The syntax of relativization

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2 A typology of relative constructions

1. Introduction

As an introduction to the topic, I will provide an overview of relative clause types. The goal of this chapter is five-fold; I aim at:

• providing a background for the syntactic analyses in the subsequent chapters;
• establishing a complete and systematic typology of relative clause constructions;
• (by doing so) discovering which gaps there are in our knowledge, and filling them wherever possible;
• making order out of chaos in the huge amount of literature on the subject by unifying all terminology, and systematizing classifications;
• (by doing so) facilitating and suggesting possible directions for future research.

I start with the definition of relative constructions, give some examples of important types, and systematically list the parametrical freedom there is. Section 3 treats the semantics of relative clauses in some more detail, where I focus on the less well-known 'relatives of a third kind', as described in Carlson (1977) and Grosu & Landman (1998). Section 4 discusses the functional classification of relatives by Lehmann (1984). Section 5 comments on the cross-linguistic universals and tendencies concerning relative clauses as reported in Downing (1978). Section 6 is an introduction to some special types of relative clauses: correlatives, circumnominal relatives, free relatives, adverbal relatives, non-finite relatives, and cleft and pseudo-cleft sentences. Section 7 is a summary of some important aspects of the relative construction: the use of relative pronouns and particles, the position of the external determiner, recursive and linear embedding (stacking), pied piping and preposition stranding, extraposition, and multiple relativization. Section 8 concludes the chapter. Many (but not all) constructions described here will be treated in full syntactic detail in the subsequent chapters.

2. Overview: definitions, examples, and parametric freedom

For most (western) linguists a typical example of a relative construction would be like (1).

1 This chapter builds on Lehmann (1984), Keenan (1985), Smits (1988) and work by many others. I have included many useful references throughout this book. However, I have not tried to make a complete bibliography on relative clause constructions, simply because this would be too large a task, unfortunately.
(1) Please hand this over to the man who is wearing a red jacket.

Here the man is a definite nominal antecedent, who a relative pronoun (referring to the antecedent), and who is wearing a red jacket a restrictive relative clause, where the relative pronoun has the subject role.

However, cross-linguistically - but also language-internally - there are many types of relative clauses. I intend to discuss the range of possibilities and present a coherent classification. Section 2.1 provides a definition of relative clauses. As an introduction, the major kinds are briefly illustrated in 2.2. Subsequently, section 2.3 briefly discusses the parametric space in a systematic way. Section 2.4 summarizes the syntactic main types of relatives. Finally, section 2.5 contains some terminological remarks.

2.1. The definition of ‘relative construction’

Relative clauses manifest themselves in many different ways. Therefore, Downing (1978:378) states that a universal syntactic characterization of relatives is impossible: it can only be given in semantic terms. According to Downing, these are coreference and assertion: there is coreference between terms inside and outside the relative clause, and the relative is an assertion about the relative NP. A third universal characterizes restrictives only: modification. Since our perspective is more general, we cannot use the latter. But the first two are not precise enough. In a conversation like ‘I saw John; He looked sad.’ the second clause meets the first two conditions, but it is not a relative clause.

I think two properties are essential to relative clauses. These are both semantic and syntactic in nature:

(2) Defining properties of relative constructions:

a. A relative clause is subordinated.

b. A relative clause is connected to surrounding material by a pivot constituent.

Here the pivot is a constituent semantically shared by the matrix clause and the relative clause. These defining properties are stronger than just coreference. If the pivot (usually a noun phrase) appears to be spelled out inside the matrix clause - often the main clause, but it can also be a subordinate clause itself - it can be recognized as an antecedent. This yields \([\text{matrix} \ldots [\text{N RC}] \ldots]\), where the relative clause contains a gap, which may be filled by a relative pronoun. If the pivot is spelled out inside the relative clause, the construction is head-internal: \([\text{matrix} \ldots [\text{RC} \ldots \text{NP}] \ldots]\). In this case the matrix contains the gap, which is filled by the.

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2 See section 4 for a definition based on functional scales.

3 Correlatives are one level less deep embedded than nominalized relative constructions. They are subordinated to the matrix clause, hence - in this respect - comparable to adverbal clauses such as \([\text{because} \ldots]\). See section 6.1.
whole relative construction (as sketched),\textsuperscript{4} or – if the relative clause is preposed – by a demonstrative: a correlative construction; see below.

In my view, variation concerning the position and content of the gap is expected, since there are different strategies to cope with the dimensionality problem that the second property (2b) poses – considering the fact that every linguistic construction must be linearized. (If this were not so, no gap would be needed at all, i.e. the pivot would be like the connecting letter of two perpendicular words in a crossword.)

There is a third universal property of relative clauses. Although it may not be a defining property, it is essential in the sense that the whole concept of relativization would be rather limited in use if it were invalid.\textsuperscript{5}

\begin{enumerate}
\item \textbf{(3) Additional essential property of relative constructions:}

The semantic $\theta$-role and the syntactic role that the pivot constituent plays in the relative clause, are in principle independent of its roles outside the relative.

This property is briefly illustrated in (4). \textit{Mouse} is the pivot NP. It is an experiencer in the main clause and a patient in the relative. Syntactically, it is the subject in the main clause and the direct object in the subordinate.

\item The mouse that I caught _ yesterday was hungry.
\end{enumerate}

Hence the gap in the relative representing the mouse is both semantically and syntactically independent of its roles in the matrix clause. This does not mean that every role is available in every language. Languages can restrict the number of available \textit{internal} roles – I am not aware of any limitations on \textit{external} roles – i.e. they can be scaled differently on a \textit{grammatical function hierarchy} (cf. Keenan & Comrie, 1977; Lehmann, 1984:219; Bakker & Hengeveld, 2001; and section 4 of this chapter). For instance, in many languages prepositional objects and lower functions are not possible relative positions. There are also language-dependent constraints that have to do with the possibility of recovering the function of the relative 'gap' (see e.g. Givón 1984:Ch15). Furthermore, in free relatives the number of roles can be restricted by Case matching effects (see e.g. Groos & Van Riemsdijk 1981). Nevertheless, these limitations do not fundamentally alter the role \textit{independency} stated in (3).

\subsection*{2.2. Examples of important relative clause types}

In this section I will give some examples of important relative clause types.

\textsuperscript{4} The relative clause is then nominalized (hence type.lifted). This yields a circumnominal relative. See below.

\textsuperscript{5} Givón (1984:651) states: "[...] an \textit{equi-case constraint} on relativization [...] would entail a great reduction in the expressive power of language, one that apparently no language has attempted to impose."
Semantically, there is at least a tripartition, which is to be discussed in more detail in section 3. The first two kinds are well-known. *Restrictive relatives* restrict the meaning of the antecedent. *Appositive relatives* specify the meaning of the antecedent. The difference is illustrated by (5a/b).

(5)  
   a. (Jill spoke to) the lecturers that failed the test on didactics.  [restrictive]  
   b. (Jill spoke to) the lecturers, who failed the test on didactics.  [appositive]

In (5a) Jill only spoke to the group of lecturers that failed the test; she does not address possible lecturers that passed the test. In (5b) she spoke to all lecturers in the domain of discourse, who (by the way) all failed the test.

A third group is the group of *degree relatives* (‘amount relatives’ in Carlson’s 1977 terms). An example is given in (6).

(6) (Jill spilled) the milk that there was in the can.  [degree relative]

The subordinate refers to the *amount* of milk, rather than to the fact that there was milk in the can. In fact, Jill spilled *all* the milk. Hence Grosu & Landman (1998) analyse degree relatives as involving a maximalization operation; see section 3.

Syntactically, one distinguishes *prenominal*, *postnominal* and *circumnominal relatives*. These are illustrated in (7a-c). Sentence (7a) is Mandarin Chinese, taken from Lehmann (1984:64); (7c) is Dagbani, from Lehmann (1984:117).  

(7)  
   a. Wō bā nǐ gěi wǒ de shū diūdiào-le.  [prenominal RC]  
      I ACC you give I NR book loose-PERF  
      ‘I have lost the book that you gave me.’
   b. (Jill lost) the present that I gave to her.  [postnominal RC]
   c. A mì [ō nō ti saan-so lāgri] la.  [circumnominal RC]  
      you know he SR give stranger-SPC/LIV money PTL  
      ‘You know the stranger whom he gave the money.’

Postnominal and prenominal relatives are treated in detail in Ch4§3 and Ch4§4 respectively. Circumnominal relatives are often called *internally headed relatives*. They are discussed in more detail in section 6.2 and especially Ch4§5. In the particular case of (7c) it is the specific morpheme *so* that betrays which constituent is the head. However, in general it is clear that this kind of construction gives rise to ambiguities.

Furthermore, there are some other types of relatives that do not automatically fit into the picture: *free relatives*, *participial relatives* and *correlatives*. A free relative (8) does not have an overt antecedent; it is implicit.

(8)  
   Jill liked [what I gave to her].  [free relative]
Here *what* includes a covert antecedent; it means *the thing that*. See further section 6.3.

Participial relatives are relatives of which the verb has participial inflection, that is, unlike normal finite inflection. In my opinion a true participial relative does not simply show participle-adjectival conversion, because the subject of the relative may be an entity different from the head noun, which is an object for instance. See (9), which is Telugu (a Dravidian language), taken from Lehmann (1984:50).

(9) [Míru náku ic-cín-a] pustukamu cirigípō-yin-adi. \([participial RC]\)
    you\(_{pl}\) me give-PRET-PART book\(_{nom}\) tear.up-PRET-3.SG
    ‘The book you gave me has been torn up.’

Many languages use a simplified form of this strategy, where the head noun must be a subject. For instance, *de gevallen man* ‘the fallen man’ in Dutch.

Finally, a correlative is a relative in a left-adjoined position that is separated from its correlate in the matrix clause. Therefore the correlative contains the antecedent (it is head-internal) and the correlate is usually a pronoun or determiner. This is illustrated with a Hindi example in (10), taken from Grosu & Landman (1998:164). The final translation is mine.

(10) [jo láRke KhaRе hai], ve lambe haiN. \([correlative]\)
    wh boys standing are those tall are
    lit. ‘Which boys are standing, they are tall.’
    ‘The boys who are standing are tall.’

The correlative construction will be considered in more detail in section 6.1 and especially in Ch4§6.

This short exposé suffices to get a first impression of the typological richness of the relative construction. The following section explores the parametric space in a more systematic way.

### 2.3 Parametric freedom

Differences between relative clauses can be found on any imaginable aspect of the construction. See the chart in (11), to be illustrated directly below. It is based on the sample of patterns described in Appendix II that consists of 223 relative strategies in 172 languages around the world. They are compiled from typological data in Comrie (1981), Culy (1990), Downing (1978), Givón (1984), Keenan (1985), Keenan & Comrie (1977), Lehmann (1984), Peranteau et al. (1972), and Smits (1988).

(11) a. **Kind of modification/relation:** restrictive/appositive/maximizing
    b. **Hierarchical status of RC:** embedded within DP, correlative
    c. **Presence of head:** headed/free relatives
    d. **Presence of relative pronoun:** yes/no
    e. **Presence of complementizer:** yes/no
    f. **Presence of resumptive pronoun:** yes/no
g. Hierarchical position of head: externally/internally headed RCs
h. Linear order of head and RC: head-initial/final relatives
i. Inflectional completeness of RC: finite/non-finite relatives
j. Position of determiner w.r.t. N and RC: initial/middle/final
k. Position of (Case) marker, if any: on N, on N and RC

Given these eleven degrees of freedom, one might expect $3^2 \times 2^9 = 4608$ types of relative constructions, even apart from related ones such as cleft and pseudo-cleft sentences, and extraposed relatives. This is comparable to the number of languages on earth. Clearly, this estimate is a little exaggerated, since there are correlations between the parameters mentioned.

I will briefly illustrate the contrasts mentioned in (11) by example sentences (12) through (22). Several of these contrasts have been shown in the previous section, too.

(12) Kind of modification/relation:?
   a. (I saw) the soldiers that lost the war. [restrictive]
   b. (I saw) the soldiers, who lost the war. [appositive]
   c. (They are not quite) the warriors that their parents were. [maximalizing]

(13) Hierarchical status of the relative clause:8
   a. [DP The [man who I saw]] is selling the piece of cloth. [embedded]
   b. [CP n ye tyÈ min ye], ò be fini fÈre [correlative]
      I CMPL man wh see DEM IMPF cloth:DEF sell
      lit. ‘The man whom I saw, he is selling the (piece of) cloth.’

(14) Presence/absence of the head:
   a. Jill ignored the advise which I gave to her. [headed relative]
   b. Jill ignored what I told her. [free relative]

(15) Presence/absence of a relative pronoun:9
   a. Jill visited the museum which I recommended. [relative pronoun]
   b. Jill visited the museum I recommended. [no relative pronoun]

(16) Presence/absence of a complementizer:
   a. Jill visited the museum that I recommended. [complementizer]
   b. Jill visited the museum I recommended. [no complementizer]

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7 To be precise, the example in (12c) is a kind relative, which is related to degree relatives. Both are subtypes of the maximalizing group. See further section 3.
8 The Bambara example (13b) is taken from Lehmann (1984:135).
9 Relative elements are treated in detail in Chapter 5.
(17) Presence/absence of a resumptive pronoun:10
a. ha-ish a she-Yoav ohev ot-a ... [resumptive pronoun]
   the-woman REL-Yoav loves ACC-her
b. ‘the woman that Yoav loves …’ [no resumptive pronoun]

(18) Hierarchical position of the head:11
a. [Nuna bestya-ta ranti-shqa-n] alli bestya-m ka-rqo-n. [IHRC]
   man horse-ACC buy-PERF-3 good horse-EVID be-PAST-3
b. ‘The horse that the man bought was a good horse.’ [EHRC]

(19) Linear order of the head and the relative clause:12
a. Aita-k irakurri nai d-u [ama-k erre d-u-en liburu-a]. [prenominal]
   father-ERG read wants ABS-PRES mother-ERG burnt ABS-PRES-NR book-DEF
   (DEF) 3-(ERG.3) (DEF) 3-(ERG.3)
b. ‘Father wants to read [the book that mother burnt].’ [postnominal]

(20) Inflectional completeness of the relative clause:13
a. iç-in-den slik-tiş-im-iz ev [non-finite]
   inside-POSS.3-ABL leave-NR-POSS.1-PL house
b. ‘The house from which we came out.’ [finite]

(21) Position of the external determiner (if any) with resp. to N and the RC:14
a. I spoke with the man who knows you. [initial]
b. Jag talade med mam-en vilken känner dig. [middle]
c. Dia menulis buku yang tebal itu. [final]
   he ACT-write book REL thick DEF
   ‘He wrote the book which is thick.’

(22) Position of (Case) markers, if any:15
a. Ich fürchte den Herr-n der eine Pistole trägt. [on N]
   I fear the gentleman-ACC who a gun carries
b. … tu”ku-i [u” ti “ka-”pih]-a. [on N and RC]
   … meat-ACC [POSS.3 eat-PART.PERF]-ACC
   ‘… the meat that he ate.’

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10 The Israeli Hebrew example (17a) is taken from Givón (1984:655). The English example in (17b) is used as a translation and a contrastive example at the same time.
11 The Ancash Quechua example (18a) is taken from Cole (1987:277); it is a circumnominal relative. Prenominal and postnominal relatives are externally headed. Circumnominal relatives and correlatives are internally headed.
12 The Basque example (19a) is taken from Lehmann (1984:59).
13 Non-finite relatives, including infinitival ones are discussed in section 6.5.
14 Example (21b) is Swedish; (21c) is Indonesian, taken from Lehmann (1984:95). The position of the determinant will be treated in section 7.2 and especially Ch3§3.2 and Ch4§3.6,4-7.
15 Example (22a) is German; (22b) is Shoshoni, taken from Lehmann (1984:79). The influence of Case on the syntax of relative clauses is treated in Chapter 4. However, I will not further discuss the position of Case markers as such.
The acknowledgement of these eleven ‘parameters’ facilitates an easy classification of individual relative constructions. The general question, then, is how these options relate to other properties of the language in question, and how they relate to each other. In the subsequent sections and chapters I try to illuminate the deeper nature of these parameters and their relations.

2.4. Syntactic main types of relatives

On the basis of the parameters mentioned above, one may distinguish four syntactic main types of relatives. In a nutshell, these are: postnominal relatives, prenominal relatives, circumnominal relatives, and correlatives. Their syntactic structures are sketched in (23).

(23) a. postnominal relatives  \[S-\text{matrix} \ldots [N \ RC \ldots]\]
b. prenominal relatives  \[S-\text{matrix} \ldots [RC \ N \ldots]\]
c. circumnominal relatives  \[S-\text{matrix} \ldots [(RC \ldots N \ldots)] \ldots]\nd. correlatives  \[S-\text{matrix} [RC \ldots N \ldots] [S-\text{matrix} \ldots (\text{Dem}) \ldots]\]

Each type has a headed and a free variant. It has been shown for postnominal relatives in (14) above; see further section 6.3. Two important differences between the four types are summarized in table 1.

<table>
<thead>
<tr>
<th>property</th>
<th>postnominal</th>
<th>prenominal</th>
<th>circumnominal</th>
<th>correlative</th>
</tr>
</thead>
<tbody>
<tr>
<td>internal head</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>nominalized</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
</tbody>
</table>

As illustrated above, circumnominal relatives and correlatives have an internal head. The circumnominal construction is nominalized, like postnominal and prenominal relative constructions. That is, it is a DP – hence there can be an external Case marker or determiner; see further section 6.2. Thus only correlatives are bare sentences, which are almost always left-adjointed to the matrix clause.

Although postnominal relatives are the most common, the other types occur in different language families across the world; see Appendix II, figure 1. The syntax of these four main types of relatives will be treated extensively in the subsequent chapters.

2.5. Terminological remarks

Before I go on, some terminological remarks are in order. I will use the following terminological schema of dependencies, adapted from Lehmann (1984:49) and Downing (1978:382). The extrapoed group in figure 1 is shaded grey because it does not form a natural class with correlatives in any analytical way (cf. Chapter 7 and Srivastav 1991).
**Figure 1. Relative terminology I: syntactic main types of relatives.**

<table>
<thead>
<tr>
<th>Relative Clauses</th>
<th>Embeddable</th>
<th>Co-relative</th>
<th>Extraposable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adnominal</td>
<td>Correlative</td>
<td>Extraposable</td>
</tr>
<tr>
<td></td>
<td>Circumnominal</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Some other useful terminological classifications are depicted in figures 2, 3 and 4.

**Figure 2. Relative terminology II: internally and externally headed relatives.**

<table>
<thead>
<tr>
<th>Relative Clauses</th>
<th>Internally Headed</th>
<th>Externally Headed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Circumnominal,</td>
<td>Adnominal</td>
</tr>
<tr>
<td></td>
<td>Correlative</td>
<td>Extraposable</td>
</tr>
</tbody>
</table>

**Figure 3. Relative terminology III: headed and free relatives.**

<table>
<thead>
<tr>
<th>Relative Clauses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headed</td>
</tr>
<tr>
<td>Free (= headless)</td>
</tr>
</tbody>
</table>

**Figure 4. Relative terminology IV: replacive and non-replacive relatives.**

<table>
<thead>
<tr>
<th>Relative Clauses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replacive</td>
</tr>
<tr>
<td>Non-replacive</td>
</tr>
</tbody>
</table>

16 Free correlative are also free relatives, but not replacive, strictly speaking.
In order to prevent terminological confusion, I want to stress the following points:

- *Embedded* is sometimes called *subordinated*.
- *Co-relative* is sometimes called *adjoined*.
- Of course *co-relatives* are also subordinate sentences, but not subordinate to DP_{rel}. In Chapter 7 I argue that extraposed relatives are not adjoined. I will not use the terms *subordinated* and *adjoined* to avoid confusion.
- The term *co-relative* is not to be confused with *correlative*.
- The terms *prenominal*, *postnominal* and *circumnominal* are equivalent to *head-final*, *head-initial*, and *head-internal* (or *internally headed*), respectively.
- *Prenominal* and *postnominal* relatives as a group are referred to as *adnominal relatives* or *ad-relatives*.
- *Pre-* or *postnominal* should never be called *pre-/postposed*, because that leads to confusion with co-relatives. Therefore I will not use these terms at all.
- A commonly used abbreviation for *circumnominal relatives* is *IHRC* (internally headed relative clause), or *head-internal relative*. (Strictly speaking this is incorrect, since correlatives are also head-internal.)
- Hence an *EHRC* (externally headed relative clause) is an adnominal relative.
- *Circumnominal* relatives are also called *replacive*, but since this term is also used for *free relatives*, I will not use it.
- *Headless relatives* are *free relatives*, in opposition to *headed relatives*, i.e. all relatives with an overt head (whether adnominal, circumnominal or correlative).
- Therefore the terms *headed* versus *headless relatives* must not be used for adnominal and circumnominal relatives, respectively. Notice that there are free circumnominal relatives (cf. Culy 1990:24-25).
- *Preposed* and *extraposed* are also called *left-extraposed* and *right-extraposed*. I will not use these terms.
- *Preposed co-relatives* are *correlatives*.
- The idea that correlatives and extraposed relatives are *convertible* is refuted in e.g. Srivastav (1991).

All this information is depicted systematically in figure 5. I indicated which synonyms are admissible and which are dispraised – and why: *tpp* means ‘toto pro pars’, *tc* ‘terminological confusion’, and *wt* ‘wrong term’.
Where necessary, additional 'relative terminology' is introduced in the subsequent sections. See Appendix IV for a full overview.

Finally, some commonly used abbreviations are listed in (24).

(24) Some frequently used abbreviations regarding relative constructions:
- RC = relative clause
- ARC = appositive relative clause
- RRC = restrictive relative clause
- FR = free relative
- EHRC = externally headed relative clause
- IHRC = internally headed relative clause (used for circumnominal relatives)
- REL = relative element (i.e. a relative pronoun or particle)

A complete list of abbreviations can be found in Appendix I.

3. On the semantics of relative clauses: Grosu & Landman’s scale

The semantics of relative clauses is treated insightfully in Grosu & Landman (1998). Relative constructions can be put on a scale that weighs the importance of external and internal material for the meaning of the whole construction. Consider the scale depicted in (25), where the “sortal” of a relative construction is the semantic
equivalent of the head noun (which is not necessarily at the same position). The
dichotomy sortal-internal/external will become clear in a moment.

(25) Grosu & Landman’s scale

<table>
<thead>
<tr>
<th>sortal-external</th>
<th>sortal-internal</th>
</tr>
</thead>
<tbody>
<tr>
<td>(simplex XPs →) appositives → restrictives → maximalizers (→ simplex CPs)</td>
<td></td>
</tr>
</tbody>
</table>

A *simplex XP* has no modifying relative CP at all: there is only ‘external material’, hence the term *sortal* is meaningless here. Appositives and restrictives are truly sortal-external. This means that the semantic content of the head noun cannot be derived from material within the relative clause.

Regarding *appositives*, the external material (the antecedent) is more important than the relative clause, since the relative is anaphorically linked to the antecedent at a discourse level only (namely, by ‘cospecification’; cf. Ch6 and Sells 1985); hence the semantic relation is indirect. Obviously, this does not mean that a relative and its antecedent are syntactically unrelated. See Chapter 6 for more discussion on the syntax of appositives.

*Restrictives* are in the middle of the spectrum: both the internal and the external material is crucial.\(^{17}\) Again, the scale is a semantic scale. In principle, the semantic presence and importance of outside material does not necessarily coincide with the syntactic presence of external material. A relevant point in case are circumnominal relatives. At least some of them can have a restrictive meaning. That is, although the head noun is syntactically internal, it is semantically construed outside the relative clause.

The sortal-internal group contains relative constructions of which the content of the relative clause is more important than possible external material. Hence the external material can be semantically derived from the internal material. Grosu & Landman (1998:148) state: “if the head is semantically CP-internal, no semantically independent CP-external material is allowed”. So “the sortal and cardinality properties are fixed CP-internal” (ibid, page 127). Free relatives are clear instances of sortal-internal constructions.

The end of the scale is the *simplex CP*. Obviously, there is only CP-internal material. Since simplex CP’s are not relative clauses, they are not relevant here.\(^{18}\) Notice that free relatives contain an (implicit) head noun, hence there is a sortal, at least semantically. Normal free relatives are not simplex CPs; they are classified as maximalizers.

So, finally, there is the group of *maximalizers*. Here the internal material is most important. To a large extent, it determines the external material (if present), partly through a maximalization operation (to be explained below) – hence the name. The group of maximalizers can be split into several subtypes, among which

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\(^{17}\) The meaning of a restrictive relative construction is obtained by combining the meaning of the head noun and the relative CP through intersection, which is a symmetric operation.

\(^{18}\) However, there is one exception: Grosu & Landman (1998) argue that irrealis free relatives are bare CPs, contrary to normal (reals) free relatives, which are are DPs. See also section 6.3.
degree relatives, free relatives and correlatives. I will illustrate the concept using the first.

Degree relatives are non-restrictive, non-appositive relatives. They are first discussed as ‘relatives of a third kind’ in Carlson (1977), albeit under the name of amount relatives. Consider the Dutch and English example in (26). The presence of presentative er/there forces a degree reading instead of a restrictive reading.

(26) a. Ik bekeek de muizen die er in de kooi zaten.
   b. I looked at the mice that there were in the cage.

The example means that I looked at all mice in the cage – there are no other mice in the domain of discourse – not at the group of mice in the cage contrary to a possible free group of mice, which would be a restrictive reading, as in (27).

(27) a. Ik bekeek de muizen die in de kooi zaten.
   b. I looked at the mice that were in the cage.

If the trace of a relative pronoun or operator is an individual variable, sentences like (26) ought to cause an indefiniteness effect. This point can be shown directly if we use an English wh-pronoun as in (28); see also Carlson (1977), Heim (1982) and Grosu & Landman (1998).19

(28) I looked at the mice which (*there) were in the cage.

This indefiniteness effect can be by-passed if a degree reading becomes available. This is represented in (29).

(29) the mice that there were (d many mice) in the cage

The degree expression d many mice as a whole fits the indefiniteness context. The degree variable is bound by the relative pronoun or operator. It seems that English that but not which can bind a degree variable.20

The representation in (29) shows that the head noun mice is derivable from the content of the relative clause, which contains the more complex expression d many mice.21 Hence degree relatives are clear instances of sortal-internal constructions.22

19 A comparable contrast is: the mice that/*which were in the cage at all.
20 For unknown reasons the Dutch relative pronouns welke and die behave differently from English which; see (i). Hence die and welke can bind a degree variable.
(i) Ik bekeek de muizen welke/die er in de kooi zaten.
21 I follow Grosu & Landman (1998) in that the degree of x is not simply its cardinality |x|, but a triple <|x|, P, x> where P is the measure scale. This is important because a degree should keep track of what it measures. If not, one could not explain the unacceptability of, for instance, the hypothetical meaning of (29) expressed in (i).
(i) the mice that there were (d many rats) in the cage
22 A direct syntactic parallel to this semantics is a promotion analysis of degree relatives, and actually it is proposed by both Carlson (1977) and Grosu & Landman (1998).
The meaning of the relative clause is not simply a set of degrees compatible with its content. A maximalization operation is needed, too. For instance, if there are four mice in a cage, then it is also true that there are three or two mice in the cage. But this is not intended in (26). The sentence is only true if the maximum is taken: I looked at all mice there were in the cage. If so, it is predicted that only a subset of determiners is compatible with the head noun, see (30) and (31). These facts are due to Carlson (1977). Particular examples are mine.

(30) a. Ik bekeek {de/de vier/vier van de/de vele/de weinige/ *vier/*weinige/*vele/*enkele/*de meeste} muizen die er in de kooi zaten.
    b. Ik bekeek {elke/*geen} muis die er in de kooi zat.

(31) a. I looked at {the/the four/four of the/the many/the few/ *four/*few/*many/ *some */*most /} mice that there were in the cage.
    b. I looked at {every/any/*no} mouse that there was in the cage.

In general it seems clear that maximalization inside the relative leads to definite and universal DPs only. I refer to Grosu & Landman (1998) for formal semantic details.

Notably, these restrictions on determiners do not count for restrictives; compare the sentences in (32) and (33). Therefore they are a diagnostic for maximalization.

(32) a. Ik bekeek {sommige/enkele/vier} muizen die in de kooi zaten. [restr.]
    b. * Ik bekeek {sommige/enkele/vier} muizen die er in de kooi zaten. [max.]

(33) a. I looked at {some/few/four} mice that were in the cage. [restr.]
    b. * I looked at {some/few/four} mice that there were in the cage. [max.]

Another important diagnostic is that maximalizers do not stack, contrary to restrictives and appositives.\(^\text{23}\) This is illustrated in (34).

(34) a. Ik bekeek de muizen die er in de kooi zaten
    (* die er-gisteren vrij in huis rondliepen).
    b. I looked at the mice that there were in the cage
    (* that there had been freely walking in the house yesterday).

Both relatives are acceptable if attached to the head noun alone, but not in combination. This is understandable, since the sortal cannot be interpreted RC-internally at two places the same time. Moreover – given that i) the semantics of stacking involves set intersection; ii) maximalization creates a singleton set (i.e. a set with one member) – stacking of degree relatives would lead to intersection of two singleton sets, which is a semantically vacuous operation because the result is either empty or identical. On the other hand, intersection of non-singleton sets is a logical possibility, hence stacking of restrictives (where there is no maximalization) is

\(^{23}\) Without er/there the relative clauses in (34) are restrictive, hence stacking is acceptable.
acceptable. Stacking of appositives is also possible, because there can be more than one anaphoric relation with respect to one antecedent. More on stacking follows in section 7.3 and Ch6.

Given the concepts of sortal-internal interpretation, maximalization and their diagnostics, I will briefly indicate the types of relative clauses that fit this pattern. First, there are the *substance degree relatives*, as illustrated above. Next to these, there are *quantity degree relatives*, e.g. (35) or (36).

(35) Er valt niet op te planten tegen de bomen die ze elders omhakken.
    there is not up to plant against the trees which they elsewhere down.chop

    ‘It is impossible to plant the amount of trees that is elsewhere chopped down.’

(36) Je kunt dagelijks een container vullen met het papier dat hier verspild wordt.
    you can daily a container fill with the paper which here wasted is

In (35) and (36) it is the amount of trees or paper that is relevant in the matrix clause, not the actual trees or paper that the relative mentions. If (36) is taken more literally, it may also get a substance degree reading.

Similar to degree relatives are *kind relatives* (cf. Heim 1982), as illustrated by the examples in (37).

(37) a. Bush is not the politician that his father was.
    b. De typmachines die er vroeger waren veroorzaakten geen muisarmen.
        the typwriters which there in.the.past were caused no mouse.arm.s

Next, Grosu & Landman (1996) analyse data from Rothstein (1995) that involves quantification over events, as undergoing relative maximalization, too. If true, these may be called *event relatives.* Examples are given in (38).

(38) a. Every (/*no) time {that/*when/*which} the bell rang, I opened the door.
    b. De keren dat er iemand op bezoek kwam, leefde mijn tante op.
        the times that there somebody on visit came, revived my aunt.

24 Although this construction fits the diagnostics, I am not sure if it is a relative construction at all. In Dutch ‘every time that’ is: *elke keer dat...*, but there is a clear mismatch between the relative pronoun *dat* and *keer*. (Recall that standard Dutch has no relative complementizers.) Since *keer* is non-neuter, it should be *de keer die*, but that is impossible. Moreover, *dat* as a relative pronoun is generally replaceable by *wat*, but *de keer wat* is clearly out. So perhaps *de keer dat*... is a noun plus complement construction (where *dat* is a complementizer), similar to the fact that..., the claim that..., etc. Since a noun has one complement, stacking is impossible. Obviously, a relative pronoun like *which* is out because there is no relative gap. (However, notice that *which* is impossible anyway because *time* is not pronominalizable.) Against this view is the fact that a complementizer cannot be left out in noun-complement constructions in English: *the fact {that/*o}*, contrary to relative constructions. The event sentence patterns with the relatives in this respect. Concerning the determiner restrictions, the meaning of (38) indeed points to maximalization. However, maximalization is independent of relativization. For instance, it occurs in comparatives like *this elephant is bigger than any mouse* is (cf. Rullmann 1995). So the question is if maximalization can also take place in non-relative complements of nouns, or that other factors lead to comparable results in this respect. This question falls outside the scope of this book.
This concludes my discussion of degree relatives and closely related sentence types.

There are also syntactically distinct constructions that are relevant here. *Correlatives* are subject to a maximalization operation, too. This is shown by using the diagnostics concerning determiner restrictions and stacking in the Hindi examples in (39) and (40), taken from Grosu & Landman (1998:164/5).

(39) [jo laRke KhaRe hai], ve/dono/sab/*do/*kuch/*adhiktam lambe haiN.
    wh boys standing are those/both/all/*two/*few/*most tall are
    lit. ‘Which boys are standing, they/both/all/*two/*few/*most are tall.’

(40) [jo laRkii KhaRii hai] [* jo ravi ii kii dost hai], vo bahut lambii hai.
    wh girl standing is wh Ravi GEN friend is DEM very tall is
    ‘What girl is standing, [* who is Ravi’s friend], she is very tall.’

Hence correlatives are sortal-internal relatives. Notice that they are also syntactically head-internal (although the correlate may contain a copy of the head noun).

Finally, free relatives are sortal-internal. Stacking is impossible; see (41) for instance. Both free relatives are correct by themselves, but the combination is false.

(41) * Jill likes [whatever I give her] [whatever is green].

There are no overt determiners, but the interpretation is either definite or universal (see e.g. Jacobson 1995). This proves that maximalization is involved. Note that a free relative can also have a degree reading, e.g. (42).

(42) Wat er op tafel ligt aan giften, is onvoldoende.
    what there on table lies as.for donations, is insufficient

What is ‘insufficient’ in (42) is the *amount* of donations. The sentence can have a quantity reading (metaphorical) or a substance reading (literal).

This concludes a short overview of semantic types of relative clauses. Some important results are summarized in table 2.

**Table 2.** *Semantic types of relative clauses and their properties, based on Grosu & Landman (1998).*

<table>
<thead>
<tr>
<th>property</th>
<th>semantic type →</th>
<th>sortal-external</th>
<th>sortal-internal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>appositives →</td>
<td>restrictives →</td>
</tr>
<tr>
<td>stacking</td>
<td></td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>determiners</td>
<td></td>
<td>all types</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The next step is to determine which syntactic structures correspond to which semantic types. (Grosu & Landman (1998) are not very explicit about this.) I have mentioned the maximalizing nature of free relatives and correlatives, and I have shown that postnominal relatives can be of many semantic types. The following
Table summarizes possible mappings between syntactic and semantic types. For completeness’s sake I included information on the lacking syntactic main types here: circumnominal and prenominal relatives. These are discussed further in Chapter 4.

Table 3. Mapping between syntactic and semantic types of relative clauses.

<table>
<thead>
<tr>
<th>syntactic type</th>
<th>semantic type</th>
<th>appositive</th>
<th>restrictive</th>
<th>maximalizing</th>
</tr>
</thead>
<tbody>
<tr>
<td>postnominal</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>prenominal</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>circumnominal</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>correlative</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>free relatives</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>

Here a plus means that the combination exists; a minus that it does not. Recall that free relatives can be of any syntactic main type, i.e. postnominal, prenominal, circumnominal, or correlative (see section 6.3). The maximalizing group can be split into several semantic subtypes. Clearly, more research is necessary on this issue.

4. Lehmann’s functional classification of relative constructions

According to Lehmann (1984), there are five main types of relative clauses: prenominal, postnominal, circumnominal, correlative and extraposed. These main types are related in the way figure 6 suggests:

---

25 Maximizing postnominal and prenominal relatives are degree relatives, for instance.

26 Prenominal appositive relatives are marginal at best. Lehmann (1984:277/8) states that they are probably restricted to proper names. In Basque they are preferably postponed. Turkish uses a postnominal or extraposed (finite) variant especially for appositives. In De Vries (2000a) I predicted that they cannot exist, if I am correct that apposition is specifying coordination. This can be maintained if what seem to be appositive prenominal RCs are really free relatives followed by a specifying name, comparable to e.g. [she who is our director], (viz.) Jill... See further Chapter 6.

27 Appositive circumnominal RCs are marginal, too. Lehmann (1984:278) states that they do not occur, except that there are examples from Mohave; but these always have a sentence-initial head noun, which makes them suspect. The same is the case for the rare examples Culy (1990:251-254,256) provides for Dogon and Japanese. Again, given the idea that apposition is specifying coordination, it follows that appositives cannot be circumnominal.

28 Grosu & Landman (1998) explain why correlatives must be maximalizing. Lehmann’s (1984:279) examples of would-be correlative appositive free relatives are parenthetical sentences in my view. For instance, they can be interjected at any position in the sentence. This would not be possible if they were true correlatives.

29 In fact, Lehmann uses the term vorange stellt ‘preposed’ instead of correlative. Wherever relevant, I use the standardized terminology advocated for throughout this book (cf. section 2.5). At some points it deviates from Lehmann’s terms.

30 I do not acknowledge extraposed relatives as a separate main type; see Chapter 7.
Figure 6. *Main types of relative clauses (Lehmann 1984:149)*

<table>
<thead>
<tr>
<th>relative type</th>
<th>correlate</th>
<th>extrapoed</th>
<th>circumnominal</th>
<th>prenominal</th>
</tr>
</thead>
<tbody>
<tr>
<td>correlate —</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>circumnominal \</td>
<td></td>
<td></td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>prenominal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>extrapoed —</td>
<td>no</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>postnominal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Correlative and prenominal relatives are diametrically opposed. Circumnominals are somewhere in between. Postnominal relatives are clearly related to prenominals on the one hand, and to extrapoed relatives on the other hand, which in turn are connected to correlatives. This is based on some essential properties concerning relativization; see table 4. (The explanation follows directly below).

Table 4. *Absolute properties of main types of relative clauses, compiled from Lehmann (1984).*

<table>
<thead>
<tr>
<th>Property</th>
<th>Correlative</th>
<th>Extrapoed</th>
<th>Circumnominal</th>
<th>Prenominal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominalization of RC (yes/no)</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>
| RC is satellite to \  
| \  
| \  
| \  
| N_{rel} or S_{matrix}                       | S           | S         | -             | N          |
| N_{rel} is present in RC (yes/no)           | yes         | no        | yes           | no         |
| RC is open or closed \  
| \  
| \  
| \  
| \  
| (variable or N)                             | closed      | open      | closed        | open       |
| Gap/quasi-anaphor in RC represents N_{rel} \  
| \  
| \  
| \  
| \  
| or anaphor in S_{matrix}                    | anaphor     | gap       | -             | gap        |
| represents N_{rel}^RC                         |             |           |               |            |

Embedded relatives (prenominal, postnominal, circumnominal) are nominalized, that is, the head noun and the relative are combined in a higher nominal projection (DP_{rel} in my terms); co-relatives (correlative, extrapoed) are not.\(^{31}\) According to Lehmann, co-relatives are satellites of the higher clause, adnominal relatives are satellites of N_{rel} (but see the following chapters for a more precise characterization). Circumnominal relatives are neither: they are a constituent of the matrix clause. Finally, the presence or absence of the head noun in the relative clause directly anti-correlates with the presence of a bound variable.

At this point I need to expand on the picture in figure 6. Notably, it is not circular, but linear with a vertical dimension added to it. From left to right there are three groups: i) correlative + extrapoed, ii) circumnominal + postnominal, and iii) prenominal.\(^{32}\) The usefulness of this way of representing things will become clear if we look at some further properties. Importantly, these are not absolute (as in table

---

\(^{31}\) The fact that circumnominal relatives are nominalized may not be immediately obvious. See section 6.2.

\(^{32}\) From this perspective I would draw a vertical line between circumnominal and postnominal in figure 6, but that is not how Lehmann represents it.
4), but scalar tendencies. See table 5, where SR means 'subordinator'. Notice that the scales do not represent continuous functions, but step functions.

**Table 5. Scalar properties of main types of relative clauses, compiled from Lehmann (1984).**

<table>
<thead>
<tr>
<th>scale</th>
<th>prenominal</th>
<th>postN : circumN</th>
<th>extraposed</th>
<th>correlative</th>
</tr>
</thead>
<tbody>
<tr>
<td>nominalization</td>
<td>strong</td>
<td>medium</td>
<td>weak</td>
<td></td>
</tr>
<tr>
<td>phenomena</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>subordination</td>
<td>affixal SR</td>
<td>final SR</td>
<td>initial SR</td>
<td>relative pronoun</td>
</tr>
</tbody>
</table>

This can be explained as follows. Nominalization leads to nominalization phenomena, which can be put on a scale from weak to strong (cf. Lehmann 1984:168-173). The phenomena involved are: limitations in sentence type (illocutional) → modal limitations → temporal/aspectual limitations → implicit subject → infinite verb form → genitive (oblique) subject → limitations in possible complements. Regularly, prenominal relatives show strong nominalization phenomena: often there is a nominalizing affix, there can be temporal and modal limitations, etc. This is much less so for correlatives.

The subordination scale is anti-correlated with the nominalization phenomena scale. It indicates which element functionally represents the fact that the relative clause is subordinated (if there is such an element at all). In prenominal relatives there is often only a verbal affix which has this subordinating function. On the other edge of the scale are correlatives, which often have a relative pronoun. (According to Lehmann subordination is one of the possible functions of a relative pronoun. I will argue differently in Chapter 5.) A sentence-initial subordinator, i.e. a relative complementizer is often found in postnominal relatives. I will return to relative elements in a moment.

The patterns in table 5 can be put in a 3-dimensional graph, where the main relative clause type according to figure 6 is on one axis and the nominalization phenomena and subordination scales are on the others. Then the relativization strategy of a language is a point in this 3-dimensional space. If the correlations indicated were perfect, all points would be on the grand hypotenuse from {prenominal, strong, gap} to {correlative, weak, rel. pronoun}. However, this is not exactly so; there is much scatter, since table 5 only represents scalar tendencies. Hence the points in the graph are like the stars in an E6 galaxy (according to the Hubble sequence) with its axis along the hypotenuse mentioned. See also Lehmann (1984:172).

The main types of relatives can be put on yet another scale: attribution, which indicates how tightly the relative is attributed to the head; see table 6. (On the same scale, leftward of correlative is e.g. predication; rightward of prenominal are adjectives, compounds, etc.) I have indicated a subscale in the postnominal and prenominal department, where RP, RC, RA and Ø mean 'relative pronoun', 'relative complementizer', 'relative affix' and 'gap', respectively.

<table>
<thead>
<tr>
<th>property</th>
<th>correlative/extraposed</th>
<th>circumN</th>
<th>postnominal</th>
<th>prenominal</th>
</tr>
</thead>
<tbody>
<tr>
<td>attribution scale</td>
<td>loose $\rightarrow$ medium $\rightarrow$ tight</td>
<td>identification $\rightarrow$ concept building $\leftarrow$ ease of dissociation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Post- and prenominal relatives have an explicit nucleus, the others need an operation of ‘nucleus building’ in Lehmann’s terms. Within the adnominal group there is a (weak) correlation with a scale of identification (which indicates appositive relativization in this context) through concept building (restrictive relativization). There is also an anti-correlation with ‘ease of dissociation’ of the head and the relative clause, i.e. the (im)possibility of extraposition and the interference of other attributes.

The more explicit the attribution, the more implicit the (quasi-)anaphor can be. Postnominal, prenominal and extraposed relatives have the anaphor in the relative, correlatives in the matrix clause.33 See table 7. Here free pronouns are relative (wh-moved) pronouns or resumptive (in situ) pronouns.

Table 7. Attributivity and the anaphoric scale, from Lehmann (1984).

<table>
<thead>
<tr>
<th>correlative/extraposed</th>
<th>circumnominal/postnominal</th>
<th>prenominal</th>
</tr>
</thead>
<tbody>
<tr>
<td>(implicit) $\rightarrow$ attributivity $\rightarrow$ (explicit)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(explicit) $\leftarrow$ anaphoric scale $\leftarrow$ (implicit)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NP $\leftarrow$ free pronoun $\leftarrow$ pronominal affix $\leftarrow$ verbal agreement $\leftarrow$ gap</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hence relative pronouns are likely in extraposed relatives, but not (in fact, impossible) in prenominal relatives. On the contrary, verbal agreement or a gap is common in prenominal relatives but not in correlatives. Compare the subordination scale in table 5.

At this point it is possible to give Lehmann’s general definition of relative clauses. The translation (from German) is mine.

(43) Definition of relative clauses according to Lehmann (1984:401)

“A clause is a relative clause if the operations of Subordination/Nominalization, Anaphor/Gap Construction, and Attribution/Nucleus Building have been applied to it; and the closer to the middle of the scales the effect of the three operations involved is, the more of a relative clause it will be.”

---

33 It is not entirely clear to me how the function Anaphor/Gap Construction relates to circumnominal relatives. One might say that the ‘gap’ is filled with the head NP, hence they are on the edge of the lower scale in table 7. Anyway, a variable is constructed semantically (cf. Grosu & Landman 1998), hence there is construction of a gap at this level.
This definition is in terms of grammatical functional scales. In fact, apart from the specific terminology, it is close to the definition I have given in section 2.1.

If Lehmann's subordination and anaphoric scales are combined, we get a more concrete 'relative elements scale'. I show this in table 8.

Table 8. The relative elements scale.

<table>
<thead>
<tr>
<th>scale</th>
<th>prenominal</th>
<th>postN : circumN</th>
<th>extraposed : correlative</th>
</tr>
</thead>
<tbody>
<tr>
<td>relative elements</td>
<td>gap → relative affix → rel. complementizer → rel./demonstr. pron.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Relative elements are discussed further in Chapter 5.

Finally I would like to mention Lehmann's syntactic function hierarchy, depicted in figure 7. This hierarchy is used to indicate which syntactic positions internal to a relative clause are available to the relative head in a particular language. Notice that there are no known limitations to the external role of the head, i.e. the syntactic position in the matrix clause. Lehmann's hierarchy is an extension of Keenan & Comrie's (1977) accessibility hierarchy. It consists of four related scales of adverbal, adnominal and other functions. In figure 7 the scales are vertically represented. The position of a particular language in this hierarchy can be represented by drawing an imaginary horizontal line.

Figure 7. Syntactic function hierarchy, from Lehmann (1984:219).

With respect to this hierarchy, several conclusions can be drawn:

- If a language can assign a syntactic function x to the representative of the head in a relative clause, then it can assign all functions higher than x.
- Languages only use a subset of the hierarchy for relativization.
- The size of this subset anti-correlates with the grade of nominalization of the relative construction (i.e. in general co-relatives can be used for more – hence lower – syntactic functions than prenominal relatives).

---

34 So in a way the hierarchy is an ordering of language-dependent (sub-)limitations on wh-movement.
If a language uses a resumptive pronoun as the representative of a head with syntactic function \(x\) in a relative clause, then it uses resumptive pronouns for all functions lower than \(x\).

There are a few exceptions to these statements. Hence they must be considered universal tendencies rather than universal laws. For further discussion, see Lehmann (1984).

In response to Keenan & Comrie (1977) and Dik (1997), Bakker & Hengeveld (2001) argue that the accessibility hierarchy should have three dimensions: syntactic function, semantic function and embeddedness. They follow Dik’s critique that many languages do not have clearly defined subjects or objects, and that other syntactic functions are ill-defined anyway. The results are given in (44).

(44) The accessibility hierarchy according to Bakker & Hengeveld (2001):

- Syntactic function: Subject > Object > other
- Semantic function: Arg-1 > Patient > Recipient > Beneficiary > other
- Embeddedness: non-Possessive > Possessive
  [generalized to: non-embedded > embedded]

Unfortunately, Bakker & Hengeveld do not address Lehmann’s much more fine-grained hierarchy, which incorporates embedded functions and the absolutive/ergative system. Nevertheless I think that they may be right in claiming that a semantic function scale plays a role, too – at least as a subdivision of the overall syntactic function hierarchy presented by Lehmann, and possibly even more prominently.

5. Downing’s universals and general implications

Downing (1978) discusses universal properties and tendencies concerning restrictive relative clause constructions. Here I will state some important ones, in my terms, with several additions and corrections. Downing (1978:411) concludes: “The generalizations which have been stated in this paper [...] are subject, of course, to modification or refutation on the basis of additional language data.” At present much more data are available than in 1978; therefore this section tries to supplement Downing’s work.\(^{36}\)

Claims from Downing are referred to in the format D-X:Y, where X is the letter (combination) referring to Downing’s (1978) own alphabetical ordering and Y

---

35 *Patient* is comparable to *Goal* in Dik’s terms. In Functional Grammar Arg-1 is a collective name for a number of semantic functions that can act as the only argument of a one-place predicate, or as the ‘most central’ argument of a more-place predicate. These are: Agent, Positioner, Force, Processed, Zero.

36 See also Appendix II for an overview of properties of relative constructions in a large sample of languages. As discussed there, the sample is not balanced – neither is Downing’s – therefore precise statistical conclusions cannot be drawn. Nevertheless, the sample contains information from many different language families, which suffices for the present purposes.
can be AU: absolute universal, GT: general tendency, IU: implicational universal, or IT: implicational tendency. Again, I do not cite literally, unless indicated specifically. Claims not from Downing are also provided with an AU/GT/IU/IT label. Claims without reference are mine. Refuted, disputable or weak claims are preceded by stars and/or question marks.

A. **In general:**

A1. *All languages use relative clauses* (D-A:AU). This is confirmed by Lehmann (1984). Problematic is perhaps that a few relative types on the edges of Lehmann’s scales (i.e. very non-typical relatives) are hardly recognizable as such. It is claimed, e.g. by Bakker & Hengeveld (2001), that Hixkaryana (Ge-Pano-Carib) does not have relative clauses, but this assumption is denied by Lehmann (1984:401). I am not sure if the disagreement is a matter of definition only. Anyway, A1 is certainly true as a general tendency. See further B below.

A2. *Most languages use free relatives* (GT, Lehmann 1984). This is plausible, since free relatives are only a syntactic variant of headed relatives (although the semantics can be different; recall section 3 again). Known exceptions are Japanese, Djirbal and Bambara.

A3. *For all languages: prenominal RCs then no correlatives (hence correlatives then no prenominal RCs)* (D-Z:IU). [The prenominal and correlative strategy exclude each other.] This is simply not true: see Appendix II, table 26. Counterexamples are e.g. Hurric, Sanskrit, Tamil, Kannada.

B. **Concerning the semantics:**

B1. *If a language has relatives, it has restrictive relatives* (D-A:IU). This statement seems to be undisputed, but it is partially incorrect. If Grosu & Landman (1998) – treated in section 3 above – are basically correct, correlatives, for instance, are maximalizing (not restrictive). Hence B1 must be revised as B1’:

B1’. *If a language has relatives, it has restrictive or maximalizing relatives* (IU). Downing’s idea that appositives are less basic is true, of course. In other words: if a language has appositives, it also has restrictives – but not necessarily the other way round.

Question: do most languages use appositive relatives? Obviously, many do – appositives are found in languages from very distinct families. But the answer is no: the semantics of appositives is hardly compatible with the correlative, the circumnominal and the prenominal strategy (cf. section 3, table 3 and Chapter 6). Hence only postnominal relatives can have a true appositive strategy:

B2. *If a relative is semantically appositive, it is syntactically postnominal* (IU). Question: do all (or most) postnominal relatives allow for an appositive reading? My guess is: yes; but the answer is unknown, really.

---

37 In fact, Downing’s statement D-A:AU is “all languages make use of restrictive relative clauses”. I have split it up in A1 and B1, because B1 must be revised as B1’.
C. **Concerning word order:**

C1. ?* For most languages: postnominal RC ↔ VO (D-B:IT). [If and only if relative clauses are postnominal, the basic word order is verb-object.] This claim is not correct, or at least the tendency is very weak. Appendix II, table 24, contains a large list of postnominal relatives in OV and other non-SVO languages. Some counterexamples are Hopi, Bora and Farsi. Concerning the inverse implication: Appendix II, tables 21-23, lists several VO languages with non-postnominal (i.e. circumnominal, correlative or prenominal) relatives, e.g. Dagbani, ancient Greek, Mandarin Chinese and Palauan.

C2. ? For most languages: prenominal RC → OV (D-O:IT). [Prenominal relatives occur in verb-final languages only.] The tendency is not very strong. Exceptions are in Appendix II, table 23, e.g. Mandarin Chinese, Palauan, and Finnish.

C3. * For all languages: correlative → OV (D-Y:IU). [Correlatives occur in verb-final languages only.] This is not a correct universal. Appendix II, table 22, lists two counterexamples: ancient Greek and Medieval Russian. Nevertheless, C3 may be reformulated as an implicational tendency:

C3. ‘ For most languages: correlative → OV (IT).

C4. * For all languages: circumnominal RC → OV (D-V:IU). [Circumnominal relatives occur in verb-final languages only.] Again, this is not a correct universal, which is also stressed by Culy (1990), given the counterexamples in Appendix II, table 21, e.g. Mooré, Dagbani and ASL. The statement may be reformulated as a weak tendency:

C4. ‘ For most languages: circumnominal RC → OV (IT).

D. **Concerning postnominal relatives:**

D1. For all languages: the head noun is not fully repeated in a postnominal relative (D-D:IU). [So we have *N[...N...].] This is correct; see Appendix II, table 7. Notice that there are some rare cases with an epithet NP in appositive relatives; see Chapter 6.

38 Just for clarity a note on equivalences and notations in first order logic:

A if and only if B = A ↔ B = A iff B
A if B = B → A = (if) B then A [B is a sufficient condition for A]
A only if B = A → B = only if B then A [≠ B → A, B is not a suff. cond. for A]

39 Notice that C2 does not imply OV → prenominal RC, which is correct since the correlative and circumnominal strategy occur in OV languages, too.

40 Another suggestion from Downing is that if the word order is not OV, there must be a clause-final marker (D-S:IU), e.g. *de in Chinese. There is no other example, except perhaps in Tagalog. Finnish could be a counterexample, again, but this is a participial strategy. It seems to me that at present there is not enough data to support any claim concerning the prenominal strategy in non-SOV languages.
D2. For all languages: relative pronouns are sentence-initial (although they are sometimes embedded in a PP or NP) (D-F:IU). In other words: relative pronouns are wh-moved. This property has become the definition of relative pronouns (which contrasts with resumptive pronouns), so it is not surprising that it is a universal. Nevertheless there are exceptions of relative pronouns (with a question word format) in situ, viz. in the (closely related) languages Bambara, Maninka, Mandinka and Vai. Thus perhaps the universal is a tendency after all.

D3. For most languages: a relative pronoun excludes a resumptive personal pronoun (D-E:IT). Actually this should be a universal. See Chapter 5, sections 3.2 and 4.2, and Appendix II, tables 8 and 9. The Rumanian counterexample Downing notes involves clitic doubling (cf. Smits 1988:56-60). Hence D3 can be reformulated as D3':

D3.' For all languages: a relative pronoun excludes a resumptive pronoun or clitic (IU).

D4. For most languages: a subject relative demands a sentence-initial relative element (D-C:IT): zero relativization is disallowed if the gap is the subject. This is true for some Germanic languages, but as a general linguistic generalization it is wrong. Several languages even use zero relativization as a main strategy, e.g. Lakota and Yucatecan (cf. Lehmann 1984:80-85). See Appendix II, table 15, for a list; and Ch5§3.1 for more discussion.

E. Concerning prenominal relatives:

E1. For all languages: the head noun is not fully retained in a prenominal relative (D-Q:IU). [Hence *[...N...] N.] This is correct, cf. Appendix II, table 5.

E2. For all languages: prenominal RC→ no relative pronoun (D-P:IU). [There are no relative pronouns in prenominal relatives.] Correct, cf. Appendix II, tables 5 and 8. We may add to this:

E3. For most languages: prenominal RC→ no resumptive pronoun (IT). [Prenominal relatives do not use resumptive pronouns.] Exceptions are Chinese and Nama. See Appendix II, tables 5 and 9.

E4. For all languages: prenominal RC→ no initial complementizer (IU). [Prenominal relatives do not use sentence-initial (relative) complementizers.] See Appendix II, tables 5 and 10.

E5. For all languages: prenominal RC→ SR_{f,rel} \neq SR_{f,comp} (IU, Keenan 1985). [A clause-final relative particle never equals the normal complementizer of sentential complementation in prenominal relatives.] Probably correct.

---

41 These languages disprove D-L:IU: "If a language uses relative pronouns of interrogative form in ad-relative clauses, then in that language interrogative pronouns are placed in initial position in questions."

42 Notice, however, that a mysterious construction with a doubled head noun has been reported for Hewa (Givón 1984) and Diegueño (Culy 1990). Further data and analysis are necessary before conclusions can be drawn here.
F. Concerning circumnominal relatives:

F1. For all languages: circumnominal relative → head-internal (IU). In fact, this is part of the definition. The internal head is not always in situ. See section 6.2, Ch4§5 and Appendix II, table 3.

F2. For all languages: a language has circumnominal relatives only if it has at least one other type of nominalized sentences with the same morphological properties (IU, Culy 1990:203). See section 6.2 and Ch4§5.

F3. For all languages: circumnominal → no relative pronoun (IU). See Appendix II, tables 3 and 8.

F4. For all languages: circumnominal → no resumptive pronoun (IU). See Appendix II, tables 3 and 9.

F5. For all languages: circumnominal → no relative complementizer (IU). See Appendix II, tables 3 and 10. One possible exception is Dagbani, however.

F6. ?? For all languages: if there is a clause-final 'relative marker', there is a prenominal strategy with the same clause-final marker (D-W:IU). This can be checked by comparing tables 3 and 5 in Appendix II. It is correct for Quechua, Hopi, etc. A 'relative marker' must be understood as a relative suffix on the verb. There is one clear counterexample: Japanese. Hence we can reformulate F6 as a tendency:

F6′. For most languages: if the circumnominal strategy uses a clause-final relative affix, there is a prenominal strategy with the same affix (IT).\(^{43}\)

F7. For all languages: if the external determiner of a circumnominal relative construction is visible, it follows the RC (IU, Culy 1990). See Appendix II, tables 3 and 18.

F8. For all languages: the internal head of a circumnominal relative is indefinite (IU, Williamson 1987; Culy 1990). See also Ch4§5.

G. Concerning correlatives:

G1. For all languages: correlative → internal head (IU). The internal head is almost always fronted. See section 6.1, Ch4§6 and Appendix II, table 4.

G2. For most languages: correlative → relative pronoun (IT). See Appendix II, tables 4 and 8. Exceptions are e.g. Diegueño and Wappo.

G3. For most languages: correlative → no relative complementizer (IT). See Appendix II, tables 4 and 10. Exceptions are Gaididj and Warlpiri.

G4. For all languages: correlative → no relative affix (IU). See Appendix II, tables 4 and 12. One possible exception is Hurric, however.

G5. For all languages: correlative → maximalizing (IU, Grosu & Landman 1998). [Correlatives have a maximizing semantics.] See section 3 above.

\(^{43}\) There is no support for yet another claim: "If a relative marker is attached to Rel NP in a replacive relative clause, Rel NP is not moved to the beginning or the end of the clause by any process of relativization." (D-X:IU). It is based on only one example, Bambara, which is shown to be wrongly analysed by Culy (1990:30-36).
H. Concerning participial relatives:
H1. *For all languages: participial relatives are prenominal (D-U:IU, implicit). This is not correct: there are postnominal participial relatives in several languages. See Appendix II, table 6. Some examples are Djirbal, Greenlandic, Ute and Lushai.
H2. *For all languages: participial relatives are restricted to subject relatives (D-U:IU). According to Downing a special strategy is used if the head noun is not a subject, e.g. a possession strategy. However, not all languages with participial relatives use a special strategy in the sense Downing indicates, e.g. Telugu, cf. Lehmann (1984:49-58). In my view a complete participial strategy (which indeed exists) presumes the possibility of non-subject relatives. Moreover, the use of specific strategies in order to deal with possible recoverability problems does not alter the fact that the relevant examples are participial non-subject relatives. Nevertheless, since many languages (including English) allow for an incomplete participial strategy that is restricted to subjects, we may claim the following:
H2'. For most languages: independently of other relative strategies, there is an incomplete participial strategy that is restricted to subjects (GT).

I. Concerning extraposition:
I1. For all languages: “if a language has both postnominal and extraposed relatives, the internal structure of the relative is the same in both positions” (D-CC:IU).
I2. For all languages: extraposed → adnominal RCs or correlatives (D-II:IU). [If a language has extraposed relatives, then it also has adnominal or correlative relatives.] It may be possible to reduce extraposition to other strategies; i.e. they are not an independent type.45

J. Concerning combinations of relative elements:
J1. Relative pronouns and resumptive pronouns exclude each other (IU). [Repeated from D3 above.] See Ch5§4.2 and Appendix II, tables 8 and 9.
J2. Relative pronouns and relative affixes exclude each other (IU). See Ch5§4.2 and Appendix II, tables 8 and 12. However, Hurric is a possible counterexample.
J3. Relative complementizers and relative affixes exclude each other (IU). See Ch5§4.2 and Appendix II, tables 10 and 12.

In general one may say that the more data becomes available, the less universals can be maintained. However, there are many interesting tendencies, and there are a

44 Combined with the word order correlations mentioned in C, this leads to:
D-GG:IU (OV & extr.) → (preN ∨ corr)
D-IH:IU (VO & extr.) → postN
However, given that the word order correlations are (weak) tendencies only, these implications are probably not universals, but tendencies, too. I do not have clear information on this matter.

45 Downing himself (1978) does not believe so, because i) there are sentences with split antecedents; ii) extraposed relatives may look like adverbial clauses in some languages. I do not consider these to be valid arguments. See further Chapter 7.
number of universals that demand an explanation. I will return to some of them in the subsequent chapters.

6. Special types of relative clauses

This section is a short introduction to some special types of relative clauses: correlatives, circumnominal relatives, free relatives, adverbial relatives, non-finite relatives, and cleft and pseudo-cleft sentences, to be treated in separate subsections. Only the first two, correlatives and circumnominal relatives, will be discussed in some detail in this book. The others are listed in order to complete the picture.

6.1. Correlatives

A Hindi example of a correlative is repeated in (45).

(45) [[jo laRke KhaRe hai], ve lambe haiN.
wh boys standing are those tall are
lit. ‘Which boys are standing, they are tall.’ = ‘The boys who are standing are tall.’

The syntactic structure is sketched in (46).

(46) [matrix [CP-correl [DP-rel wh NP], ... t, ...] [matrix ... Dem ...]]

I have mentioned five basic properties of correlatives before:

(47) Some basic properties of correlatives:
   a. The head is internal.
   b. The semantics is maximalizing.
   c. They are left-joined to the matrix clause.
   d. The matrix contains a personal or demonstrative pronoun (the correlate) that refers to the modified relative head.
   e. They are not nominalized (i.e. not DPs), but they are bare sentences.

The assumption that correlatives are bare sentences in (47e) is stressed by several authors, e.g. Keenan (1985:164). It is proved by the facts in (48).

(48) a. Correlatives do not occur in DP positions.
   b. Correlatives never have an external determiner.
   c. Correlatives never have an external Case ending or another nominal marking.
   d. Correlatives never have an external (affixed) adposition.

Thus correlatives show no signs of ‘DP-hood’. This contrasts with circumnominal relatives. Hence a correlative cannot be a left-extraposed circumnominal relative.
The syntax of the correlative strategy is treated in more detail in Chapter 4, section 6. On possible secondary correlative strategies and the transition to free relatives, see section 6.3.2 of this chapter.

6.2. Circumnominal relatives

Circumnominal relatives have the structure sketched in (49).

\[(49) \quad \text{matrix} \ldots \text{DP} \left[ \text{CP} \ldots \text{NP}_{\text{rel}} \ldots \right] \text{D} \ldots \]

A Mohave example is given in (50), taken from Lehmann (1984:111). Notice that it is ambiguous.

\[(50) \quad \text{[Hatcoq } ?a\text{-}\text{u}\text{ta}v\text{-m } n\text{-}\text{萄}\text{-c } n\text{a\text{a}i}\text{ti}\text{f\text{-p}}} \text{.}
\text{[dog } \text{stone-INST SBJ.1-hit}\text{-DEF-NOM black-REAL }
\text{‘The stone with which I hit the dog was black.’ or }
\text{‘The dog which I hit with the stone was black.’}
\]

Essential properties mentioned so far are the following:

\[(51) \quad \text{Some basic properties of circumnominal relatives:}
\begin{align*}
\text{a.} & \quad \text{The head is internal.} \\
\text{b.} & \quad \text{The semantics is maximalizing or restrictive.} \\
\text{c.} & \quad \text{The internal head is indefinite.} \\
\text{d.} & \quad \text{There are no relative elements, except relative affixes.} \\
\text{e.} & \quad \text{They are nominalized (i.e. DPs).}
\end{align*}
\]

The last point is stressed by many authors, e.g. Culy (1990) or Keenan (1985:161). It is proved by the following facts, which contrast with correlatives – cf. (48) above:

\[(52) \begin{align*}
\text{a.} & \quad \text{Circumnominal relatives occur in DP positions.} \\
\text{b.} & \quad \text{There can be an external determiner.} \\
\text{c.} & \quad \text{There can be an external Case marker.} \\
\text{d.} & \quad \text{There can be an external adposition (e.g. a locative postpositional suffix).}
\end{align*}
\]

Of course (52b-d) is language-dependent: not all languages have overt determiners, etc.

There are a few misconceptions on circumnominal relatives, which, unfortunately, are often cited. For instance, Cole (1987) argues that circumnominal relatives occur only in those languages that are OV and that licence pro drop. These assumptions are proven wrong in Culy (1990); cf. C4 in section 5 above. See further Chapter 4, section 5.
Free relatives are relatives without an overt nominal head. All syntactic main types of relatives can be construed as a free relative. This is illustrated in (53). Example (53a) is Malagasy, taken from Lehmann (1984:97), (53b/c) are Lahu resp. Yavapai, from Lehmann (1984:295), and (53d) is Hittite (Lehmann 1984:124).

(53) a. Saka [izay tia trondo].
   cat REL loves liquor
   ‘Who loves liquor is a cat.’

   wrong write PERF NR are many probably
   ‘There are probably many wrongly written ones.’

c. [Kuʔu puva-k k-onoc:-ha] Tokatoka lowa:-v-ç yu-m.
   basket braid-ss REL-AUX-FUT Tokatoka wife-DET-NOM be-ASS
   ‘Who will braid a basket, is Tokatoka’s wife.’

d. [Nu kwit LUGALu-s tezzi] nu apât iyami.
   CON REL:ACC. king-NOM says CON D3.ACC. do:1
   SG.NLIV SG.NLIV
   ‘What the king says, I do even that.’

Notice that in (53a/b) – apart from the fact that headed relatives are postnominal in Malagasy and prenominal in Lahu – it is the position of the relative element which indicates within which main strategy (prenominal or postnominal) the free relative falls, since initial relative complementizers (if any) are used in postnominal relatives, and final nominalizing elements (if any) in prenominal ones (cf. Appendix II, table 10).

There are different types of free relatives, with somewhat different properties. These are discussed in section 6.3.1. Subsequently, the confusing transition between free relatives of the postnominal type, correlative and circumnominal relatives is treated in 6.3.2. Section 6.3.3 contains a systematic classification of free relatives.

6.3.1. **Types and properties of free relatives**

It is possible to add a determiner or quantifier to a relative without an overt nominal head. This can be clearly shown in German.

(54) a. der [der zu spät gekommen ist]...
   D3 Drel too late come has

b. alles/vieles [was du willst]...
   all/much what you want

According to Lehmann (1984) there are also free relatives with a pronominal head...

(55) a. solche [die zu spät kommen]...
   such Drel too late come

b. etwas [was du willst]...
   something what you want
AA  TYPOLOGY  OF  RELATIVE  CONSTRUCTIONS  43

c.  jemand [der zu spät kommt]...
   someone $D_{rel}$ too late comes

... and relatives with a combination of both.46

(56)  der-jenige [der zu spät kommt]...
   the-one $D_{rel}$ too late comes

Moreover, Lehmann states that a free relative with an indefinite relative pronoun, e.g. (57a), is also a free relative with a pronominal head.

(57)  a.  [wer zu spät kommt]...  
   [FR with pronominal head]
   b.  [der zu spät kommt]...
   [FR without nominal head]

The difference between (57a) and (57b) is that the former has a default indefinite, non-specific reading and the latter a default definite reading. If, however, in a certain language a relative pronoun always has the indefinite interrogative format (e.g. who in English), the difference between a pronominal and a zero nominal head vanishes.

However, in my view pronouns and determiners are combined in one major class of elements with categorial status $D$, see the subsequent chapters.47 If so, the difference between (54) and (55) is a little arbitrary. I think the relevant distinction to be made between the types mentioned is the presence or absence of $D$ material. This gives the picture in (58).

(58) A classification of (free) relatives (provisional):

\[
\begin{align*}
\rightarrow & \text{headed relatives: with overt head N} \\
\rightarrow & \text{relative clauses } \rightarrow \text{true free relatives: no overt head N, no overt head } D \\
\Downarrow & \text{false free relatives: no overt head N, with overt head } D
\end{align*}
\]

False free relatives are called semi-free relatives in Smits (1988). The pronominal/demonstrative antecedent is also called prop-antecedent. There is support for this classification from several independent sides.

First, the semantics of free relatives has been argued to be maximalizing, i.e. the interpretation is definite or universal (cf. Jacobson 1995; Grosu & Landman 1998). But this is only so for true free relatives. A false free relative can easily be assigned an indefinite, non-generic reading, depending on the head $D$; cf. (59).

(59)  Einer/jemand [der zu spät kam] wurde gestraft.
   ‘One/someone who came late, has been punished.’

Whether the head $D$ is a determiner or a pronoun is irrelevant. This reading is impossible for (57a/b) – again, whether there is a pronominal head or not.

46 Note that jenige, which derives from jen- ‘that’ cannot exist as an independent pronoun.
47 This does not mean that there is no difference at all. Perhaps incorporation of an empty noun into $D$ plays a role in pronouns, cf. Klooster (1997).
Second, true free relatives can be subject to Case matching effects. This is shown in (60), where there are contradictory Case requirements on the relative pronoun. If there is no morphological difference between the two Cases, as in (60b), the problem disappears. This is called Case syncretism in Van Riemsdijk (2000).

(60) a. *Ichkenne [d_wen/d_wer dort steht].
   I know whom/who there stands
b. [Was er sagte] kam mir unglaubhaft vor. [was: NOM/ACC]
   what he said appeared to me implausible

The sentence in (60a) can be repaired by adding an external determiner, i.e. by using a false free relative:

(61) Ichkenne den [der dort steht].
   I know D3 who there stands

In (61) the right Case can be assigned in the matrix and the subordinate clause separately. Thus again, false free relatives behave on a par with headed relatives.48

All types discussed above are syntactically grouped together in the sense that they are instances of DPs. This means that true free relatives (like circumnominal relatives) are type-lifted, as argued by Groos & Van Riemsdijk (1981), Lehmann (1984) and others (contra some older work, e.g. Bresnan & Grimshaw, 1978).

Grosu & Landman (1998) argue that there is also a really different type of free relative: the irrealis free relative. Contrary to the realis ones mentioned so far, irrealis free relatives are bare CPs. As the name indicates, they display an irrealis verb form. Syntactically, they are like interrogatives. For instance, they do not show matching effects. They do not have the distribution of normal DPs, but one mainly limited to indefiniteness contexts. Moreover, extraction out of an irrealis free relative is possible, as from embedded questions. A Romanian example is given in (62), taken from Grosu & Landman (1998:157).

(62) Despre ce (nu) ai [cu cine sâ vorbesti_]? about what (not) you-have with whom SUBJ talk
   ‘What do(n’t) you have with whom to talk about_?’

On the other hand, extraction is not possible from headed relatives or realis free relatives, a property that is traditionally subsumed under the Complex NP Constraint. This difference can be related to the absence of a DP-shell in irrealis free

---

48 Next to Case matching effects, there are category matching effects, described e.g. in Van Riemsdijk (2000). In (i) the matrix verb selects a DP, but the raised wh-constituent is a PP.
   (i) *The police arrested [[pp to whom] the witness pointed].
   If there is no pied piping the sentence is correct. Furthermore, if a false free relative is used, there is no category matching effect; see (ii). Similar examples can be construed in German.
   (ii) The police arrested him to whom the witness pointed.
   Hence again false free relatives behave like headed relatives.
relatives. I do not know if irrealis free relatives occur in languages with non-postnominal relatives, too.

Finally, there is a fourth type of free relatives, described in Wilder (1998) and Van Riemsdijk (1998, 2000): the transparent free relative. This is a relative "in which the initial wh-element (always 'what' [in English]) is almost like a dummy element, while the relative clause contains a small clause predicate that has most of the properties of the pivotal element" (Van Riemsdijk 2000:24). Two examples are given in (63):

(63) a. What appeared to be a jet airliner had landed on the freeway.

b. They served me what they euphemistically referred to as a steak.

Wilder and Van Riemsdijk list several properties in which transparent free relatives differ from true free relatives. Importantly, an indefinite interpretation is possible, hence there is no maximalization. All properties point to the idea that the relative clause is not really there: it is the small clause predicate inside the relative that interacts with the matrix. Hence the name transparent free relative, due to Chris Wilder. Transparent FRs are treated like Right Node Raising constructions in Wilder (1998). The 'internal head', the small clause predicate, is conjoined with a free relative in which the relevant constituent is elided. Van Riemsdijk’s approach is somewhat different: he uses a multi-dimensional tree structure, where the internal head (often a DP) is selected in the matrix and in the free relative, which is a parallel sentence. (I will apply similar ideas to extrapolated relatives and appositive relatives in Chapters 6 and 7.) For more details I refer to the authors cited.

Some important properties of free relatives are summarized in table 9.

<table>
<thead>
<tr>
<th>property</th>
<th>headed relative</th>
<th>false FR</th>
<th>true FR</th>
<th>irrealis FR</th>
<th>transparent FR</th>
</tr>
</thead>
<tbody>
<tr>
<td>overt head</td>
<td>yes</td>
<td>yes, but D/proo-like</td>
<td>no</td>
<td>no</td>
<td>no, but inter. SC pred. acts as internal head</td>
</tr>
<tr>
<td>overt external D</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>maximalizing (only definite/universal)</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>matching effects</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>yes, but with int. SC predicate</td>
</tr>
<tr>
<td>nominalized (DP)</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>irrelevant</td>
</tr>
<tr>
<td>extraction from RC</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>distribution as</td>
<td>DP</td>
<td>DP</td>
<td>DP</td>
<td>CP</td>
<td>depends on category of int. SC pred.</td>
</tr>
</tbody>
</table>

Notice that false free relatives differ in no respect from headed relatives (except, of course, that the head noun is not fully represented). Therefore it is dubious to classify them as free relatives (which is why I have called them false FRs). However, whether they are called ‘deflated headed relatives’ or ‘false free relatives’ is only a matter of definition, as long as it is clear which properties are associated with them. Finally, (58) can be revised at this point; it is shown in figure 8.
Figure 8. A classification of (free) relatives (second version).

<table>
<thead>
<tr>
<th>relative clauses</th>
<th>headed relatives</th>
<th>true free relatives</th>
<th>irrealis free relatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>free relatives</td>
<td>false free relatives</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The next subsection discusses the distinction between free relatives of the postnominal type, correlatives, and circumnominal relatives.

6.3.2. The transition between free relatives of the postnominal type, correlatives, and circumnominal relatives

Many languages seem to have a secondary correlative strategy. A Dutch example is (64a), which is to be compared with the normal free subject relative in (64b).

(64) a. Wie dit gedaan heeft, die krijgt straf. [free correlative?]
   Who this done has DEM gets punishment
   b. Wie dit gedaan heeft krijgt straf. [free subject relative]

The construction in (64a) contains a headless correlative at first sight. The demonstrative *die* is the subject of the matrix clause. In (64b) the whole free relative occupies the subject position in the matrix. It would not be surprising if languages use a secondary correlative strategy (with headless correlatives) as an alternative to free relatives, since (i) the semantics of correlatives and free relatives is similar (viz. maximalizing), and (ii) headless correlatives are construed in the same way as normal free relatives in languages with a postnominal main strategy.

Sentence (64a) looks like a left-dislocation construction such as *die man, die krijgt straf* ‘that man, he gets punishment’. The examples in (65) show that the pertinent construction is also possible with objects, like the left-dislocation construction. I will call these sentences hanging free relatives.

(65) a. Wat jij van oma kreeg, dat heeft hij gestolen.
   what you from grandma got, that has he stolen
   b. Dat ding, dat heeft hij gestolen.
   that thing, that has he stolen

Interestingly, the demonstrative must be sentence-initial; it cannot be in situ. See (66). This is quite unlike the situation in normal correlative constructions.

---

49 There are two types of exceptions to this claim. First, in imperatives and *yes/no* questions the verb must be initial, and the demonstrative (*die or that*) is in situ:

(i)  *Die jongen, ken je die/*hem wel?  [that boy, know you that/*him indeed?]

_to be continued..._
AA TYPOLOGY OF RELATIVE CONSTRUCTIONS

(66) a. * Wat jij van oma kreeg, hij heeft dat gestolen.
    b. * Dat ding, hij heeft dat gestolen.

Furthermore – given a possible connection with correlatives – one may wonder if an internal head is possible in the hanging free relative construction. The examples in (67) show that this is indeed the case.

(67) a. Welke onverlaat zoiets doet, die krijgt straf.
    b. Welke onverlaat zoiets doet, die zal ik straffen.

These examples look exactly like correlatives. However, the equivalent constructions which are supposed to be free relatives show the internal head, too; see (68).50 (Obviously the existence of headed free relatives is strange, since the definition of a free relative is that it is headless. See below.)

(68) a. [Welke onverlaat zoiets doet] krijgt straf.
    b. [Welke onverlaat zoiets doet] zal ik straffen.

In general, left-dislocation is related to topicalization, which is not the case for correlatives. Some additional examples with free relatives are in (69).

(69) a. Ik lees welk boek hij ook maar leest.
    ‘I read whichever book he reads.’
    b. Welk i dioot zoiets doet, verdient straf!
    ‘Whichever idiot does such a thing, deserves punishment!’

Examples with an internal head are a little marked, but acceptable in general. Now the question is: when can an internal head be used in a normal free relative or hanging free relative? It seems to me that it only works with generic meanings, not with definite specific ones. Compare the examples in (70) and (71).

(70) a. * Welke bakker hier op de hoek zit (die) heeft witbrood.
    which baker here on the corner is (DEM) has white.bread
    b. * Welke bedelaar ik vandaag tegenkwam (die) gaf ik geen geld.
    which beggar I today met (DEM) gave I no money

* continued

(ii) Dat boek, geef dat/*het terug!
    [that book, return that/*it (back)!]  
    In my intuition this is another type of construction and I will ignore it here.
    Another type of (apparent) counterexample is illustrated in (iii). I will return to it in the next subsection.

(iii) Wat Joop ook koopt, Susanne vindt het altijd mooi.
    what(ever) Joop NPI buys, Susanne regards it always beautiful

50 Koster (1978) argues that “subject sentences do not exist”. The structure of (67) and (68) would be similar, then. The difference is that in (68) an empty operator replaces the demonstrative.
(71) a. Welke bakker zo’n grote winkel heeft (die) verkoopt witbrood.  
    which baker such.a big store has (DEM) sells white.bread  
b. Welke bedelaar je ook maar tegenkomt(die) behoort je geld te geven.  
    which beggar you NPI meet (DEM) ought you money to give

The same contrast can be obtained with free relatives at an object position:

(72) a. * Ik gaf geen geld aan welke bedelaar ik vandaag tegenkwam.  
    I gave no money to which beggar I today met  
b. * Je kunt witbrood kopen bij welke bakker hier op de hoek zit.  
    you can white.bread buy at which baker here on the corner is

(73) a. Je behoort geld te geven aan welke bedelaar je ook maar tegenkomt.  
    you ought money to give to which beggar you NPI meet  
b. Je kunt witbrood kopen bij welke bakker je ook maar kunt verzinnen.  
    you can white.bread buy at which baker you NPI can imagine

True correlative are not subject to this limitation to generic contexts.

A third difference with correlative is that a hanging free relative is impossible in a subordinate clause (contrary to a normal free relative):

(74) a. Wie zoiets doet (die) krijgt straf.  
    who such.a thing does (DEM) gets punishment  
b. We raden het je af, omdat wie zoiets doet (*die) straf krijgt.  
    we advise it you against, because who such.a thing does (DEM) punishment gets

This difference may follow automatically if correlatives are adjoined to IP (hence below a complementizer) – cf. Ch4§6 – but hanging free relatives combined with the demonstrative are in SpecCP.\(^\text{51}\) In Dutch it is verb second that opens up the SpecCP position, hence in subordinate clauses (where there is no verb second) no constituent can precede a complementizer. If in (74b) the free relative is not hanging (hence if die is absent) it could occupy the normal subject position, SpecIP, which is below omdat. Therefore (74b) is only correct with a normal free relative.\(^\text{52}\)

The results up to this point are summarized in table 10.

---

\(^{51}\) One may analyse hanging free relatives and left-dislocated DPs like appositions. All three are combinations of two DPs that occupy one position. This is possible if the two DPs are coordinated in a special way. See also Chapters 6 and 7 on asyndetic specifying coordination. See however Koster (1978) for a different view on left-dislocation.

\(^{52}\) A little less bad than the hanging free relative in (74b) is (i) – only in spoken language – where the subordinate has verb second:

(i) ?? We raden het je af, omdat wie zoiets doet, die krijgt straf.  
    we advise it you against, because who such.a thing does, he gets punishment

Actually, this involves a special discourse connection such that there is an imaginary colon after omdat ‘because’, which invokes a syntactic main clause (like in a citation), hence a hanging free relative becomes available. Compare Gaertner (1998) about V2 relative clauses in German.
Table 10. The distinction between (hanging) free relatives and correlatives.

<table>
<thead>
<tr>
<th>property</th>
<th>correlatives</th>
<th>left-dislocated DP</th>
<th>hanging FR</th>
<th>normal FR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>non-headed</td>
<td>int. headed</td>
</tr>
<tr>
<td>semantics</td>
<td>definite &amp; universal</td>
<td>definite &amp; universal</td>
<td>definite &amp; universal</td>
<td>only universal</td>
</tr>
<tr>
<td>internal N head</td>
<td>yes</td>
<td>d.n.a.</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>DEM/correlate</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>position RC</td>
<td>sentence-initial</td>
<td>sentence-initial</td>
<td>sentence-initial</td>
<td>in situ</td>
</tr>
<tr>
<td>position ‘antecedent’ DP</td>
<td>in situ</td>
<td>adjacent to DP</td>
<td>adjacent to RC</td>
<td>d.n.a.</td>
</tr>
<tr>
<td>position DEM</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>possible in sub-ordinate clauses</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>yes</td>
</tr>
</tbody>
</table>

I conclude that hanging free relatives are not correlatives; they are special instances of left-dislocation.

Another issue is the internal head in (67)-(74). Free relatives are supposed to be headless. Therefore, a possibility to verify is the idea that ‘internally headed free relatives’ are a (secondary) circumnominal relative strategy instead. I do not think that this is the case. First, the semantics is different (e.g. circumnominal relative constructions can be specific). Second, the internal head in free relatives is accompanied by a relative (interrogative) pronoun and it is wh-moved. This contrasts with circumnominal relatives. Third, in several languages circumnominal relatives allow for an overt external determiner. This is not the case for internally headed free relatives; see (75a), which also contrasts with the false free relative in (75b).

(75) a. * Degene/hij welke onverlaat zoiets doet (die) krijgt straf.
   the.one/he what miscreant such.a.thing does, (DEM) gets punishment
   b. Degene/hij die zoiets doet (die) krijgt straf.
   the.one/he who such.a.thing does, (DEM) gets punishment

A schematic comparison between several types of internally headed relative clauses is provided in table 11.
Table 11. The distinction between internally headed free relatives, circumnominal relatives and correlatives.

<table>
<thead>
<tr>
<th>property</th>
<th>correlative</th>
<th>internally headed relatives</th>
<th>internally headed free relative</th>
<th>normal</th>
<th>hanging</th>
</tr>
</thead>
<tbody>
<tr>
<td>position RC</td>
<td>sentence-initial</td>
<td>in situ</td>
<td>in situ</td>
<td>sentence-initial</td>
<td></td>
</tr>
<tr>
<td>DEM/correlate</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>position DEM</td>
<td>in situ</td>
<td></td>
<td></td>
<td></td>
<td>adjacent to RC</td>
</tr>
<tr>
<td>semantics</td>
<td>definite &amp; universal</td>
<td>[free]</td>
<td>only universal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RC nominalized</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>overt external D</td>
<td>no</td>
<td>possibly</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>relative pronoun</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>position internal head</td>
<td>RC-initial</td>
<td>in situ</td>
<td>RC-initial</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Most probably, internally headed free relatives exist in languages with a postnominal relative main strategy only, because in correlatives and circumnominal relatives the head is internal anyway, and in prenominal relatives there are no relative pronouns.

Thus languages with a postnominal relative strategy allow for a strange type of internally headed free relatives that differ from correlatives and circumnominal relatives.

6.3.3. A systematic classification of free relatives

From the previous sections it is clear that a type of free relative is constructed from the setting of at least five parameters: realis/irrealis, transparent/opaque, true/false, hanging/independent, (internally) headed/non-headed. It is possible to view these as special characteristics that can be turned on or off. If all are off, we have a normal ('true') free relative. In principle there are $2^5 = 32$ possible settings. They are listed in table 12. Further explanation follows below.
Table 12. Types of free relatives.

<table>
<thead>
<tr>
<th>name</th>
<th>irrealis</th>
<th>overt external D</th>
<th>hanging</th>
<th>transparent</th>
<th>internally headed</th>
</tr>
</thead>
<tbody>
<tr>
<td>true FR</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>internally headed FR</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>transparent FR</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>[excluded]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hanging FR</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>hanging internally headed FR</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>hanging transparent FR</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>[excluded]</td>
<td></td>
<td></td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>false FR</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>[excluded]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>false transparent FR</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>[excluded]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>false hanging FR</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>[excluded]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>false hanging transparent FR</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>[excluded]</td>
<td></td>
<td></td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>irrealis FR</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>?</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>[excluded]</td>
<td></td>
<td></td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>?</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>?</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>[excluded]</td>
<td></td>
<td></td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>[excluded]</td>
<td></td>
<td></td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>

The six singular types are true, false, hanging, transparent, irrealis, and internally headed free relatives. They have been discussed in the previous sections. Mixtures are also possible, but some combinations are excluded:

- Irrealis excludes an overt external D, since irrealis free relatives are (non-nominalized) CPs, so there is no D position.
- An overt external D excludes an internal head, e.g. *Diegene welke idioot zoiets doet, verdient straf? "The one whichever idiot does such a thing, deserves punishment!" This confirms the intuition that false free relatives are not really free.
- A transparent relative excludes an internal head, e.g. *What/which machine appeared to be a jet airliner had landed on the freeway. This is probably because the small clause predicate fulfils the role of an internal head already.

The characteristics hanging and false can be added to most other types (except perhaps to the irrealis type). An example of mixed types not yet illustrated is provided in (76). I have no information on the possible existence of mixed irrealis types.
Examples of all types of free relatives

a. True free relatives: see (53), (57), (60b), (64b).

b. Internally headed free relatives: see (68), (69), (73).

c. Transparent free relatives: see (63).

d. Hanging free relatives: see (64a), (65a).

e. Hanging internally headed free relatives: see (71).

f. Hanging transparent free relatives:
   Wat een straalvliegtuig bleek te zijn, dat was geland op de snelweg.
   ‘What appeared to be a jet airliner, that had landed on the freeway.’

g. False free relatives: see (54)-(56), (59), (61).

h. False transparent free relatives:
   Dat/iets wat een straalvliegtuig bleek te zijn was geland op de snelweg.
   ‘That/something what appeared to be a jet airliner had landed on the freeway.’

i. False hanging free relatives: see (75b), with the demonstrative.

j. False hanging transparent free relatives:
   Iets wat een straalvliegtuig bleek te zijn, dat was geland op de snelweg.
   ‘Something what appeared to be a jet airliner, that had landed on the freeway.’

k. Irrealis free relatives: see (62).

The properties of all these types are summarized in table 13. Here IH means ‘internally headed’, T ‘transparent’, H ‘hanging’, F ‘false’, and Irr ‘irrealis’.
Table 13. Properties of free relatives.

<table>
<thead>
<tr>
<th>Property</th>
<th>True</th>
<th>IH</th>
<th>T</th>
<th>H</th>
<th>H-III</th>
<th>F</th>
<th>F-H-T</th>
<th>F-H</th>
<th>F-T</th>
<th>F</th>
<th>H-T</th>
<th>CP</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC normalized</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>overt internal head</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>overt external D</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>additional DEM</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>position RC (+DEM)</td>
<td>in</td>
<td>in</td>
<td>CP-</td>
<td>CP-</td>
<td>initial</td>
<td>CP-</td>
<td>initial</td>
<td>CP-</td>
<td>initial</td>
<td>CP-</td>
<td>initial</td>
<td>CP-</td>
</tr>
<tr>
<td>semantics</td>
<td>def &amp;</td>
<td>def &amp;</td>
<td>only</td>
<td>only</td>
<td>only</td>
<td>only</td>
<td>only</td>
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<td>only</td>
<td>only</td>
<td>only</td>
</tr>
<tr>
<td>relative pronoun</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>matching effects</td>
<td>DP</td>
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<td>DP</td>
<td>DP</td>
<td>DP</td>
<td>DP</td>
<td>DP</td>
<td>DP</td>
<td>DP</td>
<td>DP</td>
<td>DP</td>
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</tr>
<tr>
<td>distribution</td>
<td>DP</td>
<td>DP</td>
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<td>DP</td>
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<td>DP</td>
<td>DP</td>
<td>DP</td>
<td>DP</td>
<td>DP</td>
<td>DP</td>
<td>DP</td>
</tr>
</tbody>
</table>

At this point the classification schema of free relatives can be revised to its final version.
Figure 9. A classification of (free) relatives (final version).

As will be clear, not all types of free relatives are compatible with every syntactic main strategy of relativization. In fact, most of them are only attested as a substrategy of the postnominal type. Hence the following additional schema is necessary; see table 14.

Table 14. A tentative mapping of types of free relatives on relative main strategies.

<table>
<thead>
<tr>
<th>free relative</th>
<th>postnominal main strategy</th>
<th>prenominal main strategy</th>
<th>correlative main strategy</th>
<th>circumnominal main strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>True FR</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Internally Headed FR</td>
<td>+</td>
<td>?</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transparent FR</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Irrealis FR</td>
<td>+</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Hanging FR</td>
<td>+</td>
<td>?</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hanging Internally Headed FR</td>
<td>+</td>
<td>?</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hanging Transparent FR</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>False FR</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>False Transparent FR</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>False Hanging FR</td>
<td>+</td>
<td>?</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>False Hanging Transparent FR</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Importantly, all main types have free relatives. From Lehmann (1984) it is also clear that all types have false free relatives. Furthermore, I have shown that correlatives are not hanging. Since correlatives are maximalizing, they cannot be transparent either (because these can be indefinite). Transparent relatives use a *wh* relative pronoun, hence prenominal and circumnominal relatives – which do not have relative pronouns – cannot be transparent. Finally, correlatives and circumnominal relatives cannot have internally headed free relatives, since these could not be distinguished from headed relatives.
The above results are tentative. Further study of different types of free relatives is required, especially in languages with non-postnominal relative main strategies. Perhaps some of these use interesting equivalents of strategies assumed to be non-existent so far, with somewhat different properties.

### 6.4. Adverbial relatives

A subject or object relative is a relative of which the head has the subject resp. object role within the relative clause. Analogously, an adverbial relative is a relative of which the head has an adverbial role within the relative clause, usually temporal, local or pertaining to manner. I will stick to this definition, although some authors use a more restricted one; see below.

An adverbial relative can be formed in different ways. If there is a head noun, there are three possibilities concerning the relative element:

(i) A normal relative pronoun is used. An adposition in the relative clause determines the internal role of the head. The construction is unambiguously a relative construction.

(ii) A specialized relative pro-adverb or conjunction is used. It is this element that determines the internal role of the head. The difference with a nominal complement or adjunct clause is subtle, sometimes absent.

(iii) There is only a standard relative complementizer. Hence the head itself determines its internal role. This construction is more or less grammaticalized, hence unambiguously a relative construction.

Some examples from three Germanic languages – English, German and Dutch – are given in (77).

(77) a. (i) the time on which die Zeit zu der (het tijdstip waarop)
    (ii) the time when    die Zeit als/da  de tijd toen
    (iii) the time that    –           de tijd dat

b. (i) (the city in which) der Ort an dem de plaats waarop
    (ii) the place where der Ort, wo de plaats waar
    (iii) –                –            –

c. (i) the way in which die Art auf die de manier waarop
    (ii) –                die Art wie de manier hoe
    (iii) the way that    –            –

... it happened / ... es passierte / ... het gebeurde

In several languages there is a semantically bleached noun for time, place, or manner. Some use a locative or temporal affix.

---


54 Note that there is R-inversion in Dutch if there is a preposition; cf. Ch8§5. Furthermore, see section 3, especially footnote 24, concerning the interpretation of event relatives, etc.
An adverbial relative can be *free*, too. The way to construct it is with method (ii), since (i) and (iii) make crucial use of the head noun. Some examples are given in (78).\(^{55}\)

(78) a. Wanneer hij komt zal het tien uur zijn.
   when he comes will it ten o’clock be

b. Waar hij woont is het een bende.
   where he lives is it a mess

c. Hij heeft het gedaan hoe Jan het wilde.
   he has it done how Jan it wanted

Here the role of the implicit relative head (the pivot) must be the similar (viz. adverbial) in the relative and the matrix clause. Note that some authors refer only to these kind of sentences as adverbial relatives, e.g. Lehmann (1984).

Adverbial relatives differ from normal adverbial clauses, because the latter type does not contain a gap. Conjunctions such as *because, while,* etc, which introduce normal adverbial clauses, are not relative. The difference is exemplified in (79) and (80).

(79) The doctor came when Judy broke her leg.  \[\text{[adverbial relative clause]}\]

(80) The doctor came because Judy broke her leg.  \[\text{[normal adverbial clause]}\]

In (79) there is a point of time on which two things happen: the doctor’s arrival and Judy’s accident. The point of time is used as a pivot constituent for this proposition; the gap in the relative clause is the adverbial temporal slot. In (80) there is no gap in the relative clause. The reason for the doctor’s arrival is not the reason why Judy broke her leg, hence there is no pivot constituent; the construction is not relative at all.

The difference between an adverbial relative and a normal adverbial clause can be subtle or even absent. This gives rise to ambiguities in many languages. In general three types of clauses can be easily confused with relative clauses, as is well-known:

- noun complement clauses;
- (normal) adverbial clauses;
- embedded questions.

The differences and ambiguities are treated in e.g. Lehmann (1984). On the interpretation of embedded questions and free relatives see also Schoonenboom (2000).

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\(^{55}\) See also Bresnan & Grimshaw (1978), Groos & Van Riemsdijk (1981), Lehmann (1984), Smits (1988) and others.
Finally, I want to point out some difficult cases; consider (81).

(81) Wie did ook gedaan heeft, ik ga weg.
who(ever) this NPI done has, I go away

The example in (81) seems to start with a free relative. The function of the subordinate clause is adverbia l with respect to the matrix.\(^{56}\) The *wh*-word *wie*, however, does not express this function, which implies that it cannot be the pivot. (Notice also that *the one who has done this, I go away* is totally impossible.) Hence the pertinent clause is a kind of adverbia l clause with respect to the matrix. One might argue that there is an unexpressed preposition such as *regardless*. Then the sentence is like *Regardless (of) who did it, I am leaving*. The next question is what the phrase *who did it* is within the larger adverbia l constituent. Even there it is not a free relative, since the meaning is not *regardless the one who did it*, but rather *regardless the issue who did it*. Therefore the clause *who did it*, or *wie dit ook gedaan heeft* in (81) is an embedded question. This is confirmed by the fact that the complementizer *of* ‘if’, which is used in embedded questions, can be inserted in several variants of Dutch. I conclude that what looks like a free relative in (81), is really an embedded question in a hidden adverbia l phrase. Whether the implied material is syntactically present may be subject to discussion. In my view it could be, but if this is untenable and the subordinate clause is a bare CP, one has to introduce a term like adverbia l (circumstantial) embedded question.

Related to (81) are the following examples. Notice that a pronoun in the matrix refers to *wat* in the subordinate.

(82) a. Wat Joop ook koopt, Susanne vindt het altijd mooi.
what(ever) Joop NPI buys, Susanne regards it always beautiful

b. Wat voor bakker je ook opzoekt, witbrood heeft hij altijd.
what for baker you NPI visit, white.bread has he always

Again it is clear that the subordinate has an adverbia l function with respect to the matrix. (In (82a) one may insert the complementizer *of*, again.) Hence the sentences are not hanging free relatives or correlatives (cf. especially (66) in section 6.3.2 above). The *wh*-word does not have this adverbia l function, so the clauses are adverbia l clauses, or rather embedded clauses in a larger adverbia l phrase. This explains why pronominal reference is possible, since pronouns can refer to a constituent in a preceding adverbia l constituent, e.g. *Because Susanne brought flowers, Joop liked her*. Finally the question is what the *wat* clause is within the adverbia l phrase.\(^ {57}\) This time the difference between an embedded question and a free relative is more subtle than in (81). In (82a) we have *regardless the*

\(^{56}\) Moreover, since there is no inversion in the main clause, the ‘adverbia l’ clause is left-dislocated or asyndetically coordinated to the matrix, hence it is not even truly subordinated, but rather a kind of parenthetical.

\(^{57}\) There is a whole literature about the syntax of *wat (...) voor* clauses; see e.g. Corver (1990). The discussion focuses on the ‘*wat voor*-split’; it does not address the issues I have raised, as far as I know.
question/issue/fact what Joop buys... resp. regardless (of) what [= the thing which] Joop buys... The analysis as a free relative seems more appropriate here, but perhaps sentences like these are ambiguous in principle.

In general I think adverbial relatives deserve much more study. However, this falls outside the scope of this book.

6.5. Non-finite relatives

A non-finite relative is a relative of which the verb does not inflect like a finite verb. In general, non-finite relatives can be participial or infinitival, where the first type can be formed with a past participle or a present participle (the gerundival type). It is believed that this can be illustrated in English, at least for simple cases. See (83).

(83) a. the washed clothes [(past) participial relative?]
    b. the washing man [gerundival (= present participial) relative?]
    c. the clothes to wash [infinitival relative]

Non-finite relatives are hard to separate from other attributive structures; there are no clear criteria to decide what is what, according to Smits (1988:41/42). Is (83a) a relative clause or simply a deverbal adjective? More complex cases of would-be participial relatives are the Dutch examples in (84):

(84) a. de deur Joop gewassen kleren [participial relative?]
    de by Joop washed clothes

b. de de kleren wassende man [gerundival relative?]
    the the clothes washing man

c. de deur Joop te wasse n kleren [infinitival relative?]
    de by Joop to wash clothes

Kayne (1994) treats all adjectival constructions as relative clauses. If this is correct, the question raised above is answered. However, I will not follow this radical line of thought. In the Germanic and Romance languages structures like (84) are only possible if the supposed relative head is a subject (where of course the phrase with a past participle acts as the equivalent of a passive sentence). This makes a relative clause analysis suspect. However, an analysis using participle-adjective conversion is always possible.

I have stated before that a true participial relative strategy can have non-subjects as the head; see the Telugu example in (85), repeated from (9) above.

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58 In the periphrastic versions of (81) and (82) the negative polarity item (which makes the clause generic) disappears. It must be discounted in the choice of the preposition (here: regardless). A sentence like "regarding the issue whatever Joop buys... is unacceptable, perhaps because the right scope marking of whatever is blocked by the presence of the noun. The phrase regarding the issue what Joop buys does not have the necessary generic interpretation."
A TYPOLOGY OF RELATIVE CONSTRUCTIONS 59

(85)  [M]iru náku ic-cin-a]  pustukamu cirigipo-ýin-adí.  [*participial RC]
you give-PRET-PART  book  tear up-PRET-3.SG
‘The book you gave me has been torn up.’

Some more true participial strategies are exemplified in Lehmann (1984:49-58). See also Appendix II, table 6. Hence it seems that the relevant criterion is whether non-subject relatives are possible. A further discussion of participial relatives falls outside the scope of this book.

Concerning infinitival relatives, Lehmann (1984:157-159) states that there is not much knowledge about this type, with the exception of English and Italian. Here, I wish to illustrate some of the behaviour of an apparently equivalent construction in Dutch; see (86), where om means approximately ‘so as (to)’.

(86) a. een/het boek om te lezen
     a/the  book  om  to  read
     een boek *(om) te lezen
     a book *(om) to read
     een boek (*d,at) om te lezen
     a book (*which) om to read
     een slaaf om het werk te doen
     a slave om  the  work  to  do
     een jongen om mee te dansen
     a  boy  om  with  to  dance
     iemand om naast wakker te worden
     someone om next to awake to be

Example (86a) shows that the construction can be indefinite or definite (depending on the right context); (86b) that om is obligatory; (86c) that a relative pronoun is impossible; (86d/d’/d”) that the relative head can be a subject, a prepositional object, or an adverbial phrase in the subordinate clause — apart from a direct object.

Curious is that the construction can be prenominal, too, in Dutch. In that case, om is obligatorily absent.

(87) een (*om) te lezen boek
     a (om) to read book

But there are other differences between the prenominal and the postnominal construction. Like a participial clause or phrase, e.g. (83a/84a), the ‘prenominal infinitival relative’ is passive. This explains why (86d/d’) cannot be prenominal, since only direct objects survive in a passive sentence in Dutch.

(88) a. een (door de commissie) te lezen boek
     a (by the committee) to read book
     * een het werk te doen slaaf
     a the work to do slave
     * een mee te dansen jongen
     a with to dance boy
The postnominal construction does not have to be passive at all.\textsuperscript{59} Obviously, (86d/d'd’\textsuperscript{60}) cannot have a by-phrase, but neither can (86a) – contrary to a non-agent for-phrase for example.\textsuperscript{60} This pattern is shown in (89).

\begin{itemize}
  \item \textbf{(89a)} a. een boek om te lezen (voor/*door de commissie) \\
      een mooi boek om te lezen (voor/*door de commissie)
  \item b. de beste mogelijkheid om te benutten (voor/*door ons) \\
      an obligatory book om to read (voor/*by the committee)
  \item the best possibility om to use (voor/*by us)
\end{itemize}

Finally, notice that a possible adjective or adverb behaves differently depending on whether it modifies the ‘head’ noun directly or the predicate in the infinitival clause; see (90). (Phrase (90c) is correct in a different reading.)

\begin{itemize}
  \item \textbf{(90a)} a. een mooi boek om te lezen a. een verplicht boek om te lezen
      a nice book om to read an obligatory book om to read
  \item b. * een boek om mooi te lezen b. * een boek om verplicht te lezen
  \item c. * een mooi boek om te lezen book
      c. * een boek verplicht om te lezen book
  \item d. * een mooi te lezen boek d. * een verplicht te lezen boek
  \item e. * een te lezen mooi boek e. * een te lezen verplicht boek
\end{itemize}

The surprising example is (90a’), where verplicht is raised to the (prenominal) adjective position of boek.

At present I am not sure how to analyse ‘infinitival relatives’, and how to explain the differences between the prenominal and postnominal type. The fact that relative pronouns are forbidden (except a pronoun in question format if a preposition is used in English), and that the existence of infinitival relatives has not been reported outside the Germanic or Romance language family – as far as I know – casts doubt on an analysis as relative clauses at all.\textsuperscript{61} The presence of the prepositional complementizer om in Dutch also points in the direction of another type of complement. Example (91a) shows that the infinitival clause can be the complement of an adjective. This is impossible for a finite relative clause (91b).

\begin{itemize}
  \item \textbf{(91a)} a. [Leuk om te lezen] is dat boek. \\
      nice om to read is that book
  \item b. * [Leuk die/wat je leest] is dat boek.
      nice which you read is that book
\end{itemize}

I will leave the analysis of non-finite relatives for further research.

\textsuperscript{59} There are some examples where a passive is allowed, e.g. een stok om mee geslagen te worden ‘a stick to be hit with’.
\textsuperscript{60} Notice that the for-phrase is not even part of the subordinate clause: * een boek om voor de commissie te lezen.
\textsuperscript{61} Broekhuis & Dekkers (2000), too, argue that ‘infinitival relatives’ are not relative clauses in Dutch. Nevertheless there may be wh-movement (of an operator) in this construction; cf. Van Riemsdijk (1978a) and Broekhuis & Dekkers (2000).
6.6. Cleft and pseudo-cleft sentences

The cleft and pseudo-cleft construction are illustrated in (92).

(92) a. It was Joop who lost the game.
    b. A: What we enjoyed most was the candy-bar.
       B: The candy-bar was what we enjoyed most.

Schematically, we have (93).

(93) a. (expletive) copula XP\textsubscript{focus} YP\textsubscript{wh} [cleft]
    b. A: YP\textsubscript{wh} copula XP\textsubscript{focus} [pseudo-cleft]
       B: XP\textsubscript{focus} copula YP\textsubscript{wh}

The reading of a pseudo-cleft can be predicational or specificational. The difference is illustrated in (94).

(94) What Hans told me was a secret.
    (i) ‘H. told me a secret.’ [specificational]
    (ii) ‘H. told me something – say, a joke – and this joke is secret’ [predicational]

Smits (1988:216-223) argues that the particular reading is irrelevant for the syntactic analysis: all pseudo-clefts are free relatives (i.e. YP\textsubscript{wh} in (93a/b) is FR). However, Meinunger (1997) argues on the basis of connectivity effects and parallels with question-answer pairs, that specificational pseudo-clefts are quite different from free relatives, and quite like normal clefts. The whole construction is analysed (within a Minimalist framework) as monoclausal; from a normal sentence a cleft is derived by moving the focus up and adding a copula and an expletive on top; then an additional procedure – topicalizing the remnant sentence – may turn the construction into a pseudo-cleft. Unfortunately, Meinunger does not refer to Smits (1988:203-216), who argues that a cleft sentence is an extraposed appositive relative.

The approach to pseudo-clefts is developed further and changed in Den Dikken, Meinunger & Wilder (1999). First, they separate type A pseudo-clefts from type B; cf. (93b). Type B pseudo-clefts are tentatively analysed as inverse predicational ones, i.e. as small clause predicates. This leaves type A specificational pseudo-clefts as ‘true’ pseudo-clefts. These are analysed as \textit{wh}-sentences (not free relatives) in topic position: the focus XP is an IP where some deletion may take place. How pseudo-clefts relate to clefts in this approach is not discussed.

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62 Clefts can also be predicational instead of specificational, cf. (i).
   (i) Het was (een) geheim, wat hij me vertelde. [it was (a) secret, what he told me]

63 It is kind of ironic that a present-day analysis like Meinunger’s derives a pseudo-cleft from a cleft, whereas an older analysis such as Gundel’s (1977) tries to do exactly the opposite.

64 In particular, the fact that clefts are clearly extraposed (e.g. think of the order expl, Aux, XP\textsubscript{loc}, V\textsubscript{cop}, Cleft in Dutch and German) seems problematic for the monoclausal approach. Furthermore, Meinunger’s analysis does not explain the presence, Case and position of relative pronouns. On the other hand, Smits does not explain, or even address the connectivity effects.
The literature on cleft-sentences is based almost entirely on English examples, where Smits (1988) is an important exception. Translation and construction of examples in e.g. Dutch makes me seriously doubt the validity of the arguments based on connectivity effects in English. Moreover the fact that what seem to be non-predicative pseudo-cleft sentences can be construed with false and/or hanging free relatives, is completely ignored in the literature, as far as I know.\textsuperscript{65} Hence no final conclusions are possible about these already hotly debated constructions. A further discussion of (pseudo-)cleft constructions is far beyond the scope of this book, however. At present I must refer to the works cited and references therein.

7. Aspects of the relative construction

This section briefly summarizes important aspects of the relative construction: the use of relative pronouns and particles, the position of the external determiner, recursive and linear embedding (stacking), pied piping and preposition stranding, extraposition, and multiple relativization.

7.1. Relative pronouns and particles

Relative clauses are often marked by a relative element. In English there are three possible strategies, as is well-known: the use of a relative pronoun, a relative particle, or nothing at all; see (95).

(95) Do you know the woman who/that/o we met this morning?

In Chapter 5 I will show that relative elements can be classified as in figure 10.

Figure 10. Relative elements.

<table>
<thead>
<tr>
<th>relative pronouns</th>
<th>relative particles</th>
<th>resumptive pronouns</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>relative markers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>relative affixes</td>
<td></td>
</tr>
</tbody>
</table>

Relative pronouns are for instance English \textit{which} or \textit{who}. Resumptive pronouns are demonstrative or personal pronouns that occupy the position of the gap in the relative clause. They are not \textit{wh}-moved. A canonical relative particle is the English relative complementizer \textit{that}. Relative markers are sentence-initial particles which

\textsuperscript{65} Just one example:

(i) Wat elke boer deed, dat was mest uitrijden op zijn land.
    what [every farmer], did, that was manure spread on his, land
are not complementizers, because they show characteristics of pronouns (in particular, \( \phi \)-features), but they are not wh-moved, hence do not occupy the gap. They can be found in classifier languages such as Wolof, but also in Èwé, Geez, etc. A relative affix is a verbal affix that indicates in one way or another that the clause is a relative clause, e.g. in Hopi or Kongo. There are many subtypes of this class. See further Chapter 5.

### 7.2. The position of the external determiner

Consider the linear order of relative clause (RC), head (N) and definite determiner (D) in adnominal relative constructions. From Appendix II, tables 16 and 17 it is clear that all logically possible orders are attested (see also Keenan 1985):

(96) The order of D, N and RC in adnominal restrictive relatives

<table>
<thead>
<tr>
<th>Type of RC</th>
<th>Options</th>
<th>Languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postnominal</td>
<td>(i) D N RC</td>
<td>Dutch, English</td>
</tr>
<tr>
<td></td>
<td>(ii) N D RC</td>
<td>Swedish, Albanian</td>
</tr>
<tr>
<td></td>
<td>(iii) N RC D</td>
<td>Èwé, Indonesian</td>
</tr>
<tr>
<td>Prenominal</td>
<td>(iv) D RC N</td>
<td>Tigré, Yurok</td>
</tr>
<tr>
<td></td>
<td>(v) RC D N</td>
<td>Korean, Abkhaz</td>
</tr>
<tr>
<td></td>
<td>(vi) RC N D</td>
<td>Basque, Ijo</td>
</tr>
</tbody>
</table>

If I understand Lehmann (1984:280-286) correctly, he suggests that (i) and (vi) should be ambiguous between a restrictive interpretation (where D takes scope over N+RC) and an appositive interpretation (where D only takes scope over N), since there are two ways of bracketing: \([D [N_R]RC]\) or \([D [N]_\lambda RC]\) for (i), and, mirrored, \([N_R]RC[D]\) or \([N_R]D]\) for (vi).

Therefore, options (iii) \([N_R]RC[D]\) and (iv) \([D_R]RC[N]\) should be the unmarked and most widespread order for restrictive relatives. The same languages should use options (ii) \([N_D]_\lambda RC]\) and (v) \([RC_D[N]\) respectively for appositives. Unfortunately, this is perhaps seldom the case, but data on appositives are scarce. Moreover, as shown in (96), some (but perhaps not many) languages use (ii) and (v) for restrictives.

Concerning circumnominal relatives, there are two logically possible orders: [D cir] and [cir D], but only [cir D] has been attested so far. The definite determiner cannot be within the circumnominal relative, since the nucleus must be indefinite, (and non-generic), see also Williamson (1987).

The position of the external determiner is discussed further in Chapter 3, section 3.2 and Chapter 4, sections 3.6 and 4-7.

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66 See Chapter 6 for extensive discussion on the scope of D. Note that \([D RC]_\lambda\) or \([RC D]\) excluding N is a meaningless hierarchy (except if N is embedded within RC; see below).
7.3. Recursive and linear multiple embedding

One constituent can contain more than one relative clause. This phenomenon is called multiple embedding. There are two types: recursive and linear multiple embedding. The latter type is better known as stacking. Both are illustrated in (97).

(97) a. [The woman that saw [the dog that had bitten the man]], ran away. [recursive ME]
b. [The dog [that saw the woman] [that had bitten the man]], ran away. [linear ME]

Recursive multiple embedding means that there are two or more head nouns with a corresponding relative clause, each one level deeper embedded than the previous one(s). Linear embedding attaches two or more relative clauses to one head. Both types lead to centre embedding, hence to performance problems (cf. Givón 1984:Ch15).

The recursive type is not particularly spectacular, but stacking is quite interesting. Relevant questions are:

- Does the second relative modify the head noun or the head noun plus the first relative?
- Do all semantic main types of relatives stack?
- Do all syntactic main types of relatives stack?
- What is the syntactic representation/derivation?

In section 3 above I have mentioned that maximalizing relatives (including correlatives) do not stack. Appositives do; see Chapter 6. Clearly, stacking – but also recursive multiple embedding – is complicated in circumnominal relative constructions. It is known to be possible in Lakota, but much more data are needed. See the references in Ch4§5, e.g. Culy (1990), for some comment. The syntax of multiple embedding is treated further in Chapter 6.

7.4. Pied piping and preposition stranding

Like in questions, relative clauses can display preposition stranding or pied piping, depending on the particular language.

(98) a. the man whom I gave the flowers to [Whom did he give the flowers to?]
b. the man to whom I gave the flowers [To whom did he give the flowers?]

A possessive relative construction also involves pied piping:

(99) the man whose flowers she stole [Whose flowers did she steal?]

Especially within a ‘promotion theory of relative clauses’ this behaviour could potentially complicate the syntactic analysis of these sentences. Possessive relatives
are treated in Chapter 8. On (heavy) pied piping and preposition stranding, see Ch8§5 in particular.

7.5. Extraposition

In many languages relative clauses can be extraposed to the right. This phenomenon is illustrated in Dutch:

(100) a. Ik heb de man die zijn tas verloor gezien.
    I have the man who his bag lost seen

b. Ik heb de man gezien die zijn tas verloor.

Relevant questions are the following:

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

These questions are treated in Chapter 7.

Here, I would like to add a note on extraposed appositives and so-called pseudo-relatives. An example of a pseudo-relative is (101), taken from Smits (1984:181).

(101) Marie est là, qui pleure comme une Madeleine.
    Marie is there, who cries like a fountain
    'Marie is there, and she is crying her heart out.'

According to Smits a pseudo-relative - also known as a relative attribute - looks exactly like an extraposed relative, but it is interpretationally different. This primarily French and Italian clause type exists in presentative constructions and in the complement of perception verbs. The relative gap must be a subject and the verb in the relative clause non-stative.

Extraposed appositives can be very close to pseudo-relatives. The meaning is continuitive, resultative, contrastive, or something else. An example is (102), from Smits (1988:185).

(102) Ik wilde mijn zuster opzoeken, die echter niet thuis was.
    I wanted my sister visit, who however not at home was.

Smits (1988:186) writes: "Typically, the 'continuitive, resultative, contrastive' or whatever other meaning of the 'extraposed appositive' modifies the whole state of affairs that is expressed in the main clause, rather than some nominal antecedent. [...] I feel justified in concluding that what we have so far called extraposed appositives are not instances of the rule of extraposition at all, but adverbial clauses base-generated in their observed position, like pseudo-relatives."
I think that this conclusion is not correct. Note first that extraposition of appositives is quite normal in Dutch:

(103) a. Gisteren heb ik mijn zuster, die blond haar heeft, bezocht. \*[app]
yesterday have I my sister, who blond hair has, visited
b. Gisteren heb ik mijn zuster bezocht, die blond haar heeft. \*[extr]

Even in English normal appositives can be extraposed, cf. (104), from Fabb (1990:59). See also Chapter 6.

(104) I met John yesterday, who I like a lot.

Hence I would say that a range of meanings is compatible with extraposed appositives, rather than distinguishing three syntactically distinct categories: pseudo-relatives, extraposed adverbial appositives and normal extraposed appositives. It is clear that there are special reasons why sentences like (102) are preferably extraposed, but no general conclusions about appositive relatives can be drawn from that. Nevertheless, some further study concerning pseudo-relativity, etc. may be desirable.

Finally I must mention the ‘extreme consequence’ of appositive extraposition: the relative junction. This construction contains two ‘main clauses’, where the second looks like a relative clause, i.e. it starts with a relative element. An example is (105), taken from Lehmann (1984:274).

(105) Dieser Wagen ist nicht mehr verbesserungsfähig.
this car is no \* more improvable
Weshalb wir ihn unverändert weiterbauen.
for.\* which reason we it unchanged further build

Notice that the second sentence is verb-final, which is the clause structure of subordinate clauses in German. At the same time the intonation pattern at the junction differs from that in appositive relative constructions, and perhaps may equal one where a new main clause starts out. The relative junction is a special case of a more general pattern whereby, for stylistic reasons, the junction between a main clause and a subordinate clause looks like one between main clauses, as in "I hate Wubbe. Because he is mad." Therefore, I regard it as not very relevant for the syntactic analysis of relative constructions.

7.6. Multiple relativization

A relative construction has a pivot. This pivot constituent plays a role in the matrix and in the subordinate relative clause. Usually, the two roles are syntactically marked separately. For instance, there can be an antecedent in the matrix and a wh-element in the subordinate. There is a one-to-one correspondence between these two phrases. For instance, if there is one singular antecedent, there is one singular wh.
Multiple relativization is the break of this one-to-one correspondence. Some rare examples in English are like (106). Notice that there is obligatory extraposition.

(106) A boy, entered the room and a girl went out who were the same age.

In (106) there are actually two antecedents, whereas there is only one plural wh-phrase. This type of symmetric examples can be construed in several languages, e.g. in Dutch (cf. De Vries 1996:17). The construction with a so-called split antecedent must not be confused with complex plural antecedents as in [the boy, and the girl] who met yesterday. The latter type is called hydra by Link (1984). This construction which may be seen as pseudo-multiple relativization, or type zero MR, is also quite interesting, but I will not go into it.

If constructions like (106) are somehow legitimate, logic dictates that there are three possibilities in general:

(107) a. two antecedents <-> one plural relative wh [split antecedent]
b. one plural antecedent <-> two relative whs
c. two antecedents <-> two relative whs

Here two must be understood as “two or more”. Relevant examples could be the ones in (108).

(108) a. * The boy, looked at the girl who both like sports.
b. * (I saw) the two people who, was shaking hands with who.
c. * The boy saw the girl who was waving at who.

In most languages this is not possible, however. Nevertheless, Grosu & Landman (1998:165) report multiple relativization of all three types in Hindi correlative constructions. In that case, the ‘antecedent’ in (107) must be understood as the pronominal correlate in the matrix, since correlatives are head-internal.

Multiple wh-phrases can also be found in Rumanian and Russian irrealis free relatives (cf. Grosu & Landman 1998:157). A final example of multiple relativization I came across, is in Japanese circumnominal relatives (see Itô 1986:118). It is of type B: there are two internal heads in the relative, and there is one plural determiner in the matrix. (Clearly, the structure of circumnominal relatives predicts that only type B could exist: there cannot be more than one matrix role since the relative clause occupies this very position, and it can only be in one position at the same time.)

The four types of multiple relativization are not very clearly distinguished in the literature. Terminology that I have found for multiple relativization is multiple headed, multiple antecedent, multiple wh, split antecedent and hydra. In table 15 I tried to map these terms on the relevant syntactic types in order to facilitate future research.
### Table 15. Multiple relativization: types and terminology.

<table>
<thead>
<tr>
<th>Type</th>
<th>Syntactic Characterization</th>
<th>Terminology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>in matrix</td>
<td>in relative</td>
</tr>
<tr>
<td></td>
<td>(external) antecedent</td>
<td>wh or gap</td>
</tr>
<tr>
<td></td>
<td>(correlative) pronoun or</td>
<td>internal</td>
</tr>
<tr>
<td></td>
<td>determinant</td>
<td>head (&amp; wh)</td>
</tr>
<tr>
<td>0</td>
<td>1 complex</td>
<td>1 plural</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
<td></td>
<td>-</td>
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<tr>
<td>A</td>
<td>2</td>
<td>1 plural</td>
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<tr>
<td></td>
<td>2</td>
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<tr>
<td>B</td>
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<tr>
<td></td>
<td>2</td>
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<td></td>
<td></td>
<td>(+)</td>
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<tr>
<td>C</td>
<td>2</td>
<td>2</td>
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<tr>
<td></td>
<td>2</td>
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<tr>
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<td>(+)</td>
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<td>+?</td>
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</tbody>
</table>

Here a question mark means that the use of the term is a little odd; a plus between brackets means that it may not be visible.

Simple split antecedents of the English type are discussed in Ch7§5.2.12, but the syntax of multiple relativization in general is beyond the scope of this book. A relevant observation is that similar constructions are found with result clauses, degree phrases and conjunctions (cf. Rijkhoek 1998) and other phrases. This suggests that the phenomenon of split dependencies is of a more general nature.

### 8. Conclusion

This chapter has presented a near-complete typology of relative clauses, grounded on earlier work by Lehmann, Smits, Grosu and Landman, Keenan and Comrie, Downing, Givón, and many others. I have compared, modernized, added on and systematized their work, and I have noticed and filled gaps wherever possible, in accordance with the goals set out in the introduction. Crucial characteristics of relatives from a large sample of languages are given in Appendix II. For actual data from particular languages I refer to the authors cited. (This book contains examples from the Germanic languages, mostly.)

The typological information discussed here then serves as a basis for the syntactic analyses in the subsequent chapters. In my view several approaches are necessary at the same time: semantic, functional and syntactic. In this dissertation I will focus on the syntactic side. It should both be based on a thorough and complete typology, and on the other hand be well-founded in a general syntactic theory.