dat niemand hem hoorde
   *he said so softly that she ill was that nobody him heard
   `He said so softly that she was ill that nobody heard him'

In addition, result clauses follow relative clauses that are associated with (for instance) the sentence subject (cf. Gueron & May 1984):

(18)  a  Everybody is so strange [whom I like] [that I can't go out in public with them]
   b  * Everybody is so strange [that I can't go out in public with them] [whom I like]

In (19) the Dutch translations of (18) are given:

(19) a  Iedereen is zo vreemd [die ik ken] [dat ik niet met ze in het openbaar wil verschijnen]
   *everyone is so strange that I know that I not with them in
In section 5.9 I will show that in all four constructions it is not possible to prepose the antecedent when the whole structure occurs in the middle-field.

Even though the (19a) example is not very good, it is clearly better than the ungrammatical (19b).

With respect to occurrence in the middle field, relative clauses and second conjuncts in noun phrase coordination and comparatives differ from result clauses; they can perfectly well occur both in the middle field and in sentence-final position:

(20)  a Die man heeft **films en documentaires** gemaakt
     that man has movies and documentaries made
     `That man made movies and documentaries'
  a' Die man heeft **films** gemaakt **en documentaires**
     that man has movies made and documentaries

  b Die mannen hebben **de foto's die verloren gingen** gemaakt
     those men have the fotos that lost went made
     `Those men made the pictures that got lost'
  b' Die mannen hebben **de foto's** gemaakt **die verloren gingen**
     those men have the fotos made that lost went

  c Die man heeft **meer films dan documentaires** gemaakt
     that man has more movies than documentaries made
     `That man made more movies than documentaries'
  c' Die man heeft **meer films** gemaakt **dan documentaires**
     that man has more movies made than documentaries

  d ?* De bioscopen hadden **zoveel kaartjes dat de regisseur tevreden was** verkocht
     the cinemas had so-many tickets that the director satisfied was sold
  d' De bioscopen hadden **zoveel kaartjes** verkocht **dat de regisseur tevreden was**
     the cinemas had so-many movies sold that the director satisfied was
     `The cinemas sold so many tickets that the director was satisfied'
In comparing result clause constructions with relative clauses, noun phrase coordination and comparatives, I will mainly look at their sentence-final occurrences.

ANALYSIS

In the first section of this chapter I introduced the conjunction phrase:

(21) ConjP
    
    \[\text{...[\text{degp} zo AP]...]} \text{ ConjP} \text{ Conj}^0 \text{ [dat...] \}

This conjunction phrase, with a different label, has been proposed for coordination by (among others) Johannessen (1993). The current section (i.e. this subsection and the next ones) shows that result clause constructions and noun phrase coordination (and relative clause constructions and comparatives) behave alike with respect to a number of properties. Therefore, it is desirable to assign result clause constructions the same structural configuration as coordination; this is the first hypothesis of the conjunction phrase analysis of result clauses.

Looking more directly at the content of this subsection, we saw that all four constructions under consideration can be split up: in coordination the two conjuncts can appear adjacent, as in (22a), or the second part can appear sentence-finally, as in (22b):

(22)  a Die man heeft \textbf{films en documentaires} gemaakt
       \textit{that man has movies and documentaries made}
       `That man made movies and documentaries`

    b Die man heeft \textbf{films} gemaakt \textbf{en documentaires}
       \textit{that man has movies made and documentaries}

The structure for the (22a) example is straightforward: the conjunction phrase as a whole occupies [spec,AgrOP]. For the (22b) example, I will follow Koster’s (1996) work on relative clauses and hypothesize that what occupies the specifier position of the conjunction phrase is AgrOP (recall that the conjoining head is \textit{en `and’}). Koster assumes that the second conjunct is a full phrase (AgrOP in this case), in
which only a part is spelled out lexically. That is to say, the rest of the phrase is deleted under identity with the AgrOP in the first conjunct:

(23) a  Die man heeft [\[^{\text{agrop}}_{\text{conj}}\] films [en [\[^{\text{agrop}}_{\text{conj}}\] documentaires]]] gemaakt
      that man has movies and documentaries made

b  Die man heeft [\[^{\text{agrop}}_{\text{conj}}\] films gemaakt [en [\[^{\text{agrop}}_{\text{conj}}\] documentaires]]]
      that man has movies made and documentaries

b’ .....  \[
\begin{array}{c}
| \quad \text{ConJP} \\
| \quad \text{AgrOP} \\
| \quad \text{ConJP} \\
| \quad \text{films gemaakt} \\
| \quad \text{Conj}^{0} \\
| \quad \text{AgrOP} \\
| \quad \text{en} \\
| \quad \text{[documentaires \_ \_]} \\
\end{array}\]

Analogously, in a result clause construction in which the degree head is contained in the object constituent, the result clause will be conjoined with AgrOP (cf. the next subsection as well). Note however, that for subclauses no construal under parallelism is needed. In other words, the clause by itself is the second conjunct:

(24)  De bioscopen hadden [\[^{\text{agrop}}_{\text{conj}}\] zooveel kaartjes verkocht [: [\[^{\text{dat}}\] de regisseur tevreden was]]]
      the cinemas had so-many movies sold
      that the director satisfied was
      `The cinemas sold so many tickets that the director was satisfied'

As far as the overall structure of the clause is concerned, I assume that the conjunction phrase is transparent, in that it behaves exactly like its specifier. Johannessen (1993) was one of the authors who proposed to analyse coordination as involving a X-bar structure like the conjunction phrase above.\(^{11}\) She argues on the basis of asymmetric coordination examples (like (25a) below), that the conjunction phrase as a whole inherits the features from its specifier constituent. This is indicated by the coindexing in (25c), which I will mostly leave out:

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\(^{10}\) The result clause can also be conjoined with a structurally higher phrase. We will see in chapter 6 on Frisian result clauses that it is possible for a result clause to be conjoined with the matrix clause, even if the degree phrase occurs in a structurally low constituent.

\(^{11}\) Johannessen (1993) coined it Coordination Phrase (CoP).
A CONJUNCTION ANALYSIS OF RESULT CLAUSES

(25) a He says he saw [John and I] last night
    (Quirk et al. 1985, p.338)
b [conjp John [and [ I ]]]
c [conjp[xp] XP [and [ YP ]]]

This is an extremely important aspect of the analysis, since it is the specifier which is mostly influenced by the structural environment of the conjunction phrase. In result clause constructions, then, the specifier constituent of the conjunction phrase (e.g. AgrOP) determines the structural status of the conjunction phrase as a whole.

In the next section we will see that the antecedent degree phrase headed by *zo `so' can be contained in almost any constituent of the matrix clause. In general, the higher (in a structural sense) the constituent containing the degree phrase occurs, the larger the constituent in the specifier of the conjunction phrase will be. Although this may seem ad hoc at this point, the structures will be extensively motivated in the coming sections.

5.4 Distribution of the antecedent

Even though the result clause appears sentence-finally most of the time, it can be associated with an antecedent degree phrase that may occur in several constituents of a clause:

(26) a Zoveel mensen waren gekomen dat de kamer te klein was
    *so-many people were come that the room too small was
    `So many people came that the room was too small'
    (subject)
b Ze aten zoveel kaas dat ze misselijk werden
    *they ate so-much cheese that they sick got
    `They ate so much cheese that they got sick'
    (direct object)
c Hij heeft zoveel mensen een boek gegeven dat hij blut is
    *he has so-many people a book given that he broke is
    `He gave a book to so many people that he's broke'
    (indirect object)
CHAPTER 5

The degree head picks out a subset: out of all the ways one can put away medication, choose one out of the subset of those ways that have the result that children can not reach the medication.

\[ 12 \]

**d**  Hij is zo lang dat hij over iedereen heen kijkt
\[ he is so tall that he over everybody PRT looks \]
`He is so tall he can look over everybody'

*(predicative degree phrase)*

**e**  Hij is zo'n bullebak dat iedereen hem uit de weg gaat
\[ he is so-a bully that everyone him out the way goes \]
`He is such a bully that everyone stays out of his way'

*(predicative noun phrase)*

**f**  De deur is zo fel rood dat 't m'n ogen zeer doet
\[ the door is so bright red that it my eyes hurt does \]
`The door is so brightly red that it makes my eyes hurt'

*(adverbial modifying predicative degree phrase)*

**g**  Janna loopt zo snel dat niemand haar kan bijhouden
\[ Janna walks so fast that noone her can up-keep \]
`Janna walks so fast that noone can keep up with her'

*(adverbial degree phrase)*

**h**  Oude port wordt in zo veel huizen gedronken dat het niet meer exclusief te noemen is
\[ old port is in so-man y houses drunk that it not more exclusive to call is \]
`Old port is drunk in so many households that you can't call it exclusive anymore'

*(in adverbial PP)*

Zo `so' can also occur as an adverbial in itself with a meaning like `in such a way', as in (27) below:\[ 12 \]

\[ (27) \]  Je moet medicijnen zo opbergen dat peuters er niet bij kunnen
\[ you must medicines so put-away that toddlers there not at can \]
`Medication must be put away such that toddlers can't reach it'

*(as adverbial)*

Looking at sentence-final relative clauses and second conjuncts in coordination and comparatives, they can be associated with an antecedent in almost any constituent in a clause as well. I will provide some examples below, but leave it to the reader to construct a full paradigm.

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\[ 12 \] The degree head picks out a subset: out of all the ways one can put away medication, choose one out of the subset of those ways that have the result that children can not reach the medication.
(28) ANTECEDENT IN SUBJECT POSITION

a. Mannen bewonderen deze film en vrouwen
   men admire this movie and women

b. DIE mannen bewonderen deze film die zich er in herkennen
   those men admire this movie that REFL there in recognize
   `Those men admire this movie who recognize themselves in it'

c. Meer mannen bewonderen deze film dan vrouwen
   more men admire this movie than women

d. Zoveel mensen bewonderen deze film dat de regisseur zich gevleid voelt
   so-many people admire this movie that the director REFL flattered feels
   `So many people admire this movie that the director feels flattered'

Moreover, just like in result clause constructions, a second coordinate, a relative clause and comparative phrase/clause can be associated with an object DP:

(29) ANTECEDENT IN OBJECT POSITION

a. Die man heeft films gemaakt en documentaires
   that man has movies made and documentaries
   `That man made movies and documentaries'

b. Die mannen hebben de foto’s gemaakt die verloren gingen
   those men have the fotos made that lost went
   `Those men made the pictures that got lost'

c. Die man heeft meer films gemaakt dan documentaires
   that man has more movies made than documentaries
   `That man made more movies than documentaries'

d. De bioscopen hadden zoveel kaartjes verkocht dat de regisseur tevreden was
   the cinemas had so-many movies sold that the director satisfied was
   `The cinemas sold so many tickets that the director was satisfied'

Examples in which the antecedent is an adverb are given below (note that the relative clauses are restricted to those examples in which the antecedent is a determiner phrase):
The differences between result clauses that are alternatively construed at a higher or at a lower level of the matrix clause are noted by Zwarts (1978) as well. Zwarts pointed out that the difference in coreference between the pronouns (ib) and (iib) is related to the position of the result clause:

(i) a Karel ambieerde zo'n goede betrekking dat hij voor altijd rijk zou zijn
   `Karel aimed at such a good relationship that he would always be rich'

(b) Janna heeft *snel* gelopen *en elegant*
   `Janna has fast walked and elegantly'

(b') Janna heeft *sneller* gelopen *dan elegant*
   `Janna has faster walked than elegantly'

(b") Janna heeft *eoeder snel* gelopen *dan elegant*
   `Janna walked fast, rather than elegantly'

(c) Janna heeft *zo* snel gelopen *dat niemand haar kon bijhouden*
   `Janna walked so fast that no one could keep up with her'  

In sum, we saw that the degree phrase associated with a result clause can have many functions and positions in a clause. I also indicated that the same holds for noun phrase antecedents of sentence-final relative clauses, for the second conjunct in noun phrase coordination and in comparatives.

Now let us consider the analysis of result clauses with respect to the distribution of the antecedent.

ANALYSIS

In the analysis proposed here, a result clause is conjoined with part of the matrix clause, or with the matrix clause in its entirety. The position of *zo* `so' in a particular constituent in the matrix clause will in part determine the structural configuration of the construction. That is to say, an antecedent in a structurally high position (e.g. the subject) can give rise to a structure that differs from that of a clause with an antecedent in a structurally lower position (e.g. the object).

For instance, when the antecedent of a result clause is (part of) the subject noun phrase, the entire matrix clause, or at least AgrSP, will be in the specifier position of the conjunction phrase. However, when the antecedent of a result clause is the object noun phrase, it may be that the specifier of the conjunction phrase consists of only the AgrOP (cf. (31)): 

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13 The differences between result clauses that are alternatively construed at a higher or at a lower level of the matrix clause are noted by Zwarts (1978) as well. Zwarts pointed out that the difference in coreference between the pronouns (ib) and (iib) is related to the position of the result clause:

(i) a Karel ambieerde zo'n goede betrekking dat hij voor altijd rijk zou zijn
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Karel aspired such a good position that he for always rich would be

\[ \text{Karel aspired to a position that is so good that he would be rich for ever} \]

b * \[ \text{Hij ambieerde zo'n goede betrekking dat Karel voor altijd rijk zou zijn} \]

(ii) a \[ \text{Karel aspired such a much-demanding position that he his marriage has must break} \]

\[ \text{`Karel aspired to a position that turned out to be so demanding that he had to break up his marriage'} \]

(ii) a \[ \text{Hij ambieerde zo'n veleisende betrekking dat Karel zijn huwelijk heeft moeten verbreken} \]

Zwarts proposes that the result clause in (ib) is a daughter of VP, whereas the result clause in (iib) is a daughter of S-bar (CP).
As such, topicalization of part of the clause plus the result clause provides a test for the position of the result clause. In addition, the grammaticality of topicalizing the material in AgrOP plus the result clause in (33) above shows that they form a constituent together. This provides support for the conjunction phrase analysis proposed here.

Another example in which a result clause can be conjoined with a part of the matrix clause is one in which the antecedent is a predicative degree phrase:

(35)  a  Die jongen is zo mager dat hij wel achter een rietje kan schuilen
       that boy is so skinny that he PRT behind a reed can shelter
       `That boy is so skinny that he could hide behind a reed'

       b  [zo mager dat hij wel achter een rietje kan schuilen] is die jongen
       so skinny that he PRT behind a reed can shelter is that boy

As we will see in chapter 6, result clause constructions in Frisian clearly show their structural position by allowing Verb-second when they are conjoined with a matrix clause and not allowing it when they are conjoined with part of the matrix clause or with a subclause.

The next subsection shows that, in addition to its distributional freedom across various positions in a sentence (subject, object, etc.), zo `so' may even be deeply embedded in the constituent it is part of.

5.5 Embedded antecedents

In this section I look at the degree of embedding that an antecedent degree phrase allows without yielding an uninterpretable example. We will see that zo `so' can
This subsection will only consider embedding in phrasal categories. Section 5.7 will look at examples in which the antecedent degree phrase is embedded in a subclause and separated from the result clause by a CP-boundary.

(36) a [Plannen [van [zoveel samenzweerders]]] zijn ontdekt dat de regering hulpeloos lijkt
plans of so-many conspirators are discovered that the government helpless seems
`Plans of so many conspirators have been discovered that the government seems to be helpless’

b [De notulen [van [vergaderingen [van [zoveel samenzweerders]]]]] zijn ontdekt dat men eindelijk kan reconstrueren wie de leider is
the minutes of meetings of so-many conspirators are discovered that they finally can reconstruct who the leader is
`Minutes of meetings of so many conspirators have been discovered that they can finally reconstruct who the leader is’

The same degree of embedding is available to the antecedent of relative clauses and, to some extent, comparative and coordinative constructions. Consider the next examples of prepositional complements as first associates:

(37) a Zij heeft [met Janna] gepraat en Pietje
she has with Janna talked and Pietje

b Zij heeft [met de man] gepraat die alles wist
she has with the man talked that all knew

c Zij heeft [met meer katten] gespeeld dan honden
she has with more cats played than dogs

d Zij heeft [met zoveel mensen] gepraat dat iedereen haar kent
she has with so-many people talked that everyone her knows

The following set of sentences exemplifies that embedding in an adverbial PP is also possible:

(38) a Oude port wordt [in hotels] geschonken en (in) café’s
old porto is in hotels poured and in pubs
`Old port is served in hotels and (in) pubs’

b Oude port wordt [in dat hotel] geschonken dat aan het meer staat

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14 This subsection will only consider embedding in phrasal categories. Section 5.7 will look at examples in which the antecedent degree phrase is embedded in a subclause and separated from the result clause by a CP-boundary.
old porto is in that hotel poured that at the lake stands
`Old port is served in that hotel at the lake side'
c Oude port wordt [in meer hotels] geschenken dan café's
old porto is in more hotels poured than pubs
`Old port is served in more hotels than pubs'
d Oude port wordt [in zoveel hotels] geschenken dat het niet meer exclusief te noemen is
old porto is in so-many hotels poured that it not more exclusive to call is
`Old port is served in so many households that you can't call it exclusive anymore'

The antecedent degree phrase of a result clause, however, can be more deeply embedded than the examples of the other constructions above have shown so far:

\[(39) \text{[De ouders [van zoveel kinderen]] zijn alleen dat complete gezinnen zeldzaam zijn} \]
\[\text{the parents of so-many children are alone that complete families rare are} \]
\[\text{`Parents of so many children are single that complete families are rare'}\]

In English, the possibility of deeply embedding so contrasts with the observation that sentence-final relative clauses can not be associated with an embedded noun phrase, as (40) shows (cf. Guéron & May 1984, Kayne 1994):

\[(40) \text{a * [Plots [by many conspirators]] have been hatched who work for the government} \]
\[\text{b [Plots [by so many conspirators]] have been hatched that the government is helpless} \]

Interestingly, this contrast is absent in Dutch (cf. Kaan 1992):

\[(41) \text{a [Plannen van veel samenzweerders]] zijn ontdekt die voor de regering werken} \]
\[\text{plans of many conspirators are discovered that for the government work} \]
\[\text{b [Plannen van zoveel samenzweerders]] zijn ontdekt dat de regering hulpeloos is} \]
\[\text{plans of so-many conspirators are discovered that government helpless is} \]
As such, the antecedent of a relative clause in Dutch can be as deeply embedded as *zoveel kinderen* `so many children' in (39).

Now let us look at the same degree of embedding in noun phrase coordination and comparative cases. Examples like the following appear too complicated to process:\(^{15}\)

\[(42) \begin{array}{l} a \ ? \ Er \ zijn \ [\text{vergaderingen \ [van \ [meer \ onschuldige \ samenzweerders]]}] \\ \text{afgeluisterd \ [dan \ (van) \ coupe-plegers]} \\ \text{there are meetings of more innocent/harmless conspirators bugged than} \\ \text{of coup-committers} \\ \text{`Meetings of more harmless conspirators are bugged than (of) people who commit coups'} \\ b ?? \ Er \ zijn \ [\text{vergaderingen \ [van \ [onschuldige \ samenzweerders]]}] \\ \text{afgeluisterd \ [en \ coupe-plegers]} \\ \text{there are meetings of innocent/harmless conspirators bugged and coup-committers} \\ \text{`Meetings of harmless conspirators are bugged and (of) people committing coups'} \end{array}\]

One of the reasons (42a,b) are slightly more difficult to interpret is that some kind of reconstruction is needed to get the reading that not the people who commit coups are bugged, but their meetings. That is to say, the noun phrase in the sentence-final second conjunct needs to identify with a noun phrase in the sentence, and, syntactically, it could be either \([a_p, \text{the meetings}]\) or \([a_p, \text{the harmless conspirators}]\).\(^{16}\)

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\(^{15}\) Note that the example in (42) does not have the same meaning as the more accessible example in (i):

\[(i) \begin{array}{l} ? \ Er \ zijn \ [\text{vergaderingen \ [van \ [meer \ onschuldige \ samenzweerders]]}] \\ \text{afgeluisterd \ [dan \ van \ coupe-plegers]} \\ \text{there are more meetings of innocent/harmless conspirators bugged than} \\ \text{of coup-committers} \\ \text{`More meetings of harmless conspirators are bugged than (meetings of) people who commit coups'} \end{array}\]

In (42) it is the number of harmless conspirators and `coup committers' that is compared, in (i) it is the number of meetings that is compared.

\(^{16}\) This is one of the differences between DP-coordination and comparatives on the one hand, and relative clauses and result clauses on the other hand. I will assume that differences like this arise from different licensing mechanisms for each construction, within the structural configuration that they share.
Moreover, it should be borne in mind that one of the factors that influences the ease in providing the correct interpretation is the degree to which the conjuncts are marked off from the rest of the clause.

In result clause cases, and to a lesser extent in comparatives, the degree phrase is clearly marked, and hence signals the construction that will follow, so to speak. Especially the degree head zo ‘so’ is often stressed, marking the relevant constituents even more clearly.\footnote{17}

In relative clauses, linking is facilitated by the circumstance that the relative pronoun introducing the relative clause (at least in Dutch) has the same phi-features as the noun it refers back to:

\begin{align*}
\text{(43) a} & \hspace{1em} \text{de moeder die...} \hspace{1em} \text{‘the mother} & \text{non-neuter that}\text{non-neuter} \\
\text{b} & \hspace{1em} \text{het kind dat...} \hspace{1em} \text{‘the child} & \text{neuter that}\text{neuter}
\end{align*}

However, there is no sign of any kind on the noun phrase to indicate that any associated relative clause is to follow later on. One factor that contributes to the ease of linking a relative clause to the associated noun phrase is the intonation pattern of an utterance.

In a coordination example like (42b) above, no explicit marking whatsoever is available to make it easier to link the second conjunct to the first. In emphatic coordination, however, both coordinates are introduced by lexical items that usually bear significant stress. That is, the associates are clearly marked and linking is facilitated, even though the examples with deeply embedded conjuncts are still not perfect: \footnote{18}

\begin{itemize}
\item[\footnote{17}] Some result clause constructions can be ‘translated’ into a combination of two main clauses (emphatic stress is indicated by capital letters):
\begin{align*}
\text{(i) a} & \hspace{1em} \text{Ik ben zo moe dat ik niet meer op m'n benen kan staan} \\
& \hspace{1em} I \text{am so tired that I not more on my legs can stand} \\
& \hspace{1em} ‘I'm so tired that my legs cannot keep me upright anymore’ \\
\text{b} & \hspace{1em} \text{Ik ben ZO moe; ik kan niet meer op m'n BENEN staan!} \\
& \hspace{1em} I \text{am so tired I can not more on my legs stand}
\end{align*}

In the latter example, extra stress on zo ‘so’ and exceptional stress in the final part of the second clause indicate the connection between degree of being tired and the effect of not being able to stand anymore. The next examples shows that the degree head can also be left out, provided the adjective moe ‘tired’ is stressed:
\begin{align*}
\text{(ii) } & \hspace{1em} \text{Ik ben MOE! Ik kan niet meer op m'n BENEN staan!} \\
& \hspace{1em} I \text{am tired I can not more on my legs stand}
\end{align*}
\item[\footnote{18}] This observation is due to Jan Koster (p.c.).
\end{itemize}
In section 5.7 examples will be considered in which an antecedent degree phrase is embedded in a subclause.

(44) ?? [Vergaderingen [van [zowel onschuldige samenzweerders ]]]] zijn afgeluisterd [als coupe-plegers]
meetings of as-well innocent/harmless conspirators are bugged as coup-committers
`Meetings of harmless conspirators are bugged as well as people committing coups'

(45) ?? [Vergaderingen [van [én onschuldige samenzweerders ]]]] zijn afgeluisterd [én coupe-plegers]
meetings of AND innocent/harmless conspirators are bugged AND coup-committers
`Meetings of both harmless conspirators are bugged and people committing coups'

In sum, we saw in this section that all four constructions allow the first associate to be embedded in a constituent to at least some degree. There are a number of factors that facilitate the link between the first (embedded) and the second (sentence-final) associate, such as the extent to which they are marked off from the rest of the sentence by, for instance, stress patterns. The clearest instance of this would be the degree head zo `so', which is always stressed. Apart from emphasis, the nature of the link between first and second associate is also important. In coordination and comparatives, the noun phrase in the second associate borrows, or shares, as it were, the syntactic function of one of the noun phrases in the matrix clause. This requires an additional step in processing, a step that result clause constructions, in which information is merely being added on, do not require.

ANALYSIS

As for the analysis of result clause constructions, it is difficult to account for the possibility of embedding the antecedent in structural terms. That is, it seems to be impossible to define a set of positions and constituents in which a degree phrase can or can not occur. Rather, it seems to be the case that an analysis should provide a structure in which several possibilities are allowed for.

This is the position I will take: an analysis of result clause constructions should provide a structural configuration that allows for a free distribution of the

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19 In section 5.7 examples will be considered in which an antecedent degree phrase is embedded in a subclause.
antecedent degree phrase. In section 5.1.2 I discussed how a result clause is licensed by a degree phrase. I proposed that the result clause is licensed by movement of the degree phrase to adjoin to the specifier of the conjunction phrase. This yields a configuration in which specifier head agreement ensures that the degree head and the conjoining head are matched. With the head of the conjunction as intermediary, the degree phrase can also be matched with the result clause. As was noted there, this entails that the only restriction on the degree phrase will be that it occurs in a position from which it is able to move up to adjoin to the specifier. In section 5.7 below we will see that, presumably for this reason, the degree phrase can be embedded in (and move out of) a complement clause, but not in a relative clause.

5.6 Split antecedents

In chapter 4, the fact that result clauses can have two antecedent degree phrases was one of the main reasons not to assume that the subclause originates inside the degree phrase (cf. section 4.3.5, Andrews 1975). In this section we will see more examples of split antecedents in result clause constructions. Relative clauses also allow split antecedents, but with coordination and comparatives there are a number of other issues that need to be taken into account.

First consider a result clause example:

(46) a Zoveel mensen hebben zoveel boeken geleend dat de bibliotheken bijna leeg zijn
so-many people have so-many books borrowed that the libraries almost empty are
'So many people borrowed so many books that the libraries are almost empty'

b Zoveel mensen in deze buurt hebben zoveel deuren zo fel rood geschilderd dat de bloemen erbij in het niet vallen
so-many people in this area have so-many doors so bright red painted that the flowers thereby in the nothing fall
'So many people in this neighbourhood painted so many doors in such a bright red that the flowers seem to be invisible'

(47) So many people liked so many pictures at the gallery that the exhibition was held over for two weeks
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(Guéron & May 1984, p.2, ex.(7a))

It seems that, in cases like these, the result clause presents the effect that is produced by a combination of several factors. In (46b) it is the amount of people plus the amount of doors plus the brightness of red that, together, results in the situation that flowers are hardly noticeable any more. These factors (number of people and doors, brightness of the colour used) are brought to attention and indicated syntactically and prosodically by the degree head zo `so'.

Note that in this clause-internal case of a split antecedent, the antecedents are distributed over constituents with different syntactic functions, viz. subject, object and secondary predicate.

This is also possible in comparatives (under certain conditions), but not in the other two constructions at issue in this section. Guéron & May (1984, p.3, ex.(7b)) give the following example of a relative clause with two antecedents within one clause (cf. section 4.3.4 of the previous chapter):

(48) * Every man saw some woman last year who is similar

As we will see shortly, in relative clause and coordination constructions, the entities within one clause that the second part refers back to must be coordinated into a single phrase.

Result clauses also allow coordinated antecedents:

(49) Op het festival waren [zo veel ouders en zo weinig kinderen] dat er meer ouders dan kinderen waren
     on the festival were so-many parents and so few children that there were more parents than children were
     `There were so many parents and so few children at the festival that there were more parents than children'

The following example shows that the occurrences of zo `so' need not be restricted to a single clause; the antecedents may occur in two separate (coordinated) clauses:20

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20 See also the discussion of the impossibility of linking across a clause boundary in section 5.7.
Since the relative clause is not compatible with either antecedent by itself, examples like these cannot be analysed as involving Right Node Raising (cf. chapter 4, section 4.3.5 on Andrews 1975).

Relative clause constructions can have split antecedents, both inside a single clause and across clauses. The relevant examples are given in (51):²¹

(51) a Janna heeft een man en een vrouw gezien die erg op elkaar leken Janna has a man and a woman seen who very on eachother seem `Janna saw a man and a woman who looked very much like each other'

b A man entered the room and a woman went out who were quite similar


c Een man kwam de kamer binnen en een vrouw ging naar buiten die erg op elkaar leken a man came the room inside and a women went to outside that very on eachother seem `A man entered the room and a woman went out who looked like each other'

With respect to comparatives, it is possible to have two degree phrases in different (subject or object) positions in one clause (cf. Hendriks 1994 for discussion):

(52) More land produces more corn than ever before

However, this is only a case of split antecedents if the second conjunct (than ever before above) provides a general comparison and does not refer back to any of the comparative degree phrases in subject and object position specifically. That is to say, if the second conjunct were than rye, as in (53) below, it cannot refer back to both subject and object: than rye does not have a split antecedent in the following example:

²¹ Since the relative clause is not compatible with either antecedent by itself, examples like these cannot be analysed as involving Right Node Raising (cf. chapter 4, section 4.3.5 on Andrews 1975).
More land produces more corn nowadays than rye (than before)

In example (53) than rye can only be linked to more corn, and the interpretation is that the amount of land that produces more corn than rye is increasing.

The restriction that comparison should be general (and not specifically aimed at both the subject and object) to make split antecedents feasible originates in the following. To interpret the sentence fully, one needs to reconstruct the syntactic environment of the antecedent (in (53) the object) in order to assign a syntactic function to the second conjunct. That is to say, to be able to infer that rye should be interpreted as an object, as the entity that is produced besides corn, it should somehow identify with the syntactic function of corn. Since this is not needed in the general example with than ever before in (52), this one does not run into interpretational problems.

Besides these clause-internal split antecedents it is possible to coordinate two antecedents into a single phrase that performs the same syntactic function as the compared element in the second conjunct:

More men and less children were there on the festival than women

Example (55) shows that it is possible for a comparative than phrase to have antecedents that are distributed over two coordinated clauses, although judgments on this example differ:

With respect to coordination, it is obvious that clause-internal coordination of first associates is possible.

Janna has strawberries and cherries bought and peaches

The same requirement makes clause-internal split antecedents in coordination uninterpretable.
In these examples, the intonation pattern of the utterance is very important in providing the intended meaning.

It seems more difficult to provide an appropriate example of split antecedents across clauses with respect to coordination. These are only possible when the contents of the clauses in which the two antecedents appear are equal:

(57) a  Jan ging weg en Piet (ging weg) en Marie (ging weg)
Jan went away and Piet went away and Marie went away

b # Jan ging weg en Piet arriveerde en Marie (..?..)
Jan went away and Piet arrived and Marie

This does not come as a surprise when one realizes that the semantic content of the absent clause that Marie is subject of has to be reconstructed from the clauses of the antecedents. At the same time, the reconstruction requirement makes examples like (57) look weird.

Similarly, it is impossible to construct an example in which a second conjunct would have both subject and object as antecedent:

(58) # Janna kuste Marie(,) en Peter
Janna kissed Marie and Peter

does not mean:
Janna kissed Marie & Peter (kissed Marie) & (Janna kissed) Peter

Reconstruction of the syntactic environment of the antecedent, then, prevents coordinated (and compared) noun phrases from having clause-internal split antecedents.

5.6.1 Summary

In sum, all four constructions allow split antecedents across two clauses. The nature of the link between the antecedent on the one hand and result or relative
clauses or second conjunct on the other hand determines to what extent such split antecedent cases are feasible.

In coordination, for instance, both antecedents should have the same syntactic function in their respective clauses, which in addition need to contain the same information for the whole sentence to be interpretable.

Result clause constructions and some comparatives are the only ones in which the syntactic function of the constituent containing the degree head (zo `so' or -er/more) does not matter; only they allow clause-internal split antecedents in constituents with different syntactic functions.

ANALYSIS

The possibility of split antecedents is one that proved to be hard to capture in any previous analysis.\textsuperscript{23} It seems that an analysis should allow for it, rather than account for it. The conjunction phrase analysis presented here indeed allows for split antecedents.

In section 5.1.2 I discussed how the result clause constructions is licensed; the licensing relation does not preclude split antecedents.

5.7 No (non-complement) CP-boundary in between

In section 5.5 above we saw that the antecedent of result clauses may be very deeply embedded. Kayne (1994, p.127) observed that so can not be embedded in a relative clause in English:

\begin{itemize}
  \item (59) * Plots [that so many people know about] have been hatched [that the government has lost all credibility]
\end{itemize}

In general, the antecedent of a result clause may not be contained in a subclause of a matrix clause, if the result clause occurs in the final position of the matrix clause. In the case of (59), the antecedent so is contained in a relative clause, whereas the result clause occurs at the end of the matrix clause.

\textsuperscript{23} See section 4.3.4 of the previous chapter for Guéron & May's (1984) account of split antecedents in result clause constructions.
If the analysis proposed here is correct, the result clause in (59) is conjoined with (at least) the matrix AgrSP (because the degree phrase is part of the subject constituent, which I assume to be in [spec,AgrSP]):

(60) \[ \text{conjp AgrSP plots [cp ..so..] :] [cp that....]] \]

Apparently, the antecedent degree phrase may not be contained in a CP within the specifier of the conjunction phrase).

Now if the result clause were conjoined with (the AgrSP of) the relative clause containing the antecedent, it would occur right after the relative clause. In that case, the sentence ought to be grammatical, because there is no longer any CP boundary in the first conjunct that separates so and the result clause. This prediction is borne out by the following examples:

(61) The secret plans [that so many people know about that the government has lost all credibility] have (finally) been hatched

(62) De criminelen, [die bij zo veel mensen bekend waren dat de politie gezichtsverlies leed], zijn eindelijk gearresteerd
   the criminals who with so-many people known were that the police face-loss suffered are finally arrested
   `The criminals, who were known to so many people that the police lost face, are finally arrested'

Similarly, when the antecedent is part of a subject clause, the result clause must be conjoined with (and hence appear right after) the subject clause, and cannot occur at the end of the matrix clause:

(63) a [[Dat de haven zo mooi is dat Jan 'm wil fotograferen] is duidelijk
    that the harbour so beautiful is that Jan it wants photograph is clear
    b * [[Dat de haven zo mooi is] is duidelijk] [dat Jan 'm wil fotograferen]

The same restriction applies to noun phrase coordination, comparatives and a noun phrase plus relative clause:

(64) a [Dat zij Jan bemint en Piet] is duidelijk
    that she Jan loves and Piet is clear
    `That she loves Jan and Piet is clear'
    b * [Dat zij Jan bemint] is duidelijk [en Piet]
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(65) a [Dat er meer mannen op het festival zijn dan vrouwen] is duidelijk
that there more men on the festival are than women is clear
`That there are more men at the festival than women is clear'
b * [Dat er meer mannen op het festival zijn] is duidelijk [dan vrouwen]

(66) a [Dat hij de vrouw kent die alles weet] is duidelijk
that he the woman knows that everything knows is clear
`That he knows the woman who knows everything is clear'
b * [Dat hij de vrouw kent] is duidelijk [die alles weet]

(67) a [Dat de haven zo mooi is dat Jan `m wil fotograferen] is duidelijk
that the harbour so beautiful is that Jan it wants photograph is clear
b * [Dat de haven zo mooi is] is duidelijk [dat Jan `m wil fotograferen]

In section 5.6 it was observed that in split antecedent constructions the antecedents need not occur in the same clause (cf. (68) below). At first sight, this seems to be a violation of the observation that no CP boundary may occur between the result clause and its antecedent(s). The next example (68a), shows that the split antecedent construction can involve complement clauses. In these examples, a CP dominating the antecedent does not seem to be problematic, contrary to what we have just seen with relative clauses and subject clauses. (68a) seems to me to be grammatical, although the various complementizers (dat) seem somewhat superfluous. The example in (68b), with two coordinated AgrSPs embedded in one CP sounds more natural to me:

(68) a Hij zei [dat zij zo klein is] en [dat hij zo groot is] dat ze samen op Mini en Maxi lijken
he said that she so small is and that he so big is that they together on Mini and Maxi resemble

b Hij zei [dat [zij zo klein (is) en hij zo groot is]] dat ze samen op Mini en Maxi lijken
he said that she so small is and he so big is that they together on Mini and Maxi resemble

The examples (68c,d) show that the result clause in (68a) is construed directly with the coordinated complement clauses, and that it is actually part of the complement of zei `said' itself:
With respect to antecedents in relative and subject clauses (or non-complement clauses in general), the result clause construction obeys the following constraint: no CP may dominate the antecedent zo `so' while not dominating the result clause.

Interestingly, the same transparency of complement clauses is observed with respect to tense. The tense used in complement clauses depends on the matrix clause tense, whereas the tense used in a relative clause is independent of the matrix clause tense (cf. Stowell 1997).

If we accept the grammaticality of (68a,c), the examples show that a result clause can be separated from its antecedent zo `so' by (at most) one complement CP boundary.24

From a different point of view it seems that the degree head so is able to reach out of a complement clause and take scope over the matrix clause. This has also been attested by various authors in the past. Andrews (1975, p.165) cites the following examples from Williams (1974):

(68)  
\[ ([Dat zij zo klein is] en [dat hij zo groot is] dat ze samen op Mini en Maxi lijken) zoi Jan \]
that she so small is and that he so big is that they together on Mini and Maxi resemble said Jan

\[ ([Dat zij zo klein is] en [dat zij zo groot is]) zoi Jan [dat ze samen op Mini en Maxi lijken] \]
that she so small is and that he so big is said Jan that they together on Mini and Maxi resemble

If we accept the grammaticality of (68a,c), the examples show that a result clause can be separated from its antecedent zo `so' by (at most) one complement CP boundary.24

In the (69b) example, the result clause is construed with the matrix clause, whereas in (69a) it is construed with just the complement clause of said. Williams (cited in Andrews 1975, p.166) provides the following test to distinguish between the two structures:

(69)  
\[ a \text{ Bill's teachers said he was so smart he could solve any problem} \]
\[ b \text{ Bill's teachers said he was so smart that people doubted their recommendations} \]

In (70a) the agent by-phrase intervenes between the result clause and the complement clause containing its antecedent: the sentence is ungrammatical. In

\[ a \text{ * Bill is said to be so smart [by his teachers] that he can solve any problem} \]
\[ b \text{ Bill was said to be so smart [by his teachers] that people doubted their recommendations} \]

With respect to antecedents in relative and subject clauses (or non-complement clauses in general), the result clause construction obeys the following constraint: no CP may dominate the antecedent zo `so' while not dominating the result clause.

Interestingly, the same transparency of complement clauses is observed with respect to tense. The tense used in complement clauses depends on the matrix clause tense, whereas the tense used in a relative clause is independent of the matrix clause tense (cf. Stowell 1997).
The examples are grammatical if the matrix clause part in the examples (heeft hij gezegd "has he said") is treated as an interjection, and pronounced with the appropriate intonation. This is not what is at stake here.

Rouveret (1978, p.159 ff., cf. section 4.3.6) extensively discusses examples like the following (my glosses, PR):

(71) a Marie dit qu'elle a des amis si influents qu'elle va obtenir le poste
    Marie says that-she has of-the friends so influential that-she will get the job
    'Marie says that she has such influential friends that she is going to get the job'

    b = Marie says that her having friends influential to a degree x will result
        in her getting the job

    c or: Marie's saying that she has friends influential to a degree x will
        result in her getting the job

Example (71a) is ambiguous with respect to the clause with which the result clause is construed. In (71b), the result clause is construed (and in the analysis defended here, conjoined) with the complement clause of dire 'to say'. In (71c), we see an interpretation in which the result clause is construed with the matrix clause: it is Marie's claim that she has such influential friends that gets her the job.

Let us now look at the other constructions under consideration here with respect to linking across (complement) clauses. The following examples show that the sentence-internal and sentence-final parts in coordination, comparatives and relative clause constructions as well can be separated by a complement CP. Again, they cannot be separated from each other by the matrix CP:25

(72) a Hij zei [dat Jan weg ging] en [dat Piet weg ging] en Marie
    he said that Jan away went and that Piet away went and Marie
    'He said that Jan left and that Piet left, and Marie'

    b * [Dat Jan weg ging en dat Piet weg ging] heeft hij gezegd en Marie
        that Jan away went and that Piet away went has he said and Marie

(73) a Hij zei [dat een man de kamer binnen kwam] en [dat een vrouw naar buiten ging] die erg op elkaar leken
    he said that a man the room inside came and that a woman to outside went that very on each other seemed

25 The (b) examples are grammatical if the matrix clause part in the examples (heeft hij gezegd 'has he said') is treated as an interjection, and pronounced with the appropriate intonation. This is not what is at stake here.
`He said that a man entered the room and that a woman went out who looked like each other'

b * [Dat een man de kamer binnen kwam en dat een vrouw naar buiten ging] heeft hij gezegd die erg op elkaar leken

that a man the room inside came and that a woman to outside went has he said that very on each other seemed

(74) a Hij zei [dat er meer mannen op het festival waren] en [dat er meer kinderen wegbleven] dan vrouwen

he said that there more men on the festival were and that there more children away-stayed than women

b * [Dat er meer mannen op het festival waren en dat er meer kinderen wegbleven] heeft hij gezegd dan vrouwen

that there more men on the festival were and that there more children away stayed has he said than women

Andrews (1975, p.165) cites comparative examples by Williams (1974), in which the comparative degree head is contained in a complement clause of the main verb, while the result clause is construed with the matrix clause as a whole:

(75) a Bill's teachers said he was smarter than anybody else was

b Bill's teachers said he was smarter than anybody else did

In (74b), the result clause is construed with the matrix clause, whereas in (74a) it is construed with just the complement clause of said. Williams (cited in Andrews 1975, p.166) provides the following test to distinguish between the two structures (cf. above for result clause constructions):

(76) a * Bill is said to know more [by his teachers] than anybody else does

b Bill was said to be smarter [by his teachers] than he was by anybody else

Just like we saw in the result clause examples on p.& above, in (76a) the agent by-phrase intervenes between the comparative clause and the clause it is construed with. In (76b) however, the agent by-phrase is part of the matrix clause with which the comparative clause is construed, and the sentence is fine.

In sum, result clauses, relative clauses and second conjuncts in coordination and comparatives may be separated from their antecedent by a complement-CP, but not by any other subclause (be it subject clause or relative clause).
There are several other phenomena in which clause boundaries seem to be real barriers. Apparently, the conjunction phrase analysis of e.g. coordination and result clauses is no exception to this. For instance, in work on tense and sequence of tense, Stowell (1997) also showed that complement clauses behave differently from relative clauses. In complement clauses, the tense depends on the matrix clause tense. In relative clauses, the tense is independent of that of the matrix clause. Thus, complement clause seem to be more transparent than other subclauses.

Given the licensing proposal in section 5.1.2, I assume that the degree projection of so moves up to adjoin to the constituent in the specifier position of the conjunction phrase. It thereby marks the specifier constituent and creates a specifier-head relation in which the match between the degree head, the head of the conjunction and the dependent clause can be checked. To allow for the movement of the degree phrase, the degree phrase must occur in a position from which it is able to make that movement. Since movement out of a complement clause is generally allowed, whereas movement out of a subject clause or relative clause is not, it makes sense that a result clause can be associated with a degree phrase across a complement clause boundary, but not across a non-complement clause boundary.

An account of why complement clause do not pose a barrier between a result clause and its antecedent, or between tenses, would probably refer to L-relatedness. Being complements to the verb that selects them, complement clauses occur in L-related positions, whereas subject clauses, for instance, presumably are not (cf. Chomsky 1995, p.64 on L-related positions). I will not go into this here but state the requirement that no non-complement CP may intervene between a result clause and its antecedent(s).

5.8 Nested dependencies

In sentences with more than one result clause, relative clause, coordination or comparative construction, the dependencies are nested. For instance, a prepositional phrase associated with a direct object noun phrase will precede a prepositional phrase that is associated with a subject noun phrase when both occur sentence-finally (cf. below).
This nesting phenomenon also appears when there are two result clauses in a sentence; in (77) the result clause associated with an antecedent zo `so' in the subject noun phrase follows the result clause associated with the antecedent zo `so' in the object noun phrase:

(77) a Zo, veel mensen hebben zo, veel geld [dat₂ ze niet weten
people have so-much money that they not know
wat ze ermee moeten doen] [dat₁, liefdadigheidsinstellingen
what they there-with should do that charity-institutions
failliet zouden gaan aan de postzegels die nodig zijn om
bankrupt would go on the stamps that needed are to
hen allemaal te bereiken]
them all to reach
`So many people have so much money that they do not know what to
do with it, that charity institutions would go bankrupt on the stamps
needed to reach them all'

b * Zo, veel mensen hebben zo, veel geld [dat₁, liefdadigheids-instellingen
failliet zouden gaan aan de postzegels die nodig zijn om hen allemaal
te bereiken] [dat₂ ze niet weten wat ze ermee moeten doen]

Now consider the other constructions. For example, if both the subject and the object in a clause are coordinated or compared, the order of the coordinated or extraposed elements is the reverse of the subject-object order:26

(78) a Marie en Jan hebben Truus en Piet bemind
Marie and Jan have Truus and Piet loved
`Marie and Jan loved Truus and Piet'

b Marie heeft Truus bemind en Piet, en Jan (ook)
Marie has Truus loved and Piet and Jan (too)
`Marie loved Truus and Piet, and Jan did so too'

c * Marie heeft Truus bemind en Jan (ook), en Piet

(79) a Meer mannen dan vrouwen hebben meer kranten dan boeken gelezen
more men than women have more newspapers than books read
`More men than women read more newspapers than books'

26 Note that the (c) sentences are ungrammatical on the interpretation given under (a).
b Meer mannen hebben meer kranten gelezen dan boeken (,) dan vrouwen
more men have more newspapers read than books than women
c * Meer mannen hebben meer kranten gelezen dan vrouwen dan boeken

(80) a Die man [die we gisteren zagen] heeft dat boek [dat jij wilde hebben] gekocht
that man that we yesterday saw has that book that you wanted have bought
`That man we saw yesterday bought that book you wanted'  

b ?* Die man heeft dat boek gekocht [dat jij wilde hebben] [die we gisteren zagen]
a man has a book bought about skating with red hair

c * Die man heeft dat boek gekocht [die we gisteren zagen] [dat jij wilde hebben]

One can also find examples in which a comparative construction is nested in a result clause construction (cf. Guéron & May 1984, p.29, ex.(68)):

(81) a So many people ate more hush puppies at the county fair than we expected that we ran out of them early  
b ?* So many people ate more hush puppies at the county fair that we ran out of them early than we expected

Guéron & May (1984) assume that result clauses and extraposed comparative clauses are S'-adjuncts (to the right). They leave the ordering restriction an open issue. The next part of this section provides an explanation for the ordering restriction in (81).

ANALYSIS

The nesting requirement will be accounted for by the conjunction phrase analysis as follows. Recall the observation in section 5.4 that antecedent degree phrases in subject positions give rise to different structures than do degree phrases in object position:

(82) a Zoveel mensen hebben Pride and Prejudice gekocht dat het binnen een week uitverkocht was
so-many people have Pride and Prejudice bought that it within a week out-sold was
So many people bought *P&P* that it was sold out within a week

Vestdijk has so-many books written that they not on this shelf would fit

`Vestdijk wrote so many books that they would not fit on this shelf`

For the example in (77), repeated below, I propose the structure in (84b):

(84) a **Zo,veel mensen hebben zo'veel geld [dat₂ ze niet weten**

so-many people have so-much money that they not know

wat ze ermee moeten doen] [dat₁, liefdadigheidsinstellingen

what they there-with should do that charity-institutions

failliet zouden gaan aan de postzegels die nodig zijn om

bankrupt would go on the stamps that needed are to

hen allemaal te bereiken]

them all to reach

`So many people have so much money that they do not know what to
do with it, that charity institutions would go bankrupt on the stamps
needed to reach them all`

b \[\text{[co}n\text{ip} \text{[agr}sp \text{zoveel boeken geschreven [dat...]]}]\]

Since the conjunction phrase of the object-related result clause is embedded in the
first conjunct of the subject-related conjunction phrase, it follows straightforwardly
that the object-related result clause precedes the subject-related result clause. The
structure thus reflects the respective scopes of the degree elements.

Looking back at earlier extraposition analyses (cf. chapter 4), they usually
involve right-adjunction to the matrix clause at a certain (structural) level. Analyses
like these cannot immediately predict that sentence-final subject-related items will
follow other sentence-"final" items related to phrases in the matrix clause that are
structurally lower than the subject. Guéron & May (1984), for example, assume that
both result clauses and comparative clauses are S'-adjuncts. They give the
following example of an ordering restriction that they were not able to account for
(ibid., p.29, ex.(68)):
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(85)  a  So many people ate more hush puppies at the county fair than we expected that we ran out of them early

b  * So many people ate more hush puppies at the county fair that we ran out of them early than we expected

The analysis of nested dependencies just presented neatly accounts for the examples in (85). The comparative more hush puppies gives rise to conjunction at a lower level than the result clause construction with so many people in subject position. On the assumption that (at least at LF) the object more hush puppies occupies [spec,AgrOP], the comparative clause will be conjoined with AgrOP. The result clause will be conjoined with (at least) AgrSP, which includes the AgrOP-conjunction, comparative clause and all:

(86)  
\[
[\text{conjp1}
\begin{array}{l}
\text{[agrsp} \text{so many people ate} \\
\text{[conjp2 [agrop more hush puppies...]} [\text{[than...]}]]
\end{array}
\text{agrsp} [\text{[that.... ]}]]
\]

It should be noted that the embedding of a conjunction with AgrOP in a conjunction with AgrSP is a clear case of one construction having scope over (and containing) another. However, there are other cases in which this type of scope is not so easily determined. These concern examples like the following, in which a complex degree phrase includes both zo `so' and a comparative:

(87)  a  Janna is in haar jeugd [zo veel lang] geweest dan Marie dat ik niet kan geloven dat Marie nu de langste is
\text{Janna is in her youth so-much taller been than Marie that I not can believe that Marie now the tallest is}
\text{`Janna was so much taller than Marie in her youth that I cannot believe that now Marie is tallest'}

b  [Zoveel meer mensen] kwamen naar het feest dan ze uitgenodigd had
\text{so-many more people came to the party than she invited had}
\text{dat de wijn al snel op was}
\text{`So many more people came to the party than she invited that they quickly ran out of wine'}
Consider the scopal relations in examples like Bresnan (1973, p.339, cited in Andrews 1975, p.157) as well:

(i) a Mary doesn't have as many too many too many .... marbles as Jane
   b Cinday has more nearly as many too many marbles as Julie than Jane

A specifier c-commands the constituent it is a specifier of, and a specifier of a specifier of XP also c-commands XP.

Unfortunately, this account does not apply to the following example noted earlier:

(36) a Everybody is so strange [whom I like] [that I can't go out in public with them]
   b * Everybody is so strange [that I can't go out in public with them] [whom I like]

The Dutch (a) example is not very good, but it is clearly better than the ungrammatical (b). In these examples we have crossing dependencies that I do not have an account for yet.

In chapter 3 I concluded that degree phrases like *zoveel langer `so much taller' involve modification of *langer by *zoveel: *zoveel is adjoined to *langer:

(89) [degp1 [degp2 zoveel] [degp1 langer]]

In this case, it is not clear how the degree head zo `so' in itself would c-command the comparative degree head. Instead, it seems that the whole phrase zoveel `so much' (or as many in (88) above) counts for scope assignment. Since degree phrase, zoveel is adjoined to degree phrase, in (89) above, and hence c-commands degree phrase, according to Kayne (1994), degree phrase, has wider scope than the modified comparative degree phrase.27 By consequence, the comparative construction is embedded in the result clause construction.28

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   b Cinday has more nearly as many too many marbles as Julie than Jane

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   b * Everybody is so strange [that I can't go out in public with them] [whom I like]

The Dutch (a) example is not very good, but it is clearly better than the ungrammatical (b). In these examples we have crossing dependencies that I do not have an account for yet.
5.9 No split in the middle field

When the four constructions at issue occur in the middle field (which is only marginally possible with result clauses), it is ungrammatical to topicalize (the constituent containing) the antecedent noun phrase or degree phrase.

As discussed in section 5.3, result clauses usually appear in clause-final position. The examples below show that they do not readily appear in the middle field of a clause. It might very well be that the restriction on occurrence in the middle field is not entirely syntactic in nature (cf. Truckenbrodt 1994).

Truckenbrodt develops an intonation based account of extraposition. Since subclauses have their own intonational domain, they do not easily fit into that of the matrix clause. In the same vein, relative clauses that are rather long or intricate preferably occur at the end of the matrix clause.

In any case, result clauses can occur in the middle field of a sentence, though not readily. This section shows that, in contrast, it is completely ungrammatical to strand the result clause in the middle field when topicalizing the antecedent. Again, this also holds for a noun phrase with an associated relative clause and for coordination and comparatives:\textsuperscript{29}

\begin{itemize}
  \item[(90)]
    \begin{itemize}
      \item*a* Zij heeft \textit{een man en een vrouw} gezien
      \begin{itemize}
        \item\textit{she has a man and a woman seen}
        \item`She saw a man and a woman'
      \end{itemize}
      \item*b* \textit{Een man} heeft \textit{zij en een vrouw} gezien
    \end{itemize}
  
  \item[(91)]
    \begin{itemize}
      \item*a* Zij heeft \textit{meer mannen dan vrouwen} gezien
      \begin{itemize}
        \item\textit{she has more men than women seen}
        \item`She saw more men than women'
      \end{itemize}
      \item*b* \textit{Meer mannen} heeft \textit{zij dan vrouwen} gezien
    \end{itemize}
  
  \item[(92)]
    \begin{itemize}
      \item*a* Zij heeft \textit{de vrouw die alles wist} gezien
      \begin{itemize}
        \item\textit{she has the woman that everything knew seen}
        \item`She saw the woman that everything knew'
      \end{itemize}
      \item*b* \textit{De vrouw} heeft \textit{zij die alles wist} gezien
    \end{itemize}
\end{itemize}

\textsuperscript{29} This is one of a number of arguments against a stranding analysis of relative clause extraposition (e.g. Kayne 1994): if it is possible to strand a relative clause in sentence-final position, why can it not be stranded in the middle-field as well.
(93)  a ?* Ze had al lang [zoveel boeken dat ze niet op één plank passen] gelezen
            she had already long so-many books that they not on one shelf fit read
            `She read so many books that they don't fit on one shelf by far'
b * Zoveel boeken had ze al lang dat ze niet op één plank passen gelezen

Even if (93a) is an intonationally difficult sentence, (93b) is absolutely ungrammatical.

ANALYSIS

The observation that one cannot extract one coordinate out of coordination structures dates back to the Coordinate Structure Constraint in Ross (1967). In the present conjunction phrase analysis of coordination, result clause and other constructions, I relate the impossibility of extracting the first conjunct to the licensing domain of the construction.

In section 5.1.2 I proposed that a conjunction phrase is licensed by movement of the degree phrase to the specifier in the conjunction phrase. By that movement the degree phrase creates the option to check whether the degree head, the conjoining head and the result clause are matched.

However, if the degree phrase occurs in a topicalized position above the conjunction phrase, it can no longer adjoin to the specifier of the conjunction phrase to license the construction. An alternative structure, in which the topicalized constituent is indeed part of the specifier of conjunction phrase is not feasible:

(94)  * [Zoveel boeken had ze [: [dat ze niet op één plank passen]]] gelezen
            so-many books had she that they not on one shelf fit read
            `She read so many books that they don't fit on one shelf by far'

In (94), the specifier of the conjunction phrase appears to consist of the string zoveel boeken had ze (so-many books had she). However, this string does not form a constituent, so (94) is ungrammatical.

Hence, the contrast between the examples in (93a,b) originates in the following. Whereas (93a) is intonationally difficult, it still involves a conjunction phrase that can be licensed. In contrast, the conjunction phrase in (93b) cannot be properly licensed and the example is completely ungrammatical.
Note that the ungrammatical examples in (90)-(93) are fine if the second conjunct occurs sentence-finally:

(95) a  Zij heeft een man gezien en een vrouw  
  she has a man seen and a woman  
  `She saw a man and a woman'  
  b  Een man heeft zij gezien en een vrouw  

(96) a  Zij heeft meer mannen gezien dan vrouwen  
  she has more men seen than women  
  `She saw more men than women'  
  b  Meer mannen heeft zij gezien dan vrouwen  

(97) a  Zij heeft de vrouw gezien die alles wist gezien  
  she has the woman seen that everything knew  
  b  De vrouw heeft zij gezien die alles wist  

(98) a  Ze had [zoveel boeken] gelezen [dat ze niet op één plank passen]  
  she had so-many books read that they not on one shelf fit  
  `She read so many books that they don't fit on one shelf'  
  b  Zoveel boeken had ze gelezen dat ze niet op één plank passen  

In these examples, the specifier of the conjunction phrase can contain the topicalized constituent, contrary to the ones in (90)-(93):

(99)  [ [Zoveel boeken had ze gelezen] [: [dat ze niet op één plank passen]]]  
  so-many books had she that they not on one shelf fit read  
  `She read so many books that they don't fit on one shelf by far'  

In (99) the result clause is conjoined with the matrix clause, including the topicalized noun phrase zoveel boeken `so many books'. As such, the object noun phrase is still able to license the conjunction phrase and the sentence is grammatical.

The following section presents examples in which the second conjunct is topicalized. As we will see, these examples are ungrammatical as well, due to the same problem: once one or the other conjunct in a conjunction phrase is moved out, it can no longer be properly licensed.
5.10 No topicalization of the second conjunct without the first

In the preceding section we saw that it is ungrammatical to topicalize a first conjunct from within a conjunction phrase in the middle field of a clause.

In this section we will see that it is also impossible to topicalize the second conjunct from sentence-final position if the antecedent is not topicalized as well.30

This contrasts with topicalization cases in which the object or indirect object are topicalized together with the verb, as shown in (100):

\[(100)\]
\[
\begin{align*}
\text{a} & \quad \text{Zij heeft Jan gisteren gezien} \\
& \quad \text{she has Jan yesterday seen}  \\
\text{b} & \quad [\text{Jan gisteren gezien}] \text{ heeft zij niet} \\
& \quad \text{Jan yesterday seen has she not}  \\
\text{c} & \quad \text{Marie zal Jan een boek geven} \\
& \quad \text{Marie will Jan a book give} \\
\text{d} & \quad [\text{Jan een boek geven}] \text{ zal Marie niet} \\
& \quad \text{Jan a book give will Marie not}  \\
\end{align*}
\]

`She didn't see Jan yesterday'  
`Marie will not give Jan a book'

The following example shows that a result clause cannot be topicalized together with the verb, unless the antecedent zo veel 'so much' is also topicalized (or in the left-dislocated part):

\[(101)\]
\[
\begin{align*}
\text{a} & \quad \text{Ze hebben zo veel gegeten} \\
& \quad \text{they have so-much eaten} \\
\text{b} & \quad [\text{Gegeten dat ze er misselijk van waren}] \text{ hebben ze zo veel} \\
\text{c} & \quad [\text{Zoveel gegeten dat ze er misselijk van waren}] \text{ hebben ze}  \\
\end{align*}
\]

`They ate so much that they were sick (of it)'  
`Marie will not give Jan a book'

---

30 Cf. Kaan (1992, p.39-40), who notes that sentence-final prepositional phrases that are linked with a noun phrase within the clause cannot be topicalized together with the verb (cf. (c)):

\[(i)\]
\[
\begin{align*}
\text{a} & \quad \text{Zij heeft de man begroet [met de drie armen]} \\
& \quad \text{she has the man not greeted with the three arms}  \\
\text{b} & \quad [\text{De man begroet met de drie armen}] \text{ heeft zij niet} \\
\text{c} & \quad [\text{Begroet met de drie armen}] \text{ heeft zij de man niet}  \\
\end{align*}
\]
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(102) a Die jongen is zo mager dat hij wel achter een rietje kan schuilen
that boy is so skinny that he PRT behind a reed can shelter
`That boy is so skinny that he could hide behind a reed'

b * [dat hij wel achter een rietje kan schuilen] is die jongen zo mager

c [zo mager dat hij wel achter een rietje kan schuilen] is die jongen

This is also attested for coordination and comparison of noun phrases and noun phrases with a relative clause:

(103) a Zij heeft Jan gezien en Piet
she has Jan seen and Piet

a' * [Gezien en Piet] heeft zij Jan
seen and Piet has she Jan

b Zij heeft een man gezien die uit India komt
she has a man seen that from India comes

b' * [Gezien die uit India komt] heeft zij een man
seen that from India comes has she a man

c Zij heeft meer documentaires gezien dan films
she has more documentaries seen than movies

c' * [Gezien dan films] heeft zij meer documentaires
seen than movies has she more documentaries

d Ze hebben zoveel kaas gegeten dat ze er misselijk van waren
they have so-much cheese eaten that they there sick of were

d' * [Gegeten dat ze er misselijk van waren] hebben ze zoveel kaas
eaten that they there sick of were have they

Only when the first associate is topicalized as well can the second associate be part of the sentence-initial part:

(104) a [Jan gezien en Piet] heeft zij
Jan seen and Piet has she

b [Een man gezien die uit India komt] heeft zij
a man seen that from India comes has she

c [Meer documentaires gezien dan films] heeft zij
more documentaries seen than movies has she

d [Zoveel kaas gegeten dat ze er misselijk van waren] hebben ze
so-much cheese eaten that they there sick of were have they
ANALYSIS

The structural configuration of a conjunction phrase straightforwardly accounts for the possible and impossible topicalizations. Consider (101), repeated as (105):

(105) a  Ze hebben zoveel gegeten dat ze er misselijk van waren
     they have so-much eaten that they there sick of were
     `They ate so much that they were sick (of it)'

     b  * [Gegeten dat ze er misselijk van waren] hebben ze zoveel

     c  [Zoveel gegeten dat ze er misselijk van waren] hebben ze

In section 5.4 I assumed that when the antecedent degree phrase is part of a direct object (the constituent in [spec,AgrOP]), the result clause will be conjoined with (at least) AgrOP. That is, the sentence has the following structure:

(106) Ze hebben [conjp [agrop zoveel gegeten] [: [dat ze er misselijk van waren]]]

Looking at the ungrammatical (105b) example, it is clear from the structure in (106) that the topicalized part is not a constituent:

(107)  * [zp Gegeten dat ze er misselijk van waren], hebben ze
        [conjp [agrop zoveel t_i]

The grammatical examples, however, are straightforwardly analysed as topicalized conjunction phrases:

(108)  [conjp [agrop Zoveel gegeten] [: [dat ze er misselijk van waren]]] hebben ze

These grammatical and ungrammatical examples in which part of the matrix clause is topicalized thus provide support for the structural analysis of result clause constructions proposed here.

In addition, the conjunction phrase in the ungrammatical examples cannot be properly licensed, because part of it is moved elsewhere. I refer section 5.10 on topicalization of the first conjunct (and stranding the second in the middle field) for discussion.
5.11 Islandhood

Result clauses, relative clauses and second conjuncts in noun phrase coordination and comparatives are islands for extraction.

Consider the examples in (109) and (110), which show that one cannot extract a phrase out of a result clause:

(109) a  Piet is zo lang dat hij niet door de deur kan
        *Piet is so tall that he not through the door can
        `Piet is so tall he can't pass through the door'

   b  *Waar, is Piet zo lang dat hij niet t door kan?
        where is Piet so tall that he not through can

(110) a  Piet heeft zoveel geld verdiend dat hij alle boeken kan kopen die hij
        wil hebben
        Piet has so-much money earned that he all books can buy that he wants
        have
        `Piet earned so much money that he can buy all the books he would like
        to have'

   b  *Wat, heeft Piet zoveel geld verdiend dat hij kan t kopen?
        what has Piet so-much money earned that he can buy

As is well known, a constraint on coordination is that one cannot extract from coordinated structures either, unless the extraction is Across The Board (ATB, cf. Ross 1967):³¹

³¹ There are counterexamples to this claim. Williams (1994, p.18) observes that ATB-extraction is only forced in cases of symmetrical coordination, as in (i). In cases in which the coordinates are not (semantically) symmetric, non-ATB-extraction is possible. An example of asymmetrical coordination is given in (i) (= Williams 1994, ex.(35), p.18); the event of the first coordinate is taken to precede the activity of the second coordinate temporally. Swapping the coordinates gives rise to a different interpretation of the sentence:

(i)  John went to New York and bought a painting ≠
        John bought the painting and went to New York

Going to New York and buying a painting in the first sentence in (i) can be interpreted as a single event. The next example shows that one can extract from such a semantically asymmetric (but categorically symmetric) construction (= Williams 1994, ex.(36a), p.18). In that case, the single event reading features even more strongly:

(ii)  What did John go to New York and buy t ?

According to Williams, extraction is limited to the second coordinate in cases like this:
(iii) * What city did John go to t and buy a painting?

However, in Johannessen (1993, ex. (84b), p.52), an example by Lakoff (1986) of a similarly asymmetric kind is cited, in which a WH-phrase is extracted out of the first coordinate:

(iv) How many courses can you take t for credit and still remain sane?

A grammatical Dutch counterpart of (ii) is hard to find, but the Dutch version of (iv) is fine:

(v) a * Wat ben je naar New York gegaan en t tegenkomen?

`What did you go to New York and run into?'

b Hoeveel examens kan je halen en toch gezond blijven?

`How many exams can you pass and still remain healthy?'

It seems, then, that the ATB restriction on extraction out of coordinated clauses only holds for symmetrical cases.
grammatical function of the second associate can be determined. The availability of ATB extraction is the second difference between these two pairs of construction. I assume that these differences arise from the degree of (a)symmetry between the two conjuncts within the constructions.

ANALYSIS

Observations about the nonextractability of items out of coordinated structures dates back to Ross's Coordinate Structure Constraint (see also section 5.9 above). I do not have an account of the reasons behind such a constraint.

The next section presents a summary of the properties discussed so far. Chapter 6 will provide further evidence for the structural configuration of the conjunction phrase analysis proposed here. This evidence is based on Frisian result clauses and negative polarity items in result clauses.

5.12 Summary of properties

In the preceding subsections similarities between DP-coordination, comparatives, relative clauses and result clause constructions were discussed. The following table and list sum up the observations:

1. Result clauses usually occur sentence-finally. Relative clauses and second conjuncts in coordination and comparatives can also occur sentence-finally. The latter three are able to occur in the middle field (adjacent to their antecedent) as well;
2. A sentence-final relative clause, result clause, comparative phrase or coordinator-plus-DP can be associated with a DP (contained in the) subject, object, indirect object, or to a DP in an adverbial PP, etc. In coordination, comparative and result clause constructions linking to adverbs or predicative adjective phrases is possible as well;
3. In all four constructions, the antecedent can be embedded in, for instance, a prepositional complement. The antecedent of relative and result clauses may be rather deeply embedded, in coordination and comparative cases the degree of embedding cannot be very high, due to reconstruction requirements. One of the factors influencing the ease of linking the two associates (and, hence, the degree of embedding the first one) is how clearly they are marked off from the rest of the sentence;
4. All four constructions allow split antecedents across coordinated clauses. All of them allow coordinated antecedents as well. In addition, result clauses (and perhaps comparative clauses) allow antecedents distributed over more than one constituent in a single clause;
5. In all four constructions the antecedent may not be separated from the sentence-final part by a clause boundary, unless that clause is a complement clause;
6. In all four constructions, if there are two pairs of an antecedent and a sentence-final part, the pair with the hierarchically higher antecedent embraces the pair with the hierarchically lower antecedent;
7. In all four constructions one cannot topicalize the first associate while leaving the second associate in the middle field;
8. In none of the four constructions can the sentence-final part be topicalized, unless the antecedent is topicalized as well;
9. In all four constructions the sentence-final part is an island. (Although coordinated and comparative clauses do allow Across-the-Board extractions.)

<table>
<thead>
<tr>
<th></th>
<th>degree phrase + result clause</th>
<th>noun phrase + relative clause</th>
<th>coordinate construction</th>
<th>comparative construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. sentence-final occurrence of 2nd part</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>2. linking to various constituents</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>3. embedding the antecedent</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4. allow split antecedents</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>5. no CP-boundary</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>6. nested dependencies</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>7. split in the middle field</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8. topicalization without antecedent</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>9. extraction island: res.cl./ rel.cl./ 2nd coord./ comp.phr. ATB extraction</td>
<td>+</td>
<td>+</td>
<td>+?</td>
<td>+</td>
</tr>
</tbody>
</table>

ATB extraction
As we have seen, the link between a sentence-final result clause and the degree head zo `so' it is associated with obeys the same restrictions as two coordinated or compared DPs that are separated from each other (one of which occurs in sentence-final position with the conjunction) and a DP with an associated (but separated) relative clause that occurs sentence-finally.

In light of these many similarities between the four constructions that were at issue in this section, it is desirable to analyse them in a similar fashion. The conjunction phrase analysis captures exactly that.

5.13 Conclusion

In the preceding sections a conjunction phrase analysis of result clauses was presented and supported in various ways.

In section 5.3-5.11 I presented a number of properties of result clause constructions. Noun phrase-coordination, comparatives and relative clause constructions were shown to behave just like the result clause constructions. In each section I indicated how the property at issue is accounted or allowed for in a conjunction phrase analysis.

The next chapter provides additional support for the analysis. Frisian result clauses behave exactly as predicted by the analysis with respect to the availability of the verb second (main clause) word order. Licensing of negative polarity items in result clauses by matrix clause negation also supports the claim that the result clause can be conjoined with a part of the matrix clause.