The syntax of relativization

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Citation for published version (APA):

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5 Relative elements

1. Introduction

This chapter discusses the syntax and typology of relative elements. Some of these have been addressed before, e.g. in *wh*-relatives and *that*-relatives of the English type (cf. Ch4§3), but the COMP domain of relative clauses is more complex; moreover not all relative elements are in, or are moved to, the left periphery of the clause. In section 2 Lehmann’s classification of relative elements is presented and revised. Section 3 discusses the repercussion of these findings on the general syntax of relative clauses as proposed in Chapter 4. A tentative analysis of resumptive pronouns and relative markers is put forward. Section 4 presents a fine-grained classification of relative elements, based on the language sample in Appendix II. It turns out that there is a large set of relative elements that is not predicted by the theory discussed so far: relative affixes. Section 5 concludes the discussion.

2. Theoretical predictions of types of relative pronouns and particles

Section 2.1 introduces Lehmann’s classification of relative elements, which is actually a prediction of possible elements, based on the interaction of three functions associated with them. In 2.2 I try to translate these into syntactic characteristics. It is shown that this leads to problems, and therefore I propose a revision of Lehmann’s classification.

2.1. The function of relative pronouns and particles

Relative clauses have their own characteristics which often makes them recognizable as a type. Marking by a relative pronoun or particle is a common way to (partly) obtain this goal. According to Lehmann (1984), the three possible *functions* of a relative element are the following:

(i) *Subordination*. A relative clause is a subordinate clause. This can be indicated by a designated pronoun or particle.

(ii) *Attribution*. The relative clause is attributed to the head. The relative element shows [ϕ-feature] agreement with the head.

(iii) *Gap Construction*. The instance of the head within the relative clause is marked by a representativitive or a companion. It fills the gap [hence bears (abstract) Case, MdV].
Here Gap (German: 'Leerstelle') refers to the representative of the head in the relative clause. It must not be confused with a syntactic trace. (See Ch 2 § 4 for more discussion on Lehmann’s functional scales.)

According to Lehmann all logically possible combinations of these functions actually occur. See table 1, adapted from Lehmann (1984:249).

Table 1. Relative pronouns and particles according to Lehmann (1984).

<table>
<thead>
<tr>
<th>Function</th>
<th>Type →</th>
<th>relative pronouns</th>
<th>relative particles</th>
<th>resumptive pronouns</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>A</td>
<td>D</td>
<td>B</td>
</tr>
<tr>
<td>Subordination</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>-</td>
</tr>
<tr>
<td>Attribution</td>
<td>yes</td>
<td>yes</td>
<td>-</td>
<td>yes</td>
</tr>
<tr>
<td>Gap Construction</td>
<td>yes</td>
<td>-</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

Lehmann calls the distinction between relative pronouns and particles a little arbitrary and uses an ‘at least two functions’ criterion for relative pronounhood, without attaching too much value to it. A priori I would rather say that the main distinction between relative pronouns and particles is the function Gap Construction. Hence the second type will be moved to the relative particles department below, which is why I have called it type D.¹

What are these types? The following explanation is drawn from Lehmann (1984:249-250).

A. Typical relative pronouns seem to serve all three functions. They agree with the head and bear abstract or morphological Case. Examples: English *who*, Dutch *die*.

D. Subordination and Attribution, but no marking of the gap. There is agreement with the head. If there is Case marking, then it is matrix clause Case. Possible examples: Arabic *al-la-dî*, Swahili *ni*.

B. Subordination and Gap Construction, but no Attribution. Hence there must be Case distinction but no agreement with the head. Possible examples (again, according to Lehmann): French *que/qui*,² Italian *che/cui*, Welsh *a/y(r)*.

C. Attribution and Gap Construction, but no Subordination. This type occurs, for example, as the first part of a complex that contains a subordinator, too. Examples: *who* in (Middle) English *who that, wie* in (dialectal) Dutch *die dat*.

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¹ Lehmann calls type D a kind of relative pronoun. This has the consequence that there are non-resumptive and resumptive relative pronouns, which leads to confusion with type G. In my terminology *resumptive pronoun* is reserved for type G. Hence resumptive pronouns are not relative pronouns and vice versa, although strictly speaking (all) relative pronouns are resumptive in the sense that they construct the gap.

² There is a discussion in the literature concerning the deeper analysis of *que/qui*. See e.g. Dekkers (1999) and the references there. For example, Rooryck (1997) treats *que* as a complementizer and *qui* as a complex of *que* and a clitic pronoun. In a way this is reminiscent of the inflected complementizer facts in the Germanic languages discussed in e.g. Haegeman (1983), Bennis & Haegeman (1984), and Zwart (1997).
E. Just Subordination. This type may equal the normal non-relative subordinator or other complementizers. It is the canonical case of a relative particle. Examples: English *that*, Danish *som*.

F. Just Attribution. Possible example: Old-Akkadian *šu*.

G. Just Gap Construction. This concerns neither relative pronouns nor relative particles, but personal or demonstrative pronouns. These *resumptive pronouns are in situ*, contrary to most relative pronouns and particles, which are sentence-initial (or perhaps sentence-final).

Although the logic of table 1 is appealing, I think it is in need of a revision, since the (syntactic) distinction between several types is unclear. This is argued in the next section.

### 2.2. From functions to syntax: a revision of Lehmann (1984)

The three functions *Subordination, Attribution* and *Gap Construction* are reflected in syntax. Subordination is marked by the placement of a relative element at the border of the subordinate sentence (initial in postnominal clauses). This is provisionally called +i/f (initial/final) for the moment. Since this in itself does not express Subordination, let us also assume a syntactic characteristic +sub. These ‘features’ do not necessarily correspond to formal features, as we will see. So we should not attach a great importance to these representations. Attribution is indicated by *ϕ*-feature agreement with the head – i.e. person, number, gender, class (+ϕ, in short) – *and* placement at the sentence border (+i/f). Gap Construction is marked by subordinate clause Case: +subCase, which is nominative/accusative/etc. in a particular case.

These translations of functions into syntactic characteristics are listed specifically in (1).

(1) a. Subordination $\leftrightarrow$ +sub AND +i/f
b. Attribution $\leftrightarrow$ +ϕ AND +i/f
c. Gap Construction $\leftrightarrow$ +subCase

When applied, this gives table 2. Notice that the upper half of table 2 is copied from table 1, only rearranged: I have shifted type D to the right position in the relative particles department.

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3 The later Akkadian *šu* is not declined anymore, hence arguably of another type.
Table 2. Relative pronouns and particles (version 1).

<table>
<thead>
<tr>
<th>Function/feature</th>
<th>Type</th>
<th>relative pronouns</th>
<th>relative particles</th>
<th>resumptive pronouns</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>Subordination</td>
<td></td>
<td>yes</td>
<td>yes</td>
<td>-</td>
</tr>
<tr>
<td>Attribution</td>
<td></td>
<td>yes</td>
<td>-</td>
<td>yes</td>
</tr>
<tr>
<td>Gap Construction</td>
<td></td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>[sub]</td>
<td>[f]</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>[i/f]</td>
<td>[∅]</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>[subCase]</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

But syntactically, much more is involved. Again, within the context of relative constructions and relative pronouns or particles, wh-movement implies subordinate clause Case and placement at the sentence border – and the other way round: +wh ↔ (+subCase AND +i/f). Next, a relative pronoun or particle is either of category D or of category C, that is, pronoun/determiner-like or complementizer-like. I cannot think of other plausible options. By definition, D, and only D, bears Case: +D ↔ +Case. Hence relative pronouns are of category D. For the moment I leave it open what relative particles are (but see below). Notice that it is often not immediately clear if a particular relative element is a relative particle or a relative pronoun to begin with.

Furthermore, the general theory of syntax implies some connections between the relevant features. If an element has subordinate clause Case, it is an argument. Hence it is of category D and has Φ-features: +subCase → (+D AND +∅). If an element in the relative clause has matrix clause Case, i.e. copies the Case of the antecedent, then it must be at the sentence border, because else there is no plausible licensing mechanism: +matrCase → +i/f. (The exact nature of such a mechanism is irrelevant here; it is discussed below.) Finally, if an element is at the sentence border, but there has been no wh-movement, it cannot have subordinate clause Case: (+i/f AND -wh) → -subCase.

All these statements and their implications (where I have used De Morgan’s laws when relevant) are listed in (2) through (4). For completeness I have written down the trivial ones, too.

(2) a. Subordination ↔ (+sub AND +i/f) so (-i/f OR -sub) ↔ no Subordination
b. Attribution ↔ (+∅ AND +i/f) so (+∅ OR -i/f) ↔ no Attribution
c. Gap Construction ↔ +subCase so -subCase ↔ no Gap Construction

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4 Even if some version of the split-CP hypothesis turns out to be correct – see e.g. Hoekstra & Zwart (1994), Zwart & Hoekstra (1997) pro, and Sturm (1996) contra – the C-like heads will be clearly distinct from D. Hence this issue is not directly relevant to the reasoning here.

5 For instance, Afrikaans war looks like a relative pronoun, but it is used as an invariable relative particle; cf. Den Besten (1996) and the references there. Similarly, cf. Pittner (1996) concerning wo and was in dialects of German.
Table 3. Relative pronouns and particles (version 2).

<table>
<thead>
<tr>
<th>Function/feature ↓</th>
<th>Type →</th>
<th>relative pronouns</th>
<th>relative particles</th>
<th>resumptive pronouns</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>Subordination</td>
<td>yes</td>
<td>yes</td>
<td>-</td>
<td>yes</td>
</tr>
<tr>
<td>Attribution</td>
<td>yes</td>
<td>-</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Gap Construction</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>-</td>
</tr>
<tr>
<td>[sub]</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>[i/f]</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>[wh]</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>[Φ]</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>[Case]</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>[matrCase]</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>[subCase]</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>[C]</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>[D]</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

First notice that there is a problem concerning the Φ-features of type B. Φ must be positive because of +subCase; see (3i). On the other hand, it should be negative because of the reverse implication in (2b): if there is no Attribution and i/f is positive, i′ is negative. Lehmann supposes that French que/qui is an example of type

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6 A few implications are perhaps more complex. For instance, particle E is -Φ because of the reverse implication in (2b): no Attribution then -i/f or -Φ. Since Subordination destined i/f already positive, Φ must be negative. For resumptive pronoun G we have: Gap Construction → +subCase → (+D AND +Φ). In this case the reverse implication in (2b) gives negative i/f because Φ is already positive. Subsequently, -i/f gives -wh according to the reverse part of (3a).
B. However, *que/qui* has been analysed differently by many people (cf. fn. 2). Solid empirical proof for type B would involve a language with overt Case and $\phi$-feature marking that uses relative pronouns which show the first but not the latter, which differ from normal complementizers, and which do not allow a doubly filled COMP. French is not such a language. As far as I know, none has been attested, so far. Since the feature contradiction predicts type B to be non-existent, I will not consider it any longer. (Unless of course clear evidence will show up in the future. It would force us to reconsider the list of assumptions and implications above).

A further problem in table 3 is that the status of type D/E/F is unclear. Nothing so far predicts whether these particles have (matr)Case, or whether they are D-like or C-like. Therefore, let us proceed by trial and error. Suppose type D/E/F are all +matrCase. This gives the setting +D, -C, +Case; cf. (3b/d/e). In my view it is unattractive is that type E has now Case without having $\phi$-features. Furthermore, type D and F have Case and $\phi$-features, but this is contradicted by particles like English *that*, which, according to the literature I know, has neither Case nor $\phi$-features. Thus suppose that type D/E/F all have -Case, hence -matrCase, -D, +C; cf. (3b/d/e). But then the problem is that type D and F have $\phi$-features without Case, which is contradicted by examples of relative particles that show matrix clause Case. Therefore – finally – suppose that type D and F have +matrCase (hence +D, -C, +Case), but type E has -Case (hence -matrCase, -D, +C). The results are in table 4.

**Table 4.** Relative pronouns and particles (version 3).

<table>
<thead>
<tr>
<th>Function/feature</th>
<th>Type →</th>
<th>relative pronouns</th>
<th>relative particles</th>
<th>resumptive pronouns</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>relative pronouns</td>
<td></td>
<td>resumptive pronouns</td>
</tr>
<tr>
<td>Subordination</td>
<td></td>
<td>A</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>Attribution</td>
<td></td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Gap Construction</td>
<td></td>
<td>yes</td>
<td>yes</td>
<td>-</td>
</tr>
<tr>
<td>[sub]</td>
<td></td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>[if]</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>[wh]</td>
<td></td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>[$\phi$]</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>[Case]</td>
<td></td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>[matrCase]</td>
<td></td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>[subCase]</td>
<td></td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>[C]</td>
<td></td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>$[$D$]</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

The table shows that D and $\phi$ are systematically linked. If so, $+$subCase $\rightarrow (+$D AND $+$\phi) in (3i) is superfluous and can be replaced by the more general D $\leftrightarrow \phi$, which gives the same results in combination with (3d): $+$D $\leftrightarrow +$Case. This is in accordance with standard assumptions. Now the status of type D/E/F concerning Case and category follows automatically from its $\phi$-feature specification, which is determined by the Attribution function.
However, there is a remaining problem with the results in table 4. The features marked grey are syntax-internal and cannot be phonologically detected in a direct way. The same goes for the function specification. Hence there is no detectable difference between A and C, or between D and F. In other words, if we see a relative pronoun or particle in language X, e.g. *who* in English, there is no clear way to classify it as either A or C. The difference between the two is [+/-sub], but how do we know if *who* expresses subordination (given that there is no additional complementizer)?

The solution emerges if the following statement is acknowledged. It follows from Lehmann's definition of relative clauses in Ch2§4.

**Theorem I**

*All three functions – Subordination, Attribution and Gap Construction – must be represented in a relative clause.*

It is not the case that all three functions are always overt. For instance, in English *that*-relatives only Subordination is visible. This implies that there is an empty element which takes care of the missing functions. In this case it is the empty operator that Chomsky (1977) argued for, i.e. an empty relative pronoun of type C. Thus there is a division of labour between a D-like element in SpecCP and the particle in C.

Since there cannot be a SpecCP without there being a C head according to the X'-theory, it is superfluous to assume that SpecCP may represent Subordination, because this is already what C does, whether it is overt or not.

**Theorem II**

*In a relative clause there is a division of labour between the complementizer C and the determiner phrase with head Drel in SpecCP:*

- *C and only C expresses Subordination;*
- *Drel and only Drel expresses Attribution, and possibly Gap Construction.*

**Theorem III**

a. *In a relative clause Drel and C are always present.*

b. *Drel and C can each be overt or covert, depending on the particular language (or variant within a language).*

**Theorem IV**

a. *C bears neither Case nor *ϕ*-antecedent-features.*

b. *D bears both (abstract) Case and *ϕ*-features.

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Nevertheless, there are examples of inflected complementizers, e.g. in West Flemish. In those cases C agrees with the subject (not with SpecCP). This phenomenon has been described in terms of head raising of Agr5 to C (see e.g. Zwart 1997). If so, the idea that *ϕ*-features do not originate in C can be maintained.
These assumptions solve the problems mentioned and simplify the picture substantially. The function Subordination is expressed by complementizers, not by a pronoun-like element in SpecCP. Hence type A and D do not exist at all. This explains why there is no clear evidence which distinguishes possible type A and D elements from type C and F, respectively. Only Lehmann’s type C, E, F and G survive the interaction of function with syntax.

Thus we reach the final table 5. I will no longer use reference letters. Type C will be called relative pronouns, type E relative complementizers, type F relative markers, and type G resumptive pronouns from now on. The relative complementizers and relative markers are grouped together under the notion relative particles.

Table 5. Relative pronouns and particles (final theoretical version).

<table>
<thead>
<tr>
<th>Function/feature</th>
<th>Type →</th>
<th>relative pronouns</th>
<th>relative particles</th>
<th>resumptive pronouns</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>relative complementizers</td>
<td>relative markers</td>
</tr>
<tr>
<td>Subordination</td>
<td>-</td>
<td>yes</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Attribution</td>
<td>yes</td>
<td>-</td>
<td>yes</td>
<td>-</td>
</tr>
<tr>
<td>Gap Construction</td>
<td>yes</td>
<td>-</td>
<td>-</td>
<td>yes</td>
</tr>
<tr>
<td>[sub]</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>[i/f]</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>[wh]</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>[θ]</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>[Case]</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>[matrCase]</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>[subCase]</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>[C]</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>[D]</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

Importantly, each type can be overt or covert; and every relative clause contains a determiner-like and a complementizer-like element.

3. The syntax of relative elements

This section discusses the repercussion of the results from the previous section on the syntax of relative clauses. Subsection 3.1 is on the traditional COMP domain, hence on relative pronouns and complementizers; 3.2 discusses resumptive pronouns; 3.3 relative markers.

3.1. The COMP domain: relative pronouns and complementizers

Considering only relative pronouns and relative complementizer particles for the moment, we have the following set of possibilities for the COMP domain (where
COMP must be understood as C plus SpecCP). Notice that all three functions (Subordination, Attribution and Gap Construction) are represented, whether lexical (lex) or covert (ə).

Table 6. The COMP domain of relative clauses.

<table>
<thead>
<tr>
<th>$D_{rel}$ ($\text{in SpecCP}$)</th>
<th>$C$</th>
<th>features of $D_{rel}$</th>
<th>$f.$ of $C$</th>
<th>example</th>
</tr>
</thead>
<tbody>
<tr>
<td>lex rel. pronoun</td>
<td>lex rel. compl.</td>
<td>$\phi$ : subCase : wh</td>
<td>sub</td>
<td>who that</td>
</tr>
<tr>
<td>lex rel. pronoun</td>
<td>$\emptyset$ rel. compl.</td>
<td>$\phi$ : subCase : wh</td>
<td>sub</td>
<td>$\emptyset$</td>
</tr>
<tr>
<td>$\emptyset$ rel. pronoun</td>
<td>lex rel. compl.</td>
<td>$\phi$ : subCase : wh</td>
<td>sub</td>
<td>$\emptyset$</td>
</tr>
<tr>
<td>$\emptyset$ rel. pronoun</td>
<td>$\emptyset$ rel. compl.</td>
<td>$\phi$ : subCase : wh</td>
<td>sub</td>
<td>$\emptyset$</td>
</tr>
</tbody>
</table>

Complete examples are sketched in (5), based on the analysis of postnominal relatives in Chapter 4. Sentence (5a) is not standard English, but it is a common variant in the Germanic languages.9

(5) a. I know [DP the [CP [DP-rel man $k$ [D-rel whom] $t_h$] [c that] [IP you saw $t_t$]]
   b. I know [DP the [CP [DP-rel man $k$ [D-rel whom] $t_h$] [c $\emptyset$] [IP you saw $t_t$]]
   c. I know [DP the [CP [DP-rel man $k$ [D-rel $\emptyset$] $t_h$] [c that] [IP you saw $t_t$]]
   d. I know [DP the [CP [DP-rel man $k$ [D-rel $\emptyset$] $t_h$] [c $\emptyset$] [IP you saw $t_t$]]

$D_{rel}$ bears a wh-feature, checks subordinate clause Case and obligatorily agrees with the head noun, as argued in Chapter 4. Therefore it automatically fulfils the requirements in table 6. Since there is always movement to SpecCP, C is always syntactically present, hence it may bear a subordination function. I do not know if it is necessary that C bears a formal feature corresponding to subordination. It is not strictly needed in the analysis. I will not discuss this matter any further.

Whether $D_{rel}$ or C is spelled out is difficult to predict by syntax.10 It depends on at least four things. First it is a lexical matter: does a particular language have empty and/or full relative pronouns or particles to begin with? Dutch, for instance, does not have empty relative pronouns: de man *(die) ik zag ‘the man (who) I saw’.11 Second, it must be possible to parse the relative clause. For instance, I saw the man who left in English cannot be replaced by I saw the man left, because the latter leads to interpretation problems.12 Third, there is a correlation between the Syntactic/Semantic Function Hierarchy and anaphoric scales: the lower the function of the gap

---

8 Here I abstract away from pied piped constituents.
9 See e.g. Lehmann (1984), Pittner (1996), Dekkers (1999), and Bianchi (1999).
10 Nevertheless, there are OT approaches that offer new opportunities here; see e.g. Pesetsky (1997), Dekkers (1999) and Broekhuis & Dekkers (2000). Notice that, from a cross-linguistic view, the 'Doubly Filled COMP Filter' as formulated in Chomsky & Lasnik (1977), has a limited scope and lacks explanatory power. See also Bok-Bennema (1990) and Dekkers (1999) on this subject.
11 However, see Broekhuis & Dekkers (2000) for an original view on Dutch relative dat, which they suppose to be a complementizer. This would imply that there is an empty (or deleted) relative operator.
12 Still, subject relatives without a marker are reported to occur in some dialects of English – see e.g. Givón (1984:662/3) – probably in non-confusing contexts.
(roughly S > DO > PrepObj) the more explicit the anaphor (roughly o < rel. particle < rel. pronoun). This has been discussed in Ch2§4; see also Keenan & Comrie (1977), Lehmann (1984), Bakker & Hengeveld (2001). Fourth, the extra-linguistic setting plays a role. For example, there is optionality between the man I saw and the man that I saw. \[13\] The only thing that can be said is that the latter is a little more explicit hence more likely to be used in a formal setting.

A subset of languages with relative complementizer particles have the possibility of ‘zero relativization’ as in the man I saw. According to Smits (1988:70-71) this is the case in Norwegian, Danish, Swedish and English, but not in the other Germanic and Romance languages. He states the following conditions on the use of zero relatives:

\[(6) \text{ An empty COMP in a relative clause is possible only if:} \]
\[
\text{a. the relative clause is restrictive,}\n\]
\[
\text{b. there can be a relative complementizer particle,}\n\]
\[
\text{c. the relative gap is not the subject of the relative clause, and}\n\]
\[
\text{d. the relative has not been extraposed (except in Danish).}\n\]

The reason for condition (6a) will be discussed in Chapter 6, section 5.4; the reason for (6d) is closely related to it.\[14\] Condition (6b) is a coincidental lexical matter; it is not true universally – see below. As explained, condition (6c) follows from the word order of English and some parsing/recoverability conditions. This reasoning carries over to the related continental Scandinavian languages. Condition (6c) is often understood to be universal as well (see e.g. Downing 1978:385, also mentioned in Ch2§5). This is a mistake, however. Appendix II, table 15, shows that zero relativization is the primary strategy in Komso, Lakota, Mbum, Moore and Yukatekan – which have postnominal relative clauses – and in Alekano, Cuzco Quechua, Finnish, Ijo, Japanese, Nama, Saho-Afar and Yurok – which have prenominal relatives. In all these languages subject relatives are possible. Moreover, there are several languages where zero relativization is a secondary option. Condition (6c) happens to be true for standard English and continental Scandinavian, which can be explained by parsing conditions; it happens to be not true for the other languages mentioned, which, not surprisingly, have different word

\[13\] This is of course a favourite theme in OT approaches.

\[14\] As for (6a), I will argue that an appositive is a kind of free relative that is in apposition to what appears to be the antecedent. It can then be argued that the COMP domain cannot be completely empty, as is the case in in free relatives. Condition (6d) is illustrated for English in (i).

(i) The car is beautiful that/*o you bought yesterday.

I will argue in Chapter 7 that an extraposed clause is embedded in a specifying phrase that is conjoined to a part of the matrix clause. The repeated antecedent in the second conjunct is deleted. This would lead to an empty COMP domain if there were no relative element. Hence the same condition that prohibits a phonologically empty COMP domain in appositives covers the extraposition facts. The Danish exception to this generalization is illustrated in (ii), taken from Smits (1988:71).

(ii) Jeg lagde den pladen på som/*o Peter gav mig.

I put the record on (that) Peter gave me

I have no explanation for this.
orders. Hence condition (6c) is not a syntactic universal. Neither is (6b), since there are no relative particles in most of the languages mentioned.

3.2. Resumptive pronouns

Resumptive pronouns are personal or demonstrative pronouns that occupy the gap, but they are not sentence-initial (unless by coincidence), so they are not wh-moved. An overview of languages using resumptive pronouns is given in Appendix II, table 9. According to Sells (1984), resumptive pronouns are pronouns bound by a wh-operator, hence they are interpreted as bound variables, which is similar to the interpretation of the gap (i.e. a trace) in a non-resumptive relative strategy. This distinguishes them from free anaphoric pronouns.

Some languages, including variants of English, apparently use resumptive pronouns as a repair strategy. An example is I am looking for those documents which I can never remember where I put them (taken from Haegeman 1994:410). Without the resumptive pronoun them the sentence would be ungrammatical, since them is in an island, hence normal wh-movement would be impossible. In fact, the use of a pronoun is impossible in contexts that are not an island, e.g. the man that I saw (*him). Sells (1984) argues that the English-type repair strategy does not involve true resumptive pronouns. He calls the pronouns involved intrusive pronouns. The reason is that these cannot be interpreted as bound variables. Rather, they behave like relative pronouns in appositive relatives with respect to the antecedent. See Sells (1984:VI, 1985) for details, and Chapter 6 of this book for some discussion on the interpretation of (relative pronouns in) appositive relatives.\textsuperscript{15} Another reason to distinguish the repair strategy from the resumptive pronoun strategy is that the combination of a relative pronoun and a resumptive/intrusive pronoun is never possible in the resumptive strategy (see below).

The discussion in this section only concerns the true resumptive pronoun strategy, in languages where they are used on a regular basis. Notice that the use of resumptive pronouns in correlative constructions is not relevant here; but see Ch4§6.

Some findings concerning the resumptive strategy that can be inferred from Appendix II, table 9 – which is based on data provided by Lehmann (1984), Peranteau et al. (1972), Givón (1984), and others – are stated in (7).

(7) Findings about the resumptive pronoun strategy

a. Resumptive pronouns exclude relative pronouns (cf. Downing (1978) and Ch2§5).

b. Resumptive pronouns almost always occur in addition to a relative particle or marker. (Exceptions: Diegueño, Ganda, Nama.)

\textsuperscript{15} It might be that the use of intrusive pronouns is more widespread than Sells seems to assume. If I am not mistaken, he does not actually show that the apparent use of resumptive pronouns at a long distance (in islands) in e.g. Swedish, Hebrew, Welsh, etc. is different from the English intrusive strategy. Perhaps even the use of a pronoun in a prepositional context is intrusive, since a PP is an island for movement in many languages.
c. Resumptive pronouns occur in postnominal relatives. (Exceptions: Chinese and Nama; cf. Ch2§5.)

d. Resumptive pronouns occur with all basic word order strategies, although SVO is the most common. (Examples: SVO: Akan, Hebrew; SOV: Farsi, Urhobo; VSO: classical Arabic, Tongan.)

e. Resumptive pronouns can be clitics or words.16 (Examples of clitics: proclitic in Ganda, Nahuatl; enclitic in Akkadian, Arabic.)

f. Resumptive pronouns are (always?) used conditionally or perhaps optionally, next to a zero (gap) strategy.17,18

At first sight it seems that (7a) must be true by definition, since resumptive pronouns and relative pronouns compete for the same base position — but see below. Concerning (7b), it is quite understandable that a relative clause preferably has some marker; and a resumptive pronoun itself does not mark the clause as a relative. I do not know a syntactic explanation for (7c), but the exceptions of Chinese and Nama indicate that it is only a tendency; and in general, kataphora is less usual than anaphora for discourse reasons. Notice furthermore that postnominal relatives are the most common type of relative. Property (7d) is not surprising at all, since postnominal relatives occur with all word orders (see Appendix II, table 24). Neither is (7e) startling: pronouns can be clitics or words in general.

The finding in (7f) might be taken to indicate that resumptive pronouns are an epiphenomenon. However, since they occur in more than 15% of the languages in the large sample in Appendix II (which, however, is not statistically balanced), and, moreover, constitute the primary strategy in many of these languages, I believe the resumptive strategy cannot be ignored. Nevertheless, the resumptive pronoun strategy is strange indeed. I have argued that every relative clause has overt or covert wh-movement. But if a resumptive pronoun takes the place of the gap, then where is the relative operator/pronoun? The finding in (7a) seems to imply that there is none. This cannot be correct, given the interpretation as operator-bound variables mentioned before. Hence there must be a relative operator.

A potential solution is the assumption that a relative operator could be base-generated in the COMP area (e.g. Shlonsky 1992). However, this is at odds with the promotion theory of relative clauses. (For instance, it would potentially prohibit raising; moreover, it is not immediately clear how this explains the licencing of the operator's abstract Case.) Furthermore, it would predict an unbounded dependency between the operator and the resumptive pronoun. Although there are some examples of resumptive pronouns in island contexts (e.g. Sells 1984:6,ex(3b) in

16 Especially criticizd resumptive pronouns can easily be confused with (non-resumptive) relative affixes or non-relative verbal agreement. See section 4.1 below, which relies heavily on the detailed descriptions in Lehmann (1984).

17 Often they seem to be optional for objects, but obligatory for lower functions. Shlonsky (1992), followed by Reintges (2000) on Old Egyptian, argues that optionality does not exist on closer inspection, at least for some of the languages involved, and supposedly for all; see below.

18 I do not have information on conditionality or optionality in Akan, Fufulde, Diegueño, Urhobo, Ganda, and Nahuatl.
Hebrew), this is not generally the case. For instance, Sells (1984:213ff) shows that the resumptive relative strategy in Igbo is sensitive to some island constraints.

As far as I can see, there is a lack of systematic data concerning the issue of island effects. A problematic aspect of potential subjacency violations in the resumptive strategy, is that it cannot be distinguished from a repair strategy as illustrated for English above. That is, a potential repair strategy with an intrusive pronoun is not visibly different from the regular resumptive pronoun strategy in grammatical sentences. Since the assumption of a base-generated operator in COMP cannot explain the Igbo pattern, and is theoretically at odds with the general assumptions throughout this book, I will reject it, and rather assume the following:

(8) Hypothesis on relativization and the resumptive strategy
a. All languages have wh-movement in relative clauses.

b. Some languages have a repair strategy for ungrammatical relative clauses using intrusive pronouns (where ‘ungrammatical’ means that wh-movement would violate island constraints). It is different from the resumptive pronoun strategy, and need not be discussed here. (The epiphenomenon is interesting in itself, of course; see also footnote 20).

c. There are languages that have a resumptive strategy of relativization.

d. Some of the languages with a resumptive strategy are part of the set of languages in (b), too: they use (intrusive) pronouns to repair ungrammatical relative clauses. Since this strategy mimics the normal (resumptive) strategy in these languages, the consequences of (a) are apparently blurred.

I must mention that Shlonsky (1992) and Reintges (2000) argue on the basis of Hebrew, Palestinian Arabic and Old Egyptian, that regular resumptive pronouns are also instances of ‘last resort’. They are inserted if language-particular circumstances do not licence a trace at the position concerned (for various possible reasons), or if a trace would lead to ambiguity. If they are correct (but it remains to be shown for the majority of languages involved), optionality between the zero strategy and the resumptive pronoun strategy does not exist.\(^\text{19}\) Notice that last resort of the Shlonsky/Reintges type differs from the repair strategy mentioned in (8b/d). Roughly speaking, in the former a trace would be illegal or unwanted; in the latter the wh-movement itself is impossible.

What I am interested in here, is the syntax of the resumptive pronoun strategy in case it is applicable. One option might be that the resumptive pronoun is a spelled-out trace; cf. Reintges (2000). If so, why are there no instances of a double lexical D? That is, why is the combination of a relative pronoun (the moved D) and

\[^{19}\text{If this turns out to be untenable for some languages involved, another possible option concerning optionality may be that these languages have a parallel grammar in which there is a zero strategy. If in this parallel grammar there is a negative pied piping parameter (or a filter which prohibits PPs containing an empty operator in SpecCP), it follows that it is inaccessible in case of a prepositional context – given that adposition stranding is often impossible, too – hence only the grammar with the resumptive strategy can be used; thus there are ways to limit optionality to certain syntactic roles.}\]
a resumptive pronoun (the lexical trace) never attested? A partial answer may be
that a resumptive pronoun is the lexical trace of an empty relative pronoun (i.e. a
relative operator). This would facilitates the possibility of just a resumptive pronoun,
but it still does not explain why the relative pronoun must be empty.

A way towards the solution is to generalize the idea of ‘trace pronunciation’ to
all syntactic movements. The overt/covert distinction can be accounted for in terms
of feature movement versus lexical movement, as argued for in Chapters 1 and 4. If
only the formal features move, the ‘trace’ still contains the lexical content, so there
is in situ pronunciation. If the whole head moves, there is no lexical material left in
situ. The application of the former option (feature movement) with respect to the
relative pronoun gives the structure in (9).

\[
(9) \quad D [_{CP-rel} [_{DP-rel} NP \ FF(D_{rel}) \ t_{np}], (C) [_{np} ... DP \ V^{t}, \ ]_{t} ...PF(D_{rel})...],
\]

the man \( \theta \) (that) I saw him

The advantages of (9) are the following:
- No ad hoc ‘spell-out trace’ procedure is needed. The resumptive pronoun
strategy is a normal instance of covert movement.
- The complementary distribution between relative pronouns and resumptive
pronouns follows automatically: if there is overt movement, a relative pronoun
appears; if there is covert (feature) movement, a resumptive pronoun appears.

But there are still clear disadvantages with respect to (9):
- Why is the format of the in situ pronoun demonstrative/personal and not
relative/question?
- Given the promotion theory, why does NP, the antecedent within DP\textsubscript{rel}, move
overtly? How can only part of a constituent be spelled out/left behind?

Fortunately, there is an alternative to (9) that does not raise these problems. This
option is not available in the standard theory, so it may be another advantage of
the promotion theory of relative constructions. The idea is that D does not move at all,
neither overt nor covert. Movement solely involves NP. The only necessary
assumption is that the formal \( wh \) feature involved associates with NP, not with DP.
The rest follows from the independently motivated procedures in Ch4; see (10).

(10) The syntax of the resumptive strategy
   a. The formal \( wh \) feature needed to build a relative clause is associated with
      the head NP, not with its determiner D (normally D\textsubscript{rel}).

\footnote{Actually, the repair strategy of ungrammatical (subjacency-violating) relative clauses (8b) does have
the possibility of a combination of a relative pronoun and a resumptive pronoun, depending on the
language. Therefore the spelled-out trace theory may be the correct syntactic description of this
strategy.}
b. Therefore D cannot be a relative/question $D_{rel}$. (It is also not an article since it is independent: it will be disconnected from NP, see below.) Hence D is a resumptive demonstrative/personal pronoun $D_{res}$.

c. The head NP moves to SpecDP to check the $\phi$-feature agreement. There is no incorporation. Recall that the Case feature may be different.

d. $D_{res}$ checks subordinate clause Case.

e. NP moves to SpecCP and checks the $wh$-feature.

f. N incorporates overtly or covertly into the matrix clause $D_{matr}$.

g. $N + D_{matr}$ agree and check matrix clause Case.

This is shown in (11)

$$FF(N) + D_{matr} \left[ CP \left[ NP_{rel} PF(N) \right] \right] \left[ (C) \left[ IP \ldots \left[ DP \left[ D_{res} \left[ t \right] \right] \right] \right] \right]$$

the man (that) I saw him

The analysis has the advantages but not the disadvantages of (9). It is also fully compatible with the assumptions on the syntax of relatives made before. Notice that assumption (10a) can be seen as another instance of the pied piping parameters discussed in Chapter 4. In the resumptive strategy there is an 'extreme lack of pied piping' (or perhaps negative pied piping): not even the DP-shell belonging to an NP is moved along.

I conclude somewhat tentatively that the phenomenon of resumptive pronouns can be dealt with satisfactorily from the perspective of the promotion theory of relativization.  

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21 I have ignored the issue of resumptive pronouns in $wh$-questions, so far. Sells (1984:18/20ff) claims that these show the same pattern as in relative clauses (without actually showing the relevant data). I believe that this is wrong. Rather, we predict the absence of resumptive pronouns in questions - cf. (11), where there is no room for both an interrogative and a resumptive pronoun - but of course the presence of intrusive pronouns in the same way as in relatives. This is confirmed by Hebrew, where questions show a trace, except in islands. The same applies to Swedish. Moreover, the data from Reintges (2000) on Old Egyptian show that resumptive pronouns in questions are avoided, except in one type of subject question, which is phrased as a cleft sentence; hence the resumptive is actually in the relative clause part of the construction. I suspect that many apparent instances of resumptive pronouns in $wh$-questions can be explained by the fact that the sentence is really a cleft-construction, especially in African languages.

Technically, another question remains: why can $wh$ be associated with $NP_{rel}$ in relative clauses but apparently not in other contexts such as questions? The answer is: perhaps it could, but that does not lead to a different output, so there is no need to. Suppose something like /D man/ is generated in an interrogative sentence, and the $wh$-feature is associated with man. D and N cannot differ in Case, because there is no higher clause determiner with which N can be associated. So N overtly or covertly incorporates into D so that Case and agreement can be checked. If so, $wh$ is present in D, too. Therefore D may be interrogative (instead of demonstrative/pronominal) and $wh$-movement involves raising of DP. (NP cannot move alone, since its head is associated with D.) Apart from this technical explanation, a formulation like "*Man did you see him?" meaning "Which man did you see?"" seems an awkward way to express an open question, especially because it looks like a (grammatical) left-dislocation construction such as "This man, did you see him?", which is a yes/no question.
3.3. Relative markers

Relative markers as introduced in section 2, complicate matters as well. I have defined a relative marker as a type of relative particle that has just the Attribution function. Syntactically, it must be a D-like element which has (abstract) Case and \( \phi \)-features. The function Gap Construction must have another source; a relative marker cannot undergo \( \text{wh} \)-movement, since in that case it would have subordinate Case and hence be a relative pronoun. This raises the question what the position of a relative marker is. It seems that it cannot be base-generated in SpecCP because that is where the relative operator and the head move to.

Consider the languages reported to have relative markers. These are classical Arabic, Bainouk, Crow, ancient Egyptian, Éwé, Geez, Hungana, Kupsabiny, and Wolof (cf. Appendix II, table 11). Four of these languages have a classifier system: Bainouk, Hungana, Kupsabiny and Wolof. I will first show that they only have apparent relative markers, and I will tentatively propose an analysis in section 3.3.1. Section 3.3.2 deals with 'real' relative markers.

3.3.1. Apparent relative markers: classifiers

Classifiers are present on both determiners and nouns.\(^{22}\) Hence a relative construction is expected to look like (12), schematically:

\[
(12) \text{ CL-D} [\text{CP-rel} [\text{DP-rel} [\text{NP CL-N}] \text{CL-D} \text{rel t}\_\text{DP}]] (\text{C}) [\text{IP} \ldots t; \ldots]
\]

Suppose that \( \text{D}_{\text{rel}} \) is an empty operator. If so, the classifier that belongs to it looks like a sentence-initial relative particle. Since classifier languages do not have an overt Case system, this particle seems to be a relative marker.

For example, in Hungana there is no regular overt determiner. Hence (12) predicts the relative construction to be [CL-N CL IP]. This is borne out; see (13), taken from Lehmann (1984:102).

\[
(13) \text{k}i \text{ ki a-swiim-in Kipes zoon}
\]

\[
\text{CL7:chair CL7 SBJ/CL1-bought-PRET Kipes yesterday}
\]

‘(the) chair which Kipes bought yesterday’

In this context the second classifier is the apparent relative marker.\(^{23}\)

In Wolof, determiners can be present. The relative construction is postnominal, the (outer) determiner is construction final. Hence the structure of the relative is (14a); (14b) shows schematically what is visible.

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\(^{22}\) I will not go into the details of classifier systems. The discussion here is based on examples from Niger-Congo and Nilo-Saharan languages. Classifiers in Mandarin Chinese and Cantonese are discussed in e.g. Cheng & Sybesma (1999), albeit not from the perspective of relative clauses.

\(^{23}\) One may wonder why a normal argument is not a DP like \( [\text{DP CL-} \omega [\text{NP CL-N}]] \). First, I am not sure that the DP level is always present. Second, CL CL N is stuttering: in this context one of the two equal classifiers is superfluous and could be deleted at some level.
RELATIVE ELEMENTS

(14) a. \[ CP_{rel} [DP_{rel} [\text{NP CL-N}] CL-D_{rel} t_{np}]] (C) [IP \ldots t_i \ldots] \] CL-D
   b. CL-N CL-D_{rel} IP CL-D

Again, this is confirmed by the actual data; see (15), from Lehmann (1984:103):

(15) gor g-u xam addina g-i
    CL-man CL-D3 know world CL-D1
    'this man who knows the world'

The relative operator is visible as a neutral determiner. In fact, if (14) is correct, it is a relative pronoun (!), not a relative marker. The same conclusion must be drawn for Hungana: the classifier is a part of the relative operator.

I don’t have information on determiners in Bainouk and Kupsabiny. Probably the patterns match either the system in Wolof, or the one in Hungana. I tentatively conclude that apparent relative markers in classifier languages are actually partly visible relative pronouns.

3.3.2. Real relative markers?

This leaves us with classical Arabic, Crow, ancient Egyptian, Êwé, and Geez.\(^{24}\) Unfortunately the information I have on ancient Egyptian is insufficient for an analysis. Crow and Êwé do not have morphological Case (although there is object agreement on the verb), hence the possibility that the relative markers in these languages are in fact (deficient) relative pronouns cannot be excluded without further information. Clearer instances of relative markers are to be found in Geez and classical Arabic, where there is an overt Case system. The relative marker has a demonstrative part, agrees with the head noun, and if there is visible Case, it bears matrixCase. Apart from this, there is a resumptive clitic which, if I understand correctly, seems to be optional in object relatives and obligatory in lower functions. An abstract rendering is (16), where RM means ‘relative marker’:

(16) D-N_{matrCase} RM_{(matrCase)} [IP \ldots (GA_{subCase}) \ldots]

Let me repeat the properties of relative markers.

(17) On relative markers
   a. A relative marker is a D-like element. It cannot be in C (the
      complementizer position). It agrees with the head noun and bears
      (abstract) matrixCase.
   b. A relative marker competes for the same ‘surface’ position as the relative
      operator (and the head noun, in the promotion theory), i.e. SpecCP.
   c. An overt relative pronoun excludes the presence of a relative marker.

\(^{24}\) According to Lehmann (1984:103) the relative marker has evolved into a relative complementizer in Egyptian and Arabic.
In fact (17) suggests that a relative marker is a special instance of $D_{rel}$. This hypothesis is supported by a phenomenon that is called *attractio relativi*, which means that a relative pronoun gets matrix clause Case. It is attested occasionally in e.g. ancient Greek and Latin. It may be seen as a stylistic marking or a grammaticalized performance error. Two adjacent words (the head noun and $D_{rel}$) are Case-matched. See Bianchi (2000b) for a more sophisticated discussion. It could be that this rare and counter-intuitive strategy is systematically applied in a small number of languages with relative markers that are overtly Case-marked. That is, relative markers can be analysed as relative pronouns which suffer from 'attractio relativi'.

Matters seem to get worse when the resumptive pronoun in (16) is taken into consideration. I have argued in §3.2 that in case of a resumptive pronoun it is the head NP that moves to SpecCP, instead of $D_{rel}$. The stranded D becomes the resumptive pronoun. But if so, where is the relative marker?

Therefore consider the following possibility: base-generation of a DP marker in SpecCP. In that case the head NP cannot land in SpecCP, but suppose it could land in Spec$D_{RM}$. The structure is given in (18), where $D_{res}$ is the resumptive pronoun:

(18) $D_{res} \left[ CP \left[ DP \left[ NP_{rel} \right] \right], D_{RM} \right] \left[ \left[ IP \left[ DP \left[ D_{res} \right] \right] \right] \cdots \right]$

Consider the derivation of (18). The *wh*-feature is associated with head NP (cf. §3.2). NP moves to Spec$D_{res}$. Agreement between NP and $D_{res}$ is checked in a spec-head configuration. (N cannot incorporate into $D_{res}$ because their Cases do not match.) $D_{res}$ checks subCase in the relative clause. $D_{RM}$ is generated in SpecCP.²⁵ NP is attracted and lands in the highest position in CP: SpecDP in SpecCP. (Note that this is a c-commanding position in an antisymmetric system.) This is possible because NP and $D_{RM}$ fully match: both in Case and $\phi$-features. $D_{RM}$ checks all its features with NP. Finally, N is associated with the matrix D, as described several times before. Hence NP must have matrix Case, because else the derivation crashes. This implies that $D_{RM}$ must have matrix Case, too. Thus it might be that a derivation like (18) is allowed; albeit that the selection of $D_{RM}$ in SpecCP is somewhat odd, of course. Notice that this is only possible within the promotion theory of relative clauses.

In short, relative markers seem to be a diffuse category of elements that are hard to explain at first sight. Some of them do not demonstrate Case-marking, especially classifiers. As I have shown above, these are (remnants of) relative pronouns. Others may be relative pronouns that undergo *attractio relativi*. Others are determiners base-generated in SpecCP, an analysis which permits the presence of resumptive pronouns or clitics. I conclude that the theory presented so far predicts that relative markers exclude relative pronouns but not resumptive pronouns. Clearly, a much more detailed study is necessary to investigate the validity of the suggestions made in this section.

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²⁵ Notice that this is not possible in a (non-relative) context where there is no raising of an NP, because then $D_{RM}$'s Case features remain unchecked.
4. A fine-grained typology of relative elements

This section briefly discusses all types of relative elements found in the data patterns listed in Appendix II, which is based on data provided by Lehmann (1984), Peranteau et al. (1972), Givón (1984), and several others. I will add some fine-tuning to the four main classes of relative elements predicted from the theory: relative pronouns, relative complementizers, relative markers, resumptive pronouns. Moreover, there turns out to be a large, diffuse fifth main class of relative elements: the relative affixes.

4.1. A classification of relative elements

Relative pronouns are pronouns that undergo wh-movement. See also section 3.1, and Appendix II, table 8. They are in a sentence-initial position, bear (abstract) subCase and (abstractly) agree with the head noun, if present. They may be morphologically complex. Often there is a demonstrative and/or a question-related morpheme. Relative pronouns may be classified as follows:

- **RP₉** A relative pronoun in d-format, i.e. with only a demonstrative core. Example: Danish *den*, Dutch *die*.
- **RP₉** A relative pronoun in wh-format, i.e. with an interrogative morpheme (apart from a possible demonstrative morpheme). Examples: English *who*, Serbo-Croatian *koje*, Latin *quis*.
- **RPₛ** A relative pronoun in a specialized format, or at least with a specialized morpheme (next to a possible wh- and/or d-morpheme). Examples: Hindi *jo, jo*, Slovenian *kdör*.

The use of relative pronouns is limited without exception to postnominal relatives and correlatives. Notice that relative pronouns predominantly occur in Indo-European languages. Nevertheless, they can be present in languages from other families, e.g. in Tzeltal (a Maya language), Finnish or Erzya (Ugric languages).

Resumptive pronouns are personal or demonstrative pronouns. These have already been discussed in section 3.2. See also Appendix II, table 9. They can be divided into clitics and words. The distinction between an (object) agreement affix and a resumptive clitic is not always clear. Contrary to relative pronouns, resumptive pronouns are in situ, or at least not sentence-initial.

Resumptive pronouns occur in many different language families. Examples of languages that use resumptive clitics are classical Arabic, Ganda or Welsh. (These are denoted by GA in Appendix II: the Gap is filled by an Affix.) Examples of full

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26 An extraordinary phenomenon occurs in Bambara, Maninka, Mandinka and Vai, four related Mande languages from the Niger-Congo phylum. There are relative pronouns in interrogative format, e.g. *min* in Bambara. The predominant relative strategy is correlative. The interesting thing is that the relative pronoun and head noun are in situ. This would make sense only if these languages have an in situ question strategy, too, as in Chinese. I don't have further information on this matter.
Resumptive pronouns are found in Chinese, Diegueño, or Urhobo. (They are denoted by GD: the gap is filled by a demonstrative element.) The correlative strategy also uses resumptive pronouns, but in the matrix clause - the relative clause contains the head noun. (The correlative demonstrative is denoted by cD.) It must be noted that in several languages resumptive pronouns in a correlative sentence may be replaced by nothing (i.e. an empty pronoun), and sometimes even by a full DP including a copy of the head noun. The former option is conditioned by the possibility for a language to drop pronouns in general. The latter option must be compared to the use of full nouns in two subsequent sentences where a pronoun in the second sentence would have sufficed. Hence these phenomena are not problematic for - and in fact unrelated to - the theory of relative clauses.

Everything which is not a relative pronoun or resumptive pronoun is called a relative particle. There are several kinds of relative particles. They are found in many, if not all, language families. The main characteristic of a relative particle is that it does not occupy the gap in a relative clause (at any stage of the derivation). I distinguish three classes: relative complementizers, relative markers and relative affixes.

The canonical relative particle is a relative complementizer (denoted by RC). See also section 3.1 above. There is no case and no agreement with the head noun. A relative complementizer occupies the complementizer position. There is no movement involved. Again, we may distinguish several types; see also Appendix II, table 10:

<table>
<thead>
<tr>
<th>RC_{SR}</th>
<th>A relative subordinator equals another complementizer. Examples: English that, Norwegian som, Farsi ke.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC_{sp}</td>
<td>A particle specialized for relative clauses. Examples: Czech co, German (dialectal) wo or wos.</td>
</tr>
<tr>
<td>RC_{NR}</td>
<td>A general nominalizing particle also used for relatives. Example: Mandarin Chinese de. Similar examples are from Burmese and Lahu.</td>
</tr>
<tr>
<td>RC_{AT}</td>
<td>A general attributive particle also used for relatives. An example is Old Akkadian šu.</td>
</tr>
</tbody>
</table>

Relative complementizers predominantly occur in postnominal relatives. However, there are some rare examples of RC_{SR} in other main types, e.g. in Dagbani circumnominal relatives, in Gaididj correlatives, and perhaps a clause final one in Oromo prenominal relatives. Notice further that in Hebrew, Urhobo and Warlpiri the relative complementizer cliticizes onto the first word in the relative clause.

The second class of relative particles is the group of relative markers. These have been discussed in section 3.3. See also Appendix II, table 11. They occupy the first position in the relative clause. They show at least some overt evidence of agreement with the head noun. Therefore they are not in the complementizer

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27 These particles are clause-final, contrary to all other relative complementizers (except in Oromo); therefore their classification as relative complementizers is tentative.

28 Perhaps Indonesian yang belongs to this class, too.
position. They seem not to have wh-raised from the gap position (but see §3.3). I have distinguished two groups:


RMCL  Relative markers that are classifiers, sometimes with an additional d-morpheme. Examples: Hungana wi, ki, yi, Wolof g-u, etc.

Relative markers are predominantly found in Afro-Asiatic and Niger-Congo languages, but there are also examples from Crow (Siouan family).

The fifth major class of relative elements is the group of relative affixes. These are relative elements that are affixed to the verb in a relative clause. Relative affixes occur in many, if not all, language families and in all major types of relative clauses. My estimate is that this is the second largest class of relative elements, after the relative complementizers. Therefore it is a shame that – as far as I know – there is not one single syntactic theory on relative clauses that covers or even mentions these elements. I am afraid that I do not have much to offer on this subject, either. Nevertheless I want to put it on the agenda by at least giving an overview and a tentative classification of Relative Affixes (denotation RA) here. See also Appendix II, table 12.

RA(Agr) A specialized relative agreement affix that replaces subject or object agreement on the verb in a relative clause, e.g. in Hopi or Kongo.

RA(T) A specialized relative temporal affix that replaces T on V, for example in Greenlandic or Tamil. This turns the relative into a participial relative, except in Korean, where there are specialized relative temporal affixes for different tenses.

Notice that there are prenominal and postnominal participial relatives. The latter type (e.g. in Cahuilla, Greenlandic or Ojibwa) is less well familiar than the former (e.g. in Tamil or Turkish); see Appendix II, table 6 for an overview.

RA(NR) A nominalizing affix. (Compare RCNR above.) It can replace a temporal affix – RA(NR₁), e.g. in Ancash Quechua or Tibetan – which leads to a participial relative; or it can be additional: RA(NRₑ), e.g. in Japanese or Navaho.

In some languages a nominalizing affix provides information on the Case role of the relative gap, e.g. there are subject and object nominalizing affixes in Turkish. See Appendix II, table 14 for a list of nominalizing affixes.

RA(AT) An (additional) attributive affix. (Compare RCAT above.) There is one example, from Mbama.

RA(SR) An (additional) subordinating affix. (Compare RCSR above.) For example in Amharic or Ganda.

RA(CL) An (additional) relative classifier affix that agrees with the head noun. (Compare RMCL above.) For example in Bora or Swahili.

RA(add) A specialized additional relative affix, e.g. in Hopi, Kongo or Yaqui.
I have argued before that every relative clause has \( wh \)-movement. This implies the presence of a relative pronoun and a complementizer. In the languages with relative affixes these elements are abstract, but probably still present. Therefore a relative affix is ‘extra’ information, which is not superfluous, because the relative is not overtly marked otherwise. If so, a relative affix does not play a primary role in the syntax of these relative clauses. However, it is clear that this issue deserves a thorough further study.

A summary of all relative elements is given in table 7, which is the typological counterpart of table 5.

**Table 7.** *A fine-grained classification of 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 complementizers</td>
<td>relative markers</td>
</tr>
<tr>
<td>( RP_d )</td>
<td>( RC_{SR} )</td>
<td>( RM )</td>
</tr>
<tr>
<td>( RP_{wh} )</td>
<td>( RC_{sp} )</td>
<td>( RM_{CL} )</td>
</tr>
<tr>
<td>( RP_{sp} )</td>
<td>( RC_{NR} )</td>
<td></td>
</tr>
<tr>
<td>( RC_{AT} )</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Finally, table 8 summarizes which relative elements can occur in which syntactic main types of relatives. The rightmost column indicates a zero strategy.

**Table 8.** *Relative elements in syntactic main types of relative clauses.*

<table>
<thead>
<tr>
<th>RC type</th>
<th>RP</th>
<th>RC</th>
<th>RM</th>
<th>RA</th>
<th>res. pr.</th>
<th>( \phi )</th>
</tr>
</thead>
<tbody>
<tr>
<td>postnominal</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>prenominal</td>
<td>-</td>
<td>- (+)</td>
<td>-</td>
<td>+</td>
<td>- (+)</td>
<td>+</td>
</tr>
<tr>
<td>circumnominal</td>
<td>-</td>
<td>- (+)</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>correlative</td>
<td>+</td>
<td>- (+)</td>
<td>-</td>
<td>- (+)</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>

The next subsection discusses briefly which of the relative elements can occur together.
4.2. Combinations of relative elements

The use of a particular relative element does not a priori exclude the use of another one at the same time. Table 9 contains all logically possible combinations. It is filled in according to the data set in Appendix II. The impossible combination of a relative pronoun plus a resumptive pronoun is marked grey. Indeed it is not attested. (I have also indicated the number of patterns found, but note that the figures are not corrected for a balanced division between different language families.)

Table 9. Combinations of relative elements.

<table>
<thead>
<tr>
<th></th>
<th>RP relative pronoun</th>
<th>RC rel. compl.</th>
<th>RM relative marker</th>
<th>RA relative affix</th>
</tr>
</thead>
<tbody>
<tr>
<td>GD/A resumptive pronoun</td>
<td>-</td>
<td>+ Akan, Urhobo, Farsi, …</td>
<td>+ Arabic (classical), Geez, Hungana</td>
<td>+ Jacaltec, Kongo, Shona, Swahili</td>
</tr>
<tr>
<td>RA rel. affix</td>
<td>+ 1</td>
<td>Hurric</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>RM rel. marker</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>RC rel. compl.</td>
<td>+ Arabic (Tunisian), Hungarian</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Clearly, combinations of true relative elements (RP, RC, RA, RM) are extremely rare. This is not surprising, because it is unnecessary to express twice or more that a clause is a relative clause. Still, a combination that can be found is RP+RC. This may be so because the three functions Subordination, Attribution and Gap Construction are divided between a relative complementizer and a relative pronoun.

By contrast, resumptive pronouns are almost always combined with a true relative element (cf. Appendix II, table 9). This is also not surprising, since overt marking of relative clauses is a reasonable strategy, and in fact the predominant one. The resumptive pronoun as such does not do so.

At this point I must stress that overt marking of a relative clause is neither a syntactic nor a logical necessity. In fact zero relativization (i.e. a relative construction without relative elements) is a main strategy in a dozen languages from the sample in Appendix II (cf. table 15 there). It is also a secondary strategy in several other languages; see section 3.1 above.

29 Apart from these two, the combination of a relative pronoun with a relative complementizer is attested in many dialects of Germanic languages, as mentioned before. However this is not the case in standard Dutch, German, English, etc. which is the reason why they are absent in the tables.
5. Conclusion

This chapter has presented an overview of relative elements. I have revised Lehmann's (1984) classification, which is based on the three functions Gap Construction (which is related to subCase), Attribution (which is related to $\phi$-feature agreement) and Subordination. I have shown that the interaction with syntax predicts four types of elements: relative pronouns, resumptive pronouns and two kinds of relative particles that I have called relative complementizers and relative markers. A typological survey adds a large class of relative affixes to these. I have argued that all relative clauses display wh-movement. This implies that there is always a relative operator and a relative complementizer. The (abstract) complementizer has a subordinating function. The (abstract) relative pronoun takes care of Gap Construction and Attribution. Relative markers are analysed as either (remnants of) relative pronouns that may undergo attractio relativi, or clause-initial DP-markers. I have argued that in case of a resumptive pronoun the relative determiner stays in situ. Nevertheless, raising of the head noun assures the bounded nature of the relative construction. Finally I have presented a fine-grained classification of relative elements and I have shown which combinations of these are attested. Double marking turns out to be very rare, except if one of the elements is a resumptive pronoun.