Chapter 3
Relativization strategies in spoken languages

Introduction

Relative constructions have always attracted the interest of linguists starting from the earliest studies in generative grammar. This chapter aims at reaching a tentative understanding of the concept of relativization which is able to account for the different relativization strategies attested in world languages, thus providing the necessary theoretical background against which to analyze the LIS data on relativization.

In § 3.1, I propose a general definition of relative clauses covering the different syntactic and semantic typologies attested across languages. Next, § 3.2 illustrates the constitutive elements of relative structures, while § 3.3 presents the core properties of internally-headed relative clauses (IHRCs), externally-headed relative clauses (EHRCs), free relatives and correlative clauses. In § 3.4, relative clauses are characterized according to the nature of their semantic interpretation. A three-way distinction is made between restrictive, non-restrictive and maximalizing relative clauses. Section § 3.5 addresses the structural representation of the relativization strategies presented in § 3.3 and § 3.4. In § 3.5.1 the head raising analysis is applied to derive headed relative clauses, i.e. EHRCs and IHRCs. The vast literature on free relatives and correlative clauses is hence introduced. Free relatives are analyzed against a recent approach by Donati (2000, 2006) within the head raising analysis. As for correlative clauses, two proposals for the structural representation of Hindi correlative clauses are discussed, namely Dayal’s (1991) and Bhatt’s (2003). Finally, the semantic types of restrictive and non-restrictive relative clauses are also provided a structural representation in § 3.5.1.5, and then § 3.6 sums up the relevant discussion.

3.1. Defining relativization

Let us consider the following sentences:

(67) The woman who dances in the garden works with John.
Examples (67) through (70) are instantiations of relativization. All sentences are composed of a matrix and dependent clause (that I shall refer to as the relative clause) but greatly differ in their syntax (and semantics). The aim of this section is to provide a definition of relativization able to hold for the sentence types provided above. In order to do so, I shall try to isolate the properties shared by the different syntactic structures employed by various languages and qualifying as relative constructions.

Some attempts in this direction have been made in the previous literature. Downing (1978: 378) recognizes the difficulty of relying upon syntactic terms to reach a general definition of relative clauses and proposes semantic notions such as co-reference and assertion. These two semantic notions can be applied to the dependent clause of a relative construction displaying co-reference between elements internal and external to it and asserting something of a referent. To illustrate, the sentence in (71) is a bi-clausal sentence composed of the matrix clause the child is homesick and the dependent clause who sings in the woods. In (71), the child is a definite nominal belonging to the matrix clause and who is a relative pronoun referring to it and belonging to the dependent clause.

By applying to the dependent clause the semantic notions suggested by Downing, we can say that the NP child is not just the subject of the matrix clause but also the referent of the action expressed by the predicate of the dependent clause, sing. Furthermore, the dependent clause asserts something of the referent child contained in the matrix clause.

(71) The child who sings in the woods is homesick.

The concept of modification is also largely employed when characterizing relative clauses but, since this universal notion can only be applied to a small
set of relative clauses, it cannot be employed in a general definition. De Vries (2002: 14) proposes the definition in (72) that is both syntactic and semantic.

(72) a. A relative clause is subordinated.

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

According to de Vries, the pivot is a constituent semantically shared by both clauses of the bi-clausal relative construction. Three possibilities may be realized. The pivotal element can be overtly realized only in the matrix clause. In this case, the relative clause contains a phonological gap in the position where the pivot is interpreted, a position that may be filled by a relative pronoun. In (67) the pivotal element is woman and is overtly realized in the matrix clause; the dependent clause contains a phonological gap in place of the missing pivot and a relative pronoun who. Differently, as in (68), the pivot constituent so is realized only in the dependent clause while the matrix clause contains a phonological gap which is filled by the dependent clause ne ye so min ye.

If the dependent clause is, instead, preposed to the matrix clause, the latter contains a demonstrative, us as in (70).

Grosu (2002: 145) accepts de Vries’ definition but discards the terms pivot (which he substitutes with antecedent) and semantic sharing, considering them not precise enough. His proposal is reported in (73).

(73) a. A relative clause is subordinated.

b. A relative clause includes, at some level of semantic representation, a variable that ultimately gets bound in some way by an element of the matrix.

In Grosu’s terms, the variable bound in some way “[..] purports to subsume ‘discourse binding’, that is the relation that obtains between a free variable and an antecedent that does not c-command it, and ‘syntactic binding’, which involves binding of a variable by a c-commanding element”. Grosu traces the distinction between ‘discourse binding’ and ‘syntactic binding’ to the different semantic interpretations relative clauses receive.

Let’s consider now the following structures.

(74) a. I asked the girl\_{i} to come [although you don’t like her\_{i}].

b. I asked her\_{i/k} to come [although you don’t like the girl\_{i}].
(75) Ho chiesto a Maria di venire [sebbene e non sia simpatica].
   ‘I asked Maria to come although she isn’t nice.’

(76) [When you forgot the suitcase] I looked after that.

The definitions given in (72) and (73) wrongly predict that sentences (74) through (76) are relative constructions. As a matter of fact, the sentences: (i) contain a subordinate clause (within squared brackets), and (ii) include a constituent semantically shared by both the matrix and the subordinate clause. Such a pivotal constituent (girl in (74); Maria in (75); suitcase in (76)) can be realized in the matrix clause, while the subordinate clause contains a variable (her) that gets bound to the pivotal element, as in (74a). The pivot can otherwise be realized in the subordinate clause, and the matrix clause can contain a variable bound by it, as in (74b). Alternatively, the pivot appearing in the matrix clause corresponds to a phonological gap in the subordinate clause, as in the Italian example in (75) where the gap is glossed as ‘e’. When the subordinate clause containing the overtly-realized pivot is preposed to the matrix clause, as in (76), this latter may display a demonstrative co-referent with the pivotal element.

The definition of what a relative clause is, needs to be made more restrictive in order to rule out sentences (74) through (76) as relative constructions. The following are some considerations that might be useful for a new tentative definition of relative clauses.

(a) Grosu’s claim that relative clauses include a variable that gets bound by an element of the matrix clause either by ‘discourse binding’ or by ‘syntactic binding’ is not restrictive enough.

(b) Likewise, de Vries’ concept of semantic sharing does not seem to be restrictive enough to characterize the relation between the pivotal element and the two clauses. Rather, such a relation should be defined in terms of a syntactic relation that the pivotal element entertains with both clauses.

(c) Assuming that the pivotal element (let’s suppose of category NP) is syntactically, not just semantically, shared\(^45\) by the two clauses, e.g. it is the syntactic subject of both clauses as in (71) above, the phonological gap occurring in the clause lacking its overt realization cannot be filled by a relative pronoun or by any other D-like element,\(^46\) as claimed in de Vries (2002). Rather, the D heads appearing in the clause lacking the pivot’s overt realization behave like heads missing their NP complement.\(^47\) To clarify, we can consider the sentence in (74a) repro-
duced here as (77a). In (77a), the variable *her* in the dependent clause is bound by *girl* occurring in the matrix clause in the same way as the relative pronoun *which* is bound by the NP *horse* in (78a). However, in (77a) where *girl* is only semantically, not syntactically, shared by the two clauses, the two elements (*girl* and *her*) cannot co-occur in the same clause, as shown by the ungrammaticality of (77b). This is so because *her* is the syntactic object of the dependent clause as *girl* is the syntactic object of the matrix clause; thus the object position of each clause is already filled.

In relative constructions, however, where the relation holding between the pivotal NP and the two clauses is of syntactic sharing, the NP carries out a syntactic role in each clause and may co-occur either with a determiner in the main clause or with a (optional) relative pronoun in the subordinate clause, therefore proving to be the only element able to fill the phonological gap and to carry out the syntactic role. Moreover, the determiner in the matrix clause and the relative pronoun in the dependent clause behave like D heads taking the pivot NP as their complement thus forming a DP constituent. This is shown by the grammaticality of (78a) where the pivot *horse* surfaces in the matrix clause following a determiner, and by (78b) where the pivot *so* is realized inside the subordinate clause next to the relative pronoun *min*.

(77) a. *I asked the girl* to come [although you don’t like her*].
   b. *I asked (the) e to come [although you don’t like her girl]*.

(78) a. *The man bought the horse*, [which I saw e]*.
   b. *Tye ye [ne ye so min ye] san.*
   man Pst I Pst horse Rel see buy
   ‘The man bought the horse that I saw.’
   (Bambara, from Keenan 1985)

(d) That semantic sharing does not accurately define the relation between the pivot and the two clauses of a relative construction is further shown by the following consideration. Deleting the complementizer of a subordinate clause like (74a) gives the clause the status of a grammatical independent sentence which can be produced in isolation, as in (79). However, by deleting the C head of a relative clause (80a) or by spelling out the relative clause containing the variable *which* (80b) in isolation, the sentence is ill-formed. This is so because the argument of the
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predicate is missing, i.e. the pivotal NP spelled out in the matrix clause and here represented as a phonological gap.

(79) [although you don’t like her].

(80) a. *[that I saw e].
     b. *[which I saw e].

Following this line of reasoning, I suggest the following definition for a relative clause.

(81) a. A relative clause is a dependent clause.
     b. A relative clause is connected to the matrix clause by a syntactically and semantically shared pivotal element. Such a pivot can be overtly realized in either one of the two clauses, in both of them or in neither one of them.

Example (81) aims at unifying the different relativization constructions under a common definition. In § 3.3 we will verify if (81) is able to subsume the characteristics of the different syntactic typologies implementing relativization across languages. In (81a) the substitution of subordinate clause with dependent clause is two-fold. It is neutral on the syntactic analysis of relative clauses, and it attempts to cover relative clauses that are believed not to be subordinated to the main clause, namely correlative clauses.52 The concept of syntactic sharing proposed in (81b) refers to the intuition that the pivotal element does not entertain just a semantic relation with the matrix and the dependent clause by binding the variable appearing in the other clause. Rather, it suggests that a single pivotal element overtly or covertly occupies both positions within each clause, carrying out a syntactic role within each clause. This is implemented in various ways, giving rise to the different syntactic typologies of relativization. More specifically, the pivot may be overtly spelled out in both clauses (an option available in correlative constructions), in neither one of them (as is the case with free relatives), only in the matrix clause (as in EHRCs), or only in the dependent clause (as in IHRCs).

3.2. The relative option: some constitutive elements

Having provided a tentative general definition of what a relative clause is, in this section I try to illustrate in more precise terms some syntactic
characteristics of relative constructions. I shall do so by maintaining a unifying approach to the different strategies and thus by focussing on the constitutive elements shared by all syntactic typologies. I detect three main common characteristics:

(1) all relative structures contain two clauses: an independent clause that I call the matrix CP, and a dependent clause that I refer to as the relative CP. This latter is dependent in its semantic interpretation and in its syntactic structure on the matrix CP. In other words, the relative CP cannot be produced on its own, but, like any dependent clause, needs to appear with the matrix CP.

(2) all relative structures contain a constituent (usually an NP) that Grosu calls the pivot and that I shall refer to as the head. As discussed in § 3.1, the head is semantically and syntactically shared by both clauses, thus constituting a fundamental link between the two CPs. More specifically, each CP hosts a position syntactically and semantically related to the head that carries out independent syntactic roles in each clause. The head (in bold) can surface as the subject of both clauses, as in (82a); it can be the subject of the matrix CP and the object of the relative CP, as in (82b); it can be the subject of the relative CP and the object of the matrix CP, as in (82c); it can be the object of both clauses, as in (82d); or it can occupy a non-argument position as in the case of the relative CP in (82e).

Moreover, the overt/covert option of the head in each clause gives rise to different possibilities. The sentences in (83a), (83b), and (83c) exemplify the possible options made available by Hindi correlative clauses, while (83d) is a Hungarian correlative clause. In all sentences, the relative CP precedes the matrix CP. The head can be realized in the matrix CP; thus, the relative CP will contain a phonological gap, as in (83a). It can be realized in the relative CP and the gap will occur in its syntactic position in the matrix clause, as in (83b); it can be realized in both CPs, as in (83c); or in neither one of them, as in (83d).

(82) a. [The cake [that e smelled good] was delicious].
   b. [The cake [that Sara ate e] smelled good].
   c. [Sara ate the cake [that e smelled good]].
   d. [I ate the cake [that Sara made e]].
   e. [Sara made the cake in the room [where I keep my computer e]].

(83) a. [jo e khaRii hai] [vo laRkii lambii hai].
   REL standing is DEM girl tall is
b. [jo laRkii khaRii hai] [vo e lambii hai].
   REL girl standing is DEM tall is
   Lit. ‘Which girl standing is that tall is.’
   ‘The girl who is standing is tall.’
   (Hindi, from Dayal 1991)

c. [jo laRkii khaRii hai] [vo laRkii lambii hai].
   REL girl standing is DEM girl tall is
   Lit. ‘Which girl standing is that tall is.’
   ‘The girl who is standing is tall.’
   (Hindi, from Dayal 1991)

d. [Aki e korán jön] [azt a szervezök rel-who early comes that-Acc the organizers e ingyen beengedik].
   freely PV-admit-3Pl
   ‘Who comes early, the organizers will let him in for free.’
   (Hungarian, from Lipták 2005)

(3) The third main characteristic is a DP position in each clause related to
the head shared by both CPs that might be realized in different positions, as
shown in (83). More specifically, in all relative constructions, each clause
includes a DP position syntactically and semantically bound to the head and
potentially able to host it. I shall call the DP internal to the relative CP, relative DP (and its D head relative determiner) and the DP occurring in the
matrix CP, matrix DP.

   As we have seen, both clauses may display a full DP as in (83c) above;
they can both host just a D head with a phonological gap in place of the
missing head, as in (83d); the matrix DP can be a full DP while the relative
DP may display just a D head with a gap, as in (83a); the relative DP may be
a full DP while the matrix DP may host just a D head, as in (83b); the matrix
DP may contain a full DP with no material filling the relative DP, as in (84a)
where the relative CP is introduced by the C head that; or the relative DP
may contain an overt D head (who) with a gap in place of the missing head,
while the matrix DP may contain no material, as in (84b).

(84) a. [The cake [that Sara ate e] was delicious].
   b. [[Who e made the cake] ate it].

Some relative structures display a bare NP inside the relative CP and a bound
D head at its right periphery, as exemplified by the in the Tibetan example
in (85).
Another possibility is implemented by the Ancash Quechua example in (86), where both the matrix and the relative DP seem to display just the head with no D head.

(86) [Nuna bestya-ta rantishqan] alli bestya-m.
man horse-Acc bought good horse-EVIDENTIAL
‘The horse that the man bought is a good horse.’
(Ancash Quechua, from Cole and Hermon 1994)

I do not know enough about the syntax of Ancash Quechua to make any claim on the presence or absence of D heads within its relative structures. It could be the case that a language such as Ancash Quechua does not display overt D heads or that it allows for silent D heads to appear in the sentence. A detailed typological survey of the DP nodes contained in both clauses of a relative construction could provide evidence for the possibility of other options.

Having spelled out the constituent elements characterizing relative structures, I now turn to illustrating how variations concerning the hierarchical relation between the two CPs, the overt/covert realization of the head, and the content and position of each DP connected to the head intersect to produce the implementations of relativization structures in the shape of the different syntactic typologies found in languages.

3.3. Syntactic typologies across languages

The typological richness displayed by the world’s languages in the domain of relative constructions has been classified following two main criteria: the semantic criterion, referring to the semantic relation holding between the head and the relative CP; and the syntactic criterion, referring both to the syntactic material occupying the matrix and the relative CP, and to the syntactic relation holding between the two clauses of a relative structure. The semantic and the syntactic criteria are strictly connected. In § 3.5.1.5. it will be shown how the semantic relation holding between the head and the
relative CP has a crucial impact on the syntactic representation of the relative construction.

While the semantic criterion produces a three-way semantic typology in restrictive, non-restrictive, and maximalizing relative clauses (discussed in § 3.4), the syntactic criterion of classification distinguishes between IHRCs, EHRCs, free relatives and correlative clauses, which I will now describe.

3.3.1. Internally Headed Relative Clauses (IHRCs)

The first syntactic type of relativization I shall illustrate is referred to as the Internally Headed Relative Clause (henceforth IHRC). These are attested in a number of unrelated languages such as Japanese (Shimoyama 1999), Quechua (Comrie 1981), Lakhota (Williamson 1987), Bambara (Keenan 1985), Ancash Quechua (Cole and Hermon 1994), Navajo and Tibetan (Keenan 1985), Diegueño (Keenan 1985) and Mojave (Munro 1976; Basilico 1996), a.o.

Some controversy regarding the relation between this relativization strategy and the type of languages displaying it has arisen in the literature. While Cole (1987) claims that IHRCs occur only in head-final languages, Culy (1990) proves such an assumption to be wrong, suggesting that IHRCs are an available option for some head-initial languages (such as Mooré and Dagbani, a.o.). De Vries (2002: 36) suggests a reformulation in terms of a weak tendency of IHRCs to occur in head-final languages. The peculiarity of IHRCs, and the rationale for their name, is that the head is realized internally to the relative CP, as exemplified by the Mojave sentence in (87) where the head ‘-avhay’ is realized within the bracketed relative CP.

(87) `[‘-avhay nyany lu:vu:c]-n’ ‘-a:r-m.
1-dress that resemble-Rel-Dem 1-want-Tns
‘I want a dress that resembles that one.’
(Mojave, from Munro 1976 and Basilico 1996)

Within the relative CP, the head occupies its base position. In (87) ‘-avhay’ surfaces as the subject of the relative CP preceding the object and the verb in an SOV language. In the Tibetan example in (88), again an SOV language, the head *thep* occurring within the relative CP surfaces in the object position between the subject and the verb.
In languages displaying overt case marking, the head is case marked. In (89a) *ringo* is marked for nominative case, while in (89b) the head *keeki* is assigned accusative case.

(89) a. *Taro-ga [ringo-ga kittin-ni aru no]-o tot-te tabeta.*
Taro-Nom apple-Nom kitchen-in be No-Acc pick up ate
‘Taro picked up and ate the apple that was in the kitchen.’
(Japanese, from Nishigauchi 2003: 1)

b. *Yoko-wa [[Taro-ga sara-no ue-ni keeki-o oita] -no]-o tabeta.*
Toko-Top Taro-Nom plate-Gen on-Loc cake-Acc put NM-Acc ate
‘Yoko ate a piece of cake which Taro put on a plate.’
(Japanese, from Shimoyama 1999: 147)

The internally headed relative CP has a nominal distribution always occurring in DP positions. It surfaces as the internal constituent of the matrix CP in the position corresponding to the syntactic function carried out by the head with respect to the matrix CP. In (90a) the relative CP appears in subject position, while in (90b) it surfaces as the object of the matrix CP.

(90) a. *[Nuna bestya-ta rantishqan] alli bestya-m.*
Man horse-ACC bought good horse-EVIDENTIAL
‘The horse that the man bought (is) a good horse.’
(Ancash Quechua, from Cole and Hermon 1994: 248)

b. *Tye ye [ne ye so min ye] san.*
Man Pst I Pst horse Rel see buy
‘The man bought the horse which I saw.’
(Bambara, from Keenan 1985)

In some languages, the relative CP of IHRCs can also appear in a dislocated position.
Since the head is realized in a position internal to the relative CP in IHRCs, the syntactic role it carries out in the main clause may be overtly realized through a case-marker cliticizing to the relative CP. In (91a) the relative CP is marked as the subject of the matrix CP by the morpheme -c, and in (91b) it is assigned accusative case through the marker -o. Both morphemes cliticize to the whole relative CP.

(91) a. [Xat kcok-Ø wi:-m ?tuc]-pu-c n'iLr.
   Dog-DO rock-COMITATIVE I hit-DEF-SUBJ was-black
   1. ‘The rock I hit the dog with was black.’
   2. ‘The dog I hit with the rock was black.’
   (Diegueño, from Keenan 1985)

   b. Yoko-wa [Taro-ga sara-no ue-ni keeki-o oita] -no]-o tabeta.
   Yoko-Top Taro-Nom plate-Gen on-Loc cake-Acc put NM-Acc ate
   ‘Yoko ate a piece of cake which Taro put on a plate.’
   (Shimoyama 1999: 147)

Turning to examine the relative DP, Williamson (1987) for Lakhota; Watanabe (1992) for Japanese, quoted by Grosu (2002); and Bianchi (1999) claim that only indefinites can appear as the head of IHRC constructions. Williamson brings evidence for the indefiniteness of the relative DP of Lakhota IHRCs by considering the minimal pair in (92). The only element of difference between (92a) and (92b) is the presence of a definite determiner inside the relative DP of (92b), causing the ungrammaticality of the sentence.

   Mari quilt a make the Dem I buy
   ‘I bought the quilt that Mari made.’

   Mari quilt the make the Dem I buy
   (Lakhota, from Williamson 1987: 171)

However, the presence of an indefinite determiner heading the relative DP does not correspond to an indefinite interpretation of the head, which in (92a) is a specific one. The relative DP may also host a relative pronoun as in (93) where min surfaces as the relative determiner of the head so, thus proving to act as an indefinite determiner.
(93) tye ye [ne ye [so min] ye] san.
Man Pst I Pst horse Rel see buy

‘The man bought the horse which I saw.’
(Bambara, from Keenan 1985)

Alternatively, the relative DP displays a bare NP, as in (91a) and (91b) above. When the head is not headed by any relative determiner, and the relative CP contains more than one NP, this might lead to ambiguity, as in (94).

(94) [kan kwitsa-man kwintu-ta willa]-shka]-ka llapa sumaj
You girl-to story-Acc tell NMLZ-Top very pretty

-VALIDATOR
1. ‘The girl to whom you told the story is very pretty.’
2. ‘The story that you told to the girl is very pretty.’
(Quechua, from Comrie 1981: 139)

As briefly mentioned above, IHRCs may display a definite strong determiner surfacing at the right of the relative CP either in the form of a free morpheme, as in (88) repeated here as (95a), or of a clitic, as in (91b) above repeated here as (95b).

(95) a. [Peemε thep khii-pa] the[nee yin.

‘The book that Peem carried is mine.’
(Tibetan, from Keenan 1985)

b. Yoko-wa [[Taro-ga sara-no ue-ni keeki-o
Yoko-Top Taro-Nom plate-Gen on-Loc cake-Acc
oita] -no]-o tabeta.
put NM-Acc ate

‘Yoko ate a piece of cake which Taro put on a plate.’
(Japanese, from Shimoyama 1999: 147)

It is not clear whether this definite D head belongs to the matrix or to the relative CP.

On the one hand, in SOV languages, the definite determiner is right-sister to the relative CP and thus seems to select it from a relative CP external position. On the other hand, the definite D head precedes and gets the relative CP case marking both in sentences as (95) above and in sentences as (96) below, providing evidence for its relative CP internal position.
Moreover, the structure in (96) suggests that IHRCs allow internal recursion, namely the possibility for the relative CP to contain a head modified by another relative clause. A syntactic operation traditionally referred to as *stacking*.

(96) \[tunay pi:pa ?-u:yu:]-ny \[hatcoq kyo:]-ny ]-c] pos
yesterday man I-see -Dem dog bite-Dem -Subj cat
\[ka?a:k-k.]
kick
‘The man I saw yesterday, that the dog bit, kicked the cat.’
(Mojave, from Munro 1976 and Basilico 1996)

Having illustrated the surface structure of IHRCs, I shall now describe a different typology of relativization, namely, externally headed relative clauses.

3.3.2. Externally Headed Relative Clauses (EHRCs)

Externally Headed Relative Clauses (henceforth EHRCs) are widely attested cross-linguistically in both head-initial and head-final languages. Their distinctive feature, responsible for their nomenclature, is the realization of the head in a position external to the relative CP (within squared brackets in the examples below). More specifically, the head surfaces as the internal constituent of the matrix CP occupying the position corresponding to the syntactic function it carries out. In the Italian sentences below, exemplifying an SVO language, the head *libro* (‘book’) is the subject of the matrix CP in (97a); it surfaces as its object in (97b); and it occupies a non-argument position in (97c).

(97) a. \[Il libro \[che Sara ha comprato\] è molto raro.\]
The book Compl Sara has bought is very rare
‘The book that Sara has bought is very rare.’

b. \[Ho letto il libro \[che Sara ha comprato\].\]
I. have read the book Compl Sara have-3SG bought
‘I read the book that Sara has bought.’

c. \[Ho letto una bella storia nel libro \[che Sara ha comprato\].\]
I. have read a beautiful story in the book Compl Sara have-3SG bought
‘I read a beautiful story in the book that Sara has bought.’
A phonological gap is found in place of the missing head within the relative CP. In (98a) the phonological gap is in subject position and in (98b) it occupies an object position, while in (98c) it surfaces in a non-argument position.

(98) a. *The city [that *e* hosts many artists] is very peculiar.*
   b. *The city [that I visited *e* last year] is very peculiar.*
   c. *The city [where I found a new job *e*] is very peculiar.*

The head can precede the relative CP, in which case we have a post-nominal relative clause, as in (99a), or it can follow the relative CP, in which case we have a pre-nominal relative clause, as in (99b).

(99) a. *Der *Mann* [den *ich* gesprochen *habe]*
The man Rel-Acc I spoken have-1SG
*spielt*  Tennis.
play-3SG tennis
`The man I talked to plays tennis.`
(German)

b. *Taro-wa [Yoko-ga reezooko-ni irete-oita]*
Taro-Top Yoko-Nom refrigerator-Loc put-Aux
*kukkii-o*  *hotondo*]  *paatii-ni motte itta.*
cookie-Acc most party-to brought
`Taro brought most cookies that Yoko had put in the refrigerator to the party.`
(Japanese, from Shimoyama 1999: 150)

But adjacency is not a strict requirement: some languages allow the relative CP to be either realized next to the head, as in (100a) where the head *Kita:b* immediately precedes the relative CP *jo sale-par hai*, or extraposed from it, as shown in (100b) where it occupies the right periphery of the sentence.

(100) a. *Vo *Kita:b* [jo *sale-par hai]*
   Dem book Rel sale-on be.Prs good be.Prs
   *achchhi:*  *hai.*
   good be.Prs
`That book which is on sale is good.`
(Hindi, from Bhatt 2003)
In some languages displaying overt case marking the head is marked for case. Following the bracketing proposed in Shimoyama (1999: 147), the Japanese sentence in (101) seems to suggest that the relative CP Taro-ga sara-no ue-ni iota and the external head keeki form a constituent, and that the clitic case marker -o attaches to the whole constituent [Taro-ga sara-no ue-ni iota] keeki, not just to the head keeki.

(101) Yoko-wa [[Taro-ga sara-no ue-ni ø iota] keeki]-o tabeta.
Yoko-Top Taro-nom plate-Gen on-Loc put cake-Acc ate
‘Yoko ate a piece of cake which Taro put on a plate.’
(Japanese, from Shimoyama 1999)

In this respect, it is interesting to notice that Japanese IHRCs and EHRCs seem to display strong analogies. If we compare (101) above with (95b) repeated below as (102), we can observe that they display exactly the same sequence of words except for the head keeki being internal to the relative CP in (102) and external to it in (101). Moreover, if we focus on the external right periphery of the relative CP, we notice that the same spot (following Shimoyama’s 1999 bracketing) is occupied by the head keeki in (101) and by the nominalizer morpheme -no in (102). In both sentences, the case marker -o seems to mark both the relative CP and its right external edge as a whole constituent.

(102) Yoko-wa [Taro-ga sara-no ue-ni keeki-o] tabeta.
Yoko-Top Taro-Nom plate-Gen on-Loc cake-Acc put NM-Acc ate
‘Yoko ate a piece of cake which Taro put on a plate.’
(Japanese, from Shimoyama 1999)

In other languages, case is marked just on the head and not on the relative CP, as in the German example in (103) where the definite determiner dem is marked for dative case.

(103) Ich habe dem Mann [den ich getroffen habe] das Haus gezeigt.
I have the-Dat man Rel-Acc I met
Have.1SG the-house shown
‘I have shown the house to the man whom I have met.’
Within the matrix CP, the head can be selected by either a definite or an indefinite determiner. In the German sentence in (103) the definite determiner *dem* selects the head *Mann*; in the Hindi sentences in (100) the demonstrative *vo* selects the head *Kita:b*; in the Japanese sentence in (99b) the quantifier *hotondo* selects the head *kukkii*. In the Japanese sentence in (104), on the other hand, the indefinite *wh* determiner *dono* selects the head *neko*.

(104) Taro-wa [[Yoko-ga turete kita] dono neko]-ga Taro-Top Yoko-Nom brought along which cat-Nom higedasita ka sirigatte iru. ran-away Q want-to-know ‘Taro wonders which cat that Yoko brought along ran away.’ (Japanese, from Shimoyama 1999)

The relative CP, depending on the lexical material displayed by it, can be distinguished into three types. It may be introduced just by a declarative complementizer also found in finite clauses. Following Bianchi (1999: 155), this type of EHRC will be referred to as a *that*-relative. Sentence (105a) exemplifies an English, and (105b) an Italian *that*-relative.

(105) a. The conference [*that I missed*] was very crowded.

b. Laura mi ha consigliato il libro [*che* Giovanni ha scritto.]
Laura I-Dat have.3SG recommended the book Compl Giovanni have.3SG written ‘Laura has recommended me the book that Giovanni has written.’

Alternatively, a relative determiner, usually in the shape of a *wh*-element, may appear at the left periphery of the relative CP. Following Bianchi (1999), we shall call this type of EHRC a *wh*-relative. In languages with a rich morphology, the *wh*-relative determiner inflects for gender, number and case. It agrees for gender and number with the external head, and it is marked for case according to the syntactic role carried out by the latter within the relative CP. In the German example in (106a), the *wh*-relative determiner *dessen* inflects for gender [masculine] and number [singular], thus agreeing with the head *Mann*, and it is marked for the case [genitive] assigned to *Mann* within the relative CP. In the English sentence in (106b) the *wh*-relative determiner *whom* displays only a case feature, namely [accusative].
   ‘The man whose house I saw is an architect.’


However, the position of the wh-relative determiner in the relative CP is unexpected. Since it agrees with the external head and since it is marked for the case that the head carries out in the relative CP, we would expect to find it in the position where the head is interpreted inside in the relative CP. Instead, it invariably occupies the left periphery of the relative CP. There are reasons to suppose that such a wh-determiner is subject to some kind of movement.

The realization of both the complementizer and the wh-relative determiner may lead, in many languages, to an ungrammatical result, as shown in (107).

(107) a. *The woman [who that sits near the window] is a famous singer.
   b. The woman [who sits near the window] is a famous singer.
   c. The woman [that sits near the window] is a famous singer.

This general incompatibility of the complementizer and the wh-relative determiners introducing the relative CP of EHRCs has been described and formalized as ‘the doubly-filled COMP filter’. 61

When the head is selected by a V selecting a PP in the relative CP, the wh-relative determiner introducing the relative CP can be preceded by a preposition as in the English example in (108).

(108) The lawyer [to whom I talked] firmly denied the facts.

In this case, the preposition is said to be pied-piped by the wh-relative determiner at the left of the relative CP. 62 The preposition may also be left in situ, i.e. stranded from the wh-relative determiner. Some languages, like English (109a) allow preposition stranding; 63 others, like Italian (109b), do not.

(109) a. The lawyer [whom I talked to] firmly denied the facts.

   ‘The lawyer whom I talked to firmly denied the facts.’
A third type of EHRC is what we might call, following Bianchi (1999),
the zero relative. The relative CP of a zero relative is introduced neither
by a complementizer nor by a wh-relative determiner. This structure is not
licensed in all languages. English allows it in some contexts, as illustrated
in (110).64

(110) The car [e I drove yesterday] is leaking gas.

As suggested by Williamson for IHRCs, there is reason to believe that the
relative DP of EHRCs is, likewise, indefinite.65 The claim that the relative
DP is indefinite is controversial, especially in those languages where
the wh-relative determiner is preceded by a definite article, as in the Italian
example in (111).

(111) L'uomo, [il quale non sapeva niente] dell'incidente], entrò nella stanza.
       The.man the Rel not know.pst nothing of.the.accident entered in.the room
       ‘The man, who didn’t know anything of the accident, entered the room.’

Bianchi (1999: 82–86) presents convincing arguments from languages
like Hungarian, Albanian, Swedish, and Spanish suggesting that even in
languages hosting a definite determiner preceding the wh-relative deter-
miner, the relative DP lacks definiteness and is to be analyzed as an indefi-
nite D. The evidence presented by Alexiadou et al. (2000) points to the same
direction. By testing RCs for the definiteness effect,66 they demonstrate that
it is an indefinite DP that is interpreted in the gap position, as in (112).

(112) The men that there were ___ in the garden.
     (Alexiadou et al. 2000: 10)

Finally, as reported for IHRCs, EHRCS allow stacking of the relative CP, as
in (113).

(113) The cat [that I bought in the shop [that Mary washed yesterday]] was
taken to the vet.

As briefly anticipated, IHRCs and EHRCs are sometimes referred to as
headed relative clauses. The reference to these structures as headed under-
lines a common feature, namely, that of overtly displaying the head in either
one of the two CPs. They both contrast in this respect with free relatives.
3.3.3. Free Relatives (FRs)

Free Relatives (henceforth FRs) are attested cross-linguistically both in head-initial and in head-final languages and are found within the Indo-European family (including Germanic, Romance, and Slavic languages), the Finno-Ugric family (Estonian, Finnish and Hungarian) and the Semitic family (Modern Hebrew, Modern Moroccan Arabic), a.o. Their defining characteristic is that of being defective structures. More specifically, FRs depart from headed relatives of the kind illustrated above in that something appears to be missing, namely, the head.67

The relative CP of a FR (indicated in the following examples within squared brackets) does not have an overt head to refer to internal or external. This is shown by comparing the sentence in (114a), an EHRC, and the one in (114b), an IHRC, with the one in (114c), a FR.

(114) a. The book [that Peem carried] is mine.
      ‘The book that Peem carried is mine.’
      (Tibetan, from Keenan 1985)
   c. [What Peem carried] is mine.

As will become soon evident, the peculiarities of FRs are not limited to this. As observable in (114c), the relative CP of a FR can be introduced by a relative determiner in the form of a *wh*-element.68 However, in English, the *wh*-elements used in headed relatives are not completely interchangeable with the *wh*-elements used in FRs. While the *wh*-relative determiner *what* is perfectly acceptable introducing the relative CP of a FR, as in (115a), it is not an available option in standard English for the EHRC in (115b). As for *who*, on the other hand, it is acceptable in both constructions (116).

(115) a. [What I said] did not surprise John.
   b. The things [*what/that I said] did not surprise John.

(116) a. John greeted the woman [who entered].
   b. John greeted [who entered].

The *wh*-elements employed by English FRs correspond more closely to the ones displayed in interrogative clauses, as in (117).
What did I say to surprise John?

A similar pattern holds for Italian FRs which are introduced by wh-elements (as chi and quanto) as opposed to the pattern D° + cui/quale introducing Italian headed relatives. To illustrate, (118a) exemplifies an Italian FR, while (118b) exemplifies an Italian EHRC. Example (119) is an Italian interrogative.

(118) a. [Chi/*che/*la quale svela il segreto] sarà punito.
    Who/*that/*the which reveals the secret  be.fut. punish.pst
    ‘Who/*that/*which reveals the secret will be punished.’

    b. La persona [che/la quale/*chi svela il segreto] sarà punita.
    The person that/the which/*who reveals the secret  be.fut. punish. pst
    ‘The person that/which/*who reveals the secret will be punished.’

(119) Chi svela il segreto?
    ‘Who reveals the secret?’

This observation cannot, however, be generalized cross-linguistically. As opposed to English and Italian, Grosu (2002: 149) notices that, for instance, Chinese FRs display the same elements occurring in EHRCs but not in interrogative clauses. Compare (120a), a Chinese EHRC, with (120b), a Chinese FR, both differing from the interrogative pronouns employed in (120c).

(120) a. na yige [chouyan de] ren.
    that one-CL smoke DE person
    ‘that person that smokes.’
    (Del Gobbo 2001: 12)

    b. [ni mai e de]...
    you buy Modifier-marker
    ‘that which you bought’
    (Grosu 2002: 148)

    c. Shei mai-le shenme?
    Who buy what
    ‘Who buys what?’
    (Grohmann 2000)

In some languages, FRs can appear with no overt material connected to the relative DP. This strategy is not an option in English FRs, but it is found in Turkish (121a), and Chinese (121b) FRs, a.o.
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(121) a. 
[Geçen yaz ada-da gör-dük-ümler-in]

last summer island-LOC see-PARTIC-1.SG

bu yaz gel-ne-di(ler).

This summer come-NEG-PAST 3.PL)

‘(Those) who(m) I saw on the island last summer didn’t come this summer.’

(Turkish, from Kornfilt 1984: Ch 5 quoted in Grosu 1994: 45)

b. [ni mai e de]...

you buy PARTICLE

‘That which you bought.’

(Chinese, from Huang 1984 quoted in Grosu 1994: 46)

Languages using no wh-determiners in FRs generally also disallow their presence in headed relative clauses, as shown by the Turkish sentences in (122a) and the Chinese sentence in (122b) below.

(122) a. 
[Geçen yaz ada-da gör-düg-üm]

last summer island-LOC see-PARTIC-1.SG

kisi-ler bu yaz gel-ne-di(ler).

person-PL this summer come NEG-PAST 3.PL)

‘The people who(m) I saw on the island last summer didn’t come this summer.’

(Turkish, from Kornfilt 1984:Ch 5 quoted in Grosu 1994: 45)

b. [ni mai de] shu...

you buy PARTICLE book

‘The book that you bought…’

(Chinese, from Huang 1984 quoted in Grosu 1994: 45)

As opposed to EHRCs, FRs generally do not allow an overt complementizer to introduce the relative CP, as shown in (123).

(123) [What (*that) I said] surprised John.

If it were so, this fact might not be related to the Doubly Filled COMP filter, as overt complementizers are equally rejected in sentences not displaying any overt wh-relative determiner, as in (122) above, and in structures like (124) below, which are not attested.

(124) *[That I said] surprised John.
A further difference with headed relatives concerns the possibility for the \textit{wh}-relative determiner of a FR to pied-pipe material within the relative CP. As for upward pied-piping, i.e. pied-piping of the material governing the \textit{wh}-pronoun, languages vary in allowing such an operation. The English FR in (125a), where the \textit{wh}-relative determiner \textit{whom} pied-pipes the preposition \textit{to}, is of questionable grammaticality. Compare it with the headed relative in (125b) where pied-piping is instead allowed, and with the grammatical output in (125c), a FR displaying preposition stranding.

(125) a. \textit{John knows [to whom I talked].} \\
    b. \textit{John knows the woman [to whom I talked].} \\
    c. \textit{John knows [who(m) I talked to].}

Other languages, like Italian, allow pied-piping of a preposition if both the matrix CP and the relative CP require the same preposition to introduce the \textit{wh}-relative determiner, as in (126).

(126) \textit{Claudia vuole parlare [con chi non ha mai parlato prima].}  \\
      ‘Claudia wants to speak with whom she has never spoken before.’

Other languages, finally, do not seem to require any restriction on upward pied-piping of the \textit{wh}-relative determiner, as attested by the following FR in Classical Greek taken from Grosu (1994: 12).

(127) \textit{...dialegesthai [par hon laboien ton misthon].}  \\
      \textit{to-give-lessons from whom they-receive the fee} \\
      ‘…to give lessons (to those) from whom they receive their fee.’

As for downward pied-piping, i.e. pied-piping of the material selected by the \textit{wh}-relative determiner, free relatives of the kind illustrated above do not allow it,\textsuperscript{70} as seen in (128).

(128) \textit{*John wants [what thing I bought].}

An additional restriction exhibited by FRs is that of being subject to the so-called \textit{matching effect}. Recall that the head of a relative construction carries out a double role with respect to the matrix and relative CP. In headed relatives, the double syntactic role is marked through case (on the determiners, the head, or the whole relative CP) in languages exhibiting overt case marking and through the use of prepositions in the others. In FRs, where
the head and the external determiner are both missing, the wh-relative deter-
miner is the only lexical element available to overtly express this double
syntactic relation. In many languages displaying overt case morphology on
the wh-relative determiner, this must match in category and case with the
syntactic role it carries out in both the matrix and the relative CP. In (129),
where both the matrix and the relative CP select a DP category, the sentence
is well formed.

(129) I will like [\text{DP whom John chooses}].

Languages vary as to whether or not they display matching effects. The
need for the wh-relative determiner to match the category required by its
position in both the matrix and the relative CP is illustrated in English by the
ungrammaticality of (130). Violation of the matching requirement derives
from the fact that the wh-relative determiner displays the category required
by its position inside the relative CP, i.e. a DP, while the requirement of the
matrix verb selecting a prepositional phrase is not met.

(130) *I will talk [\text{DP whom John chooses}].

Likewise, mismatch between the case required by the matrix and by the
relative CP yields to ungrammaticality, as in (131a). However, when both
clauses are assigned the same case, the sentence is grammatical, as in (131b).

(131) a. *Pomagal bom [kdor pride prvi].
help will-1sg who-Nom comes first
‘I will help whoever comes first.’

b. Pomagal bom [komur oni pomagajo].
help will-1sg who-Dat they help
‘I will help whoever they help.’
(Izvorski 1995: 3)

As opposed to EHRCs and IHRCs, FRs do not stack, as shown in (132).

(132) [[What I need (*[what John advised me to buy])]] is available on the
web site.

Interestingly, Alexiadou et al. (2000: 25) report a Bulgarian FR construc-
tion studied by Rudin (1986: ch. 6). The sentence in (133) exhibits multiple
wh-constituents.
Alexiadou et al. suggest that the sentence in (133) instantiates a form of correlative construction, as described by Dayal (1991) for Hindi. Correlative clauses will be analyzed in § 3.5.1.4. I therefore postpone the discussion on multiple \*wh\*-constituents to the next section.

Consider now the minimal pair in (134), a FR (134a), and an indirect interrogative clause (134b).

(134) a. *I’m helping [who you’re hurting].

   b. *I’m wondering [who you’re hurting].

The two sentences differ only for the selection requirements of the matrix predicate: the predicate help in (134a) selects a DP, while the predicate wonder in (134b) selects a CP. By observing the strong similarities between (134a) and (134b), one could be tempted to assign the two embedded \*wh\*-clauses the same analysis. Thus, by extending to the FR the categorial status of the \*wh\*-interrogative clause, we could consider the \*wh\*-clause in (134a) a simple CP. However, at least two facts concerning the relative CP of a FR contradict such an analysis:

a. its nominal distribution. As anticipated, the selection compatibility of the two structures is different. While the FR in (134a) is compatible with a DP-selecting verb, the interrogative in (134b) is not. This is shown by the grammaticality of (135a), where the interrogative clause is substituted with a simple DP, and by the ungrammaticality of (135b), where the same substitution is not allowed.

(135) a. *I’m helping [DP the man].

   b. *I’m wondering [DP the man].

Moreover, FRs are banned from environments disallowing overt nominals as shown in (136a), where the subject position of a nonfinite predicate is occupied by an overt nominal, and in (136b), where the same position is occupied by a FR.
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(136)  
a.  \([\text{PRO}] / [\text{*Bill}] \) to speak out now would be a mistake.

b.  \([\text{PRO}] / [\text{*Who(ever) had that crazy idea}] \) to speak out now would be a mistake.

(Grosu 1994: 4)

FRs are, instead, allowed in environments banning plain CPs, as the subject position of an inverted auxiliary; see (137).\textsuperscript{72}

(137)  
a.  \([\text{*Did [that my sister bought a new house]} \) really surprise him?

b.  \([\text{Did [what my sister bought for John]} \) really surprise him?

FRs thus pattern with headed relatives being complex nominal clauses. This is a strong argument in favour of assuming a common abstract underlying structure for both headed relatives and FRs.

This proposal will be discussed in detail in § 3.5.1.3.

The data just presented seem to be falsified by the following observation. FRs are also attested to appear in positions other than those reserved for DPs, i.e. argument positions. They are also found in AP positions (138a), AdvP positions (138b), and PP positions (138c).\textsuperscript{72}

(138)  
a.  Sarah is \( [\text{however beautiful her mother was}] \).

b.  Sarah writes \( [\text{however neatly her teacher does}] \).

c.  Sarah has breakfast \( [\text{where her brother usually does}] \).

Such data will be further discussed in § 3.5.1.3, where FRs receive a structural representation.

Concluding the description of FRs, I will briefly illustrate two peculiar kinds of free relatives departing from what I refer to as ‘standard’ FRs, following Grosu (1994, 2002). The wh-relative determiner of English FRs can incorporate the suffix -ever (-unque in Italian FRs). When this happens, full wh-nominals are also accepted, as in (139a) where the wh-relative determiner whatever is followed by the nominal poem. This is
not an available option for *wh*-relative determiners of headed relatives, as shown in (139b).

(139)  a. Tom likes [whatever (poem) his mother reads].
       b. Tom likes the poem [that/which(*ever poem) his mother reads].

The kind of FR in (139a) seems to violate the constraint against pied-piping observed in ‘standard’ FRs. Such violation is however only partial. The FR in (139a) only admits a kind of ‘downward’ pied-piping, which just pied-pipes the element following it (*poem*), never an ‘upward’ pied-piping involving the preposition preceding it (Donati 2000). This is attested by the ungrammaticality of (140).

(140)  *Tom enjoys [at whatever story his mother laughs].

Battye (1989) provides further arguments suggesting that relative constructions displaying the suffix -ever cannot be analyzed as true FRs (these arguments include lexical distribution, gapping in conjoined relative clauses, and occurrences with infinitival complements, relative pronouns and overt complementizers). Rather, they represent a subcategory of FRs which he refers to as pseudo-free relatives. Pseudo-free relatives pattern with ‘standard’ FRs in their nominal distribution and in constituting a strong island. This is shown respectively in (141) and (142).

(141)  Did [whatever (book) my sister bought for John] really surprise him?

(142)  *Questo è lo strumento; [che ammiro chiunque suoni e i].
       ‘This is the instrument that I admire whoever plays.’

A different kind of FR is sketched in (143a) through (143d)\textsuperscript{74} in German.

(143)  a. der [der zu spät gekommen ist] ...
       Det D\textsubscript{rel} too late come has
       ‘the (one) that has come too late’

       b. alles [was du willst] ...
       all what you want
       ‘everything that you want’

       c. etwas [was du willst] ...
       something what you want
       ‘something that you want’
d. *der-jenige [der zu spät kommt]...
   der-jenige the-one Drel too late comes
   ‘the same (one) that comes too late’

The German constructions in (143) display a common feature; namely, their relative CP is preceded by an overt D head (a determiner in 143a, a quantifier in 143b, a pronominal head in 143c, and both in 143d). Furthermore, their relative determiner is not subject to matching effects. More specifically, the external and internal determiners do not need to match in case and category. Thus, violation of the matching effect in the FR (144) disappears with an external D head, as in (145).

(144) *Ich mag [der dort sitzt].
   I like Drel-Nom there sits
   ‘I like who sits there.’

(145) Ich mag den [der dort sitzt].
   I like Det-Acc Drel-Nom there sits
   ‘I like who sits there.’

Notice that the relative determiner occurring in these kinds of relatives is the same one occurring in headed relatives, not the one we find in ‘standard’ FRs. This is shown in the following German examples.

(146) a. Der [der/*wer dort sitzt].
   Det Drel/wh-Drel there sits
   ‘(the one) who sits there’

   b. Der Mann [der/*wer dort sitzt].
   Det man Drel there sits
   ‘the man that sits there’

   c. Wer /*der [dort sitzt].
   wh-Drel /Drel there sits
   ‘who sits there’

Due to these properties shared with headed relatives, this kind of FR is often referred to as a false FR (Grosu 1994, 2002, a.o.).

FRs constitute a wide field of research whose details and variation will not be further discussed here. The data on FRs discussed so far all meant to provide the reader with basic knowledge of the different typologies of
relativization. The reader is thus referred to Grosu (1994), Grosu and Landman (1998), and de Vries (2002), a.o. for a more detailed discussion on FRs.

3.3.4. Correlative clauses

The correlative construction is a strategy of relativization employed by many languages including Latin, Sanskrit, Old English (Haudry 1973; Downing 1978: 399–405; Keenan 1985; Hock 1988, 1989), Mandingo (Bokamba and Dramè 1976), Hindi (Dayal 1988, 1991; Grosu 2002; Bhatt 2005b), Marathi (Bhatt 2005b), and Hungarian (Liptak 2005), a.o.

Keenan (1985) observes that correlative structures are restricted to verb-final languages, but analyses detecting this construction in head-initial languages such as Hungarian (Liptak 2005) and presumably American Sign Language (Neidle et al. 2000; Galloway 2012) seem to loosen its typological boundaries.

Two clauses make up the correlative structure: a matrix CP and a relative CP, whose order is not fixed but may vary. The relative CP may appear at the left of the matrix CP, as in the Hindi example in (147a), or at the right margin of the matrix CP, as in (147b).

(147) a. [jo khaRii hai] [vo laRkii lambii hai].
    REL standing is DEM girl tall is
b. [vo laRkii lambii hai] [jo khaRii hai].
    DEM girl tall is REL standing is
   ‘The girl who is standing is tall.’
   (Hindi, from Dayal 1991: 647)

What is never the case is that of the relative CP being inserted within the matrix CP, as is the case with other relativization strategies. On the other hand, the two CPs need not be adjacent. They can also be separated by a finite clause, as shown in (148) in bold characters.

(148) [jo larki: TV-par ga: rah-i: hai]1 [Sita soch-ti:]
    Rel girl TV-on sing Prog be.Prs Sita.F think-Hab.F
    hai [ki vo_i sundar hai].
    be.Prs that Dem beautiful be.Prs
   ‘Sita thinks that the girl who is singing on TV is beautiful.’
   (Hindi, from Bhatt 2003: 13)
The relative CP of a correlative structure contains a constituent, the relative DP, associated to a constituent in the matrix CP, the matrix DP. The relative DP may display a full DP or just a D head usually in the form of a *wh*-element. This latter may appear in situ in languages allowing *wh*-elements to appear in this position, or it might be fronted at the beginning of the relative CP, as observed for EHRCs and FRs. In (147) the relative DP is a D head in the form of a *wh*-element (*jo*). Likewise, the matrix DP can be a full DP or just a D head and it can also be fronted. In (147) the fronted matrix DP is a demonstrative morpheme (*vo*) taking a noun phrase (*laRkii*) as its complement. This NP acts as the head. The two DPs are interpreted as co-referent and their presence, at least in the form of a D head, is obligatory.

The semantics of the relative and the matrix DP seem to be different. While the relative DP is interpreted as indefinite, the matrix DP has a definite interpretation.

Subbarao (1984: 13) suggests that if the matrix DP is indefinite, the matrix CP can only occur at the left of the relative CP, as shown by the grammaticality of (149a) and the ungrammaticality of (149b).

(149) a. *[do laRkiyāã lambii hāi] [jo khaRii hāi].
   two girls tall are Rel standing are
   ‘Two girls who are standing are tall.’
   (Hindi, from Dayal 1991: 648)

b. *[jo laRkiyāã khaRii hāi] [do lambii hāi].
   Rel girls standing are two tall are
   ‘Two girls who are standing are tall.’
   (Hindi, from Dayal 1991: 648)

Dayal (1991) observes that a way to improve the grammaticality of (149b) is to introduce a partitive, as in (150).

(150) jo laRkiyāã khaRii hāi un-me-se do lambii hāi.
    Rel girls standing are Dem-Partitive two tall are
    ‘Two of the girls who are standing are tall.’
    (Hindi, from Dayal 1991: 648)

Moreover, Dayal (1991: 649) suggests that it is not exactly a matter of definiteness that is at play in the matrix DP. The constraint seems rather to be the necessary presence of a demonstrative. She provides evidence for this assumption by observing that bare NPs functioning as definites in Hindi are nevertheless disallowed in a matrix CP surfacing at the right of the relative CP, as shown in (151).
As for the indefiniteness of the relative DP, it is interesting to report a study by Haudry (1973) on the origin of Latin subordination. As noted in Bianchi (1999: 99), Haudry:

[...] examines the morphology of the relative element in various types of correlative dyptic. In Hittite, Latin and in the ancient Baltic languages the relative element of the dependent clause derived from the stem *kwo-, which also gave indefinite and interrogative pronouns. Haudry argues convincingly that in the correlative structure the derivative of *kwo- was an indefinite determiner, and not an interrogative one. In fact, the relative element in the dependent clause constitutes new information, hence it is indefinite, whereas the correlative element in the main clause is resumptive, hence it is anaphoric and definite (derived from the demonstrative theme *to-). In other terms, the relative use of the derivatives of *kwo- in the correlative structure represents a specialized use of the indefinite (Haudry 1973: 166–168; Gonda 1954: 272–273).

I will return to this in § 3.5.1.4.

Despite the obligatory presence of the D head in each DP, the head displays some freedom. It can be realized only in the relative CP, as is the case in IHRCs. This possibility is exemplified by the Hindi sentences in (148) and (150). It can alternatively appear only in the matrix CP, as is the case with EHRCs, and as exemplified by the sentences in (147).

In Hindi correlative clauses, the head may also appear in both CPs, as in (152), which is never the case with other relativization strategies, as shown by the ill-formed EHRC in (153).

Finally, in some languages, the head of a correlative structure can be omitted in both clauses, as is the case of Hungarian (154).
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(154) [Aki e korán jön] [azt a szervezők e Ingyen beengedik].
Rel-who early comes that-Acc the organizers freely PV-admit-3Pl
‘Who comes early, the organizers will let him in for free.’
(Hungarian, from Lipták 2005)

This last possibility seems to assimilate correlatives to free relatives. Another property correlatives share with FRs is the impossibility of stacking operations. The Hindi sentence in (155) shows the ungrammaticality of stacking within a correlative clause.

(155) [jo laRkii khaRii hai (*jo ravii kii dost hai)],
WH girl standing is WH Ravi Gen friend is
[vo (laRkii)bahut lambii hai].
Dem girl very tall is
‘Which girl is standing (*who is Ravi’s friend), she, that girl is tall.’
(Hindi, from Grosu 2002)

Correlatives also pattern with FRs in allowing multiple wh-constituents. In this structure, the relative CP may display more than one head and for each relative DP within the relative CP, there is an associated matrix DP in the matrix CP. This is illustrated in the examples from Hindi (156a), Marathi (156b) and Hungarian (156c).

(156) a. [jis laRkiiNE jis laRkeKO dekhaa] [usNE
REL girl-ERG REL boy-ACC saw DEM-ERG
usKO passand kiyaa].
DEM-ACC liked
‘Which girl saw which boy, she liked him.’
(Hindi, from Dayal 1991)

b. [jya mula-ne jya muli-la pahila] [tya mula-ne
Rel boy-Erg Rel girl-Acc saw Dem boy-erg
tyamuli-la pasant kela].
Dem girl-Acc like did
‘For boy x, girl y s.t. x saw y, x liked y.’
(Lit. [which boy saw which girl], [that boy liked that girl].)
(Marathi, from Bhatt 2003)
c. \([\text{Aki} \ amit \ kér}], \ [az \ azt \ elveheti]\).

Rel-who \ Rel-what-Acc \ wants \ that \ that-Acc \ take-Pot-3Sg

‘Everyone can take what he/she wants.’

(Hungarian, from Lipták 2005)

As observed in § 3.3.2 for Japanese, some languages display more relative typologies. Hindi is among these languages, employing both correlative clauses and EHRCs, as illustrated by the minimal pair in (157) below.

(157) a. \([jo \ laRkii \ khaRii \ hai] \ [vo \ lambii \ hai].\)

REL \ girl \ standing \ is \ DEM \ tall \ is

‘The girl who is standing is tall.’

(Hindi, from Dayal 1991)

3.3.5. Summing up the properties displayed by the main syntactic typologies

The table in (158) is a rough summary of the main properties displayed by the four main syntactic typologies of relativization discussed above.

(158)

<table>
<thead>
<tr>
<th>Properties</th>
<th>IHRCs</th>
<th>EHRCs</th>
<th>FRs</th>
<th>Correlatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position of head with respect to</td>
<td>Internal</td>
<td>External</td>
<td>Absent in both CP</td>
<td>-Internal</td>
</tr>
<tr>
<td>the relative CP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distribution of the relative</td>
<td>Nominal</td>
<td>Clausal adjunct</td>
<td>Nominal</td>
<td>? to be verified</td>
</tr>
<tr>
<td>CP in the sentence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indefiniteness of relative DP</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Definiteness of matrix DP</td>
<td>Yes</td>
<td>Optional</td>
<td>Not present in ‘standard’ FRs</td>
<td>Yes</td>
</tr>
<tr>
<td>stacking</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Multiple wh-constituents</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Having presented a descriptive survey of the different syntactic typologies of relativization, I now turn to their semantic interpretation.
3.4. Three semantic interpretations of relative clauses

Traditionally, the syntactic and semantic criteria classifying relative constructions are thought of as independent, so that given a syntactic typology of relativization, a particular semantic interpretation does not follow automatically. To exemplify, consider the following sentences in (159a) and (159b).

(159) a. The children who visited the museum behaved very well.
    b. The children, who visited the museum, behaved very well.

Both sentences are EHRCs but have different semantic interpretations. Sentence (159a) entails that there are children who did not go to the museum; thus the relative CP who visited the museum semantically restricts the head children, identifying it in a univocal way. In (159b) this entailment disappears and the relative CP who visited the museum is predicated of all children. The sentence in (159a) is said to receive a restrictive interpretation, while the one in (159b) receives a non-restrictive interpretation.

However, there seem to be reasons to believe that the syntactic typology of relative structures has a role in licensing their semantic interpretation. In their investigation on the semantic types of relative clauses, Grosu and Landman (1998) have outlined a strict correlation between the semantic interpretation relative structures receive and the role played by the material external or internal to the relative CP in interpreting the head.76 De Vries (2002), taking up Grosu and Landman’s (1998) suggestion, tries to draw a syntactic correspondence between the semantic types and syntactic typologies. Within this promising path of investigation, possible connections between the syntactic and semantic typologies might shed light on the syntactic nature of some structures that, like non-restrictive relatives, are still awaiting a satisfactory structural representation.

This section will attempt to illustrate the semantic classification of relative constructions that I here divide into three semantic types: those receiving a restrictive, non-restrictive and maximalizing interpretation. The distinction between the three semantic classes does not lead to evident syntactic differences (as is the case with the syntactic criterion of classification seen in § 3.3). Nonetheless, the semantic interpretations differ in the syntactic properties the three types do or do not license. It is on these properties that my description will focus. Section 3.4.1 discusses restrictive relative clauses, § 3.4.2 describes non-restrictive relative clauses, and § 3.4.3 addresses maximalizing relative clauses. I postpone to § 3.5.1.5 the representation and
discussion of some derivations proposed in the literature for restrictive and non-restrictive relatives.

Finally, following the tradition, I graphically represent non-restrictive relative clauses by enclosing them between commas (as in 159b) and, for the sake of simplicity, I use acronyms to refer to Restrictive Relative Clauses (RRCs) and Non-Restrictive Relative Clauses (NRRCs).

3.4.1. Restrictive relative clauses

As briefly anticipated, the relative CP of a RRC identifies the head as the specific referent of which it predicates something. It thus restricts the class of entities that can be denoted by an NP. In (159a), repeated here as (159a’), the relative CP *who visited the museum* restricts the set of children to those that went to the museum.

(159)’ a. *The children who visited the museum behaved very well.*

On the semantic side, RRCs signify sets intersecting with the set denoted by the head NP, thus establishing the restriction of the matrix clause determiner (see Partee [1973] 1976). More specifically, in RRCs, “[..] the external NP designates a set that intersects with the set designated by the relative clause. At the same time, the external NP semantically restricts a variable that ends up syntactically bound by a determiner that binds another token of the same variable within the relative clause [..]” (Grosu, 2002: 146).

The following is a brief analysis of the main syntactic properties displayed by RRCs. In presenting them, I will try to abstract over language-specific characteristics to give a general picture holding for all languages. On the other hand, in some cases I will not omit interesting observations of syntactic characteristics that, although language-specific, might turn out to be useful for the syntactic derivation of the semantic types illustrated and proposed in § 3.5.

3.4.1.1. Antecedent-related properties

Although licensing both definite and indefinite heads, RRCs display restrictions on the kind of head they allow. More specifically, a NP head can be modified by a RRC only if it is non-specific. In other words, in order to intersect with the set denoted by the RRC, the head cannot denote a specific,
unique referent but its reference has to be able to be further restricted. This is confirmed by the following properties displayed by the head of a RRC.

**a. Proper name head**

RRCs cannot modify proper names, as the ungrammaticality of (160a) shows.

(160) a. *Thomas that works very hard has been promoted.

b. The young man that works very hard has been promoted.

By replacing the proper name with a non-specific NP, grammaticality is recovered, as shown in (160b). Proper name heads denote a unique entity which cannot be further restricted. De Vries (2002: 184) points out that if a RRC modified a unique referent, the outcome would be vacuous quantification. The intersection would, in fact, take place between two sets denoting a single referent that could be either the same one or a different one. In the former case, the two sets would not intersect but would rather be coincident; in the latter case, the two sets would never be able to intersect. He further reports some exceptions of “apparent” RRCs, as in (161) below.

(161) a. Onze Vader Die in de hemelen zijt.

   ‘Our Father Who in heaven art’

b. Joop die alles weet heft natuurlijk het laatstewoord!

    Joop who everything knows has of course the final word.

   (de Vries 2002: 184)

According to de Vries, these relative clauses are neither restrictive nor non-restrictive. They rather indicate a fixed property of the head, some sort of ‘epithet’ without contributing to either identifying or adding further information to the head. A well-known exceptional case of relative modification of a unique referent is also represented by the sentences in (162b) and (163).

(162) a. *the Paris

b. the Paris that I love

c. the Paris of the old days

   (de Vries 2002: 184)

(163) The Thomas who works in this agency has been promoted.
While a proper name like *Paris* cannot be selected by a determiner, as shown in (162a), the relative sentence in (162b) allows such selection. The sentence in (162b) presents a set of different characteristics of the unique referent ‘Paris’ from which, by intersecting with the set denoted by the relative clause, only one is singled out. As de Vries (2002: 184) points out, the possibility for the definite determiner *the* to select the unique referent is shared by any modifier, as in (162c). (See also Bianchi 1999.) Likewise, (163) entails the presence of more referents called *Thomas* from which only one, specified by the information provided in the relative clause, is picked up.

b. Pronominal head

RRCs cannot modify pronouns. The ungrammaticality of (164) derives from the denotation of uniqueness carried out by pronouns. As for proper names, pronouns lack the requirement of non-specificity.

(164) *We that are musicians think that you that are dancers should move faster.

c. Quantified head

A RRC can modify a quantified head (Ross 1967).

(165) *Every student who attended my course will be rewarded.

The licensing of the intersection between the set denoted by the head and the set denoted by the RRC follows if we consider that quantifiers turn the head into a non-specific element (see de Vries 2002: 183).

d. Only NP heads

RRCs only modify NPs. The head of a restrictive cannot be any category (Sells 1985). This is shown by the ungrammaticality of (166a), (166b) and (166c), whose heads (within squared brackets) are respectively an AP, a VP, and a CP.


b. *The children [VP ran to the car] that I didn’t.

c. *[CP Tom booked the tickets] that I didn’t believe.
The data illustrated in this section suggest that the peculiar semantic function of restricting a referent, carried out by relative clauses receiving a restrictive interpretation, poses some restriction on the feature specification of the head. Specifically, it is required to be [-specific], hence, not a proper name and not a pronominal.

3.4.1.2. Relative pronouns and pied-piping phenomena

a. Material introducing the relative CP

RRCs can be introduced by either a complementizer, as in (167a); by a *wh*-relative determiner, as in (167b); or by no overt material, as in (167c).

(167) a. The young man that I met yesterday told me funny stories.
    b. The young man who I met yesterday told me funny stories.
    c. The young man I met yesterday told me funny stories.

No definiteness effect is shown in a RRC like (168).

(168) The students that there were in the hall were all graduated.

The grammaticality of (168) indicates that no strong DP is covertly present in the existential construction introduced by *there*. (See Barwise and Cooper 1981.)

b. Pied-piping

RRCs allow pied-piping of a preposition, as in (169).

(169) The man with whom John works has suddenly left for Kenya.

Heavier pied-piping is, on the other hand, not allowed by RRCs (Emonds 1979).

(170) *The house the bedroom of which I saw has been sold yesterday.

Cinque (1982) explains the impossibility of heavy pied-piping in RRCs by claiming that in this context, a closer NP node intervening between the head
and the \textit{wh}-relative pronoun, i.e. an anaphor as in (170), produces a violation of Principle A. Interestingly, de Vries (2002: 189) points out that heavy pied-piping in RRCs is possible in Dutch if a preposition precedes the intervening NP node, as in (171).

(171) \textit{De man met de vrouw van wie ik gisteren gesprochen heb, is timmerman.}

‘The man to the wife of whom I spoke yesterday, is a carpenter.’

(de Vries 2002: 189)

The same holds for Italian, as in (172).

(172) \textit{L’uomo alla moglie del quale ho parlato ieri è un falegname.}

‘The man to the wife of whom I spoke yesterday is a carpenter.’

The pied-piping phenomena of the kind in (169), (171) and (172), observed for RRCs, are consistent with a derivation suggesting movement operations, a proposal that will be discussed further in § 3.5.1.5.

3.4.1.3. Scope phenomena

\textbf{a. Scope assignment}

A RRC is by definition in the scope of the determiner or quantifier preceding the head. This is clear in (173) where the relative clause is in the scope of the external determiner.

(173) \textit{The women who had a driving licence were allowed to leave.}

Example (173) entails that some women did not have a driving licence and that only those who had it were allowed to leave. Likewise, in (174), the RRC falls under the scope of the quantifier \textit{all}.

(174) \textit{We stole all the apples that the woman put in the basket.}

In (174) the apples stolen were all those that the woman put in the basket, the entailment being that there might have been other apples placed somewhere other than inside the basket, that were not stolen.
b. **Matrix negation**

A RRC is in the scope of matrix negation (Dermidache 1991).

(175) *I don’t like the dresses my sister bought.*

In (175) the matrix negation has scope over the RRC, so that what the speaker does not like are not the general class of dresses, but just those his/her sister bought. Example (175) thus entails the presence of other dresses the speaker’s sister did not buy and that the speaker might have liked.

c. **Licensing of Negative Polarity Items (NPIs)**

As generally recognized, NPIs such as *any* and *anyone* are licensed by a c-commanding negative element (so-called ‘NPI Generalization’). This is illustrated in the grammaticality of (176a) where the negative marker *not* c-commands the NPI *any*, in the ungrammatical output of (176b) where no negation is present, and in the ill-formed sentence (176c) where the negative marker *not* does not c-command the NPI *any*.

(176)  
a. *Mary could not find any cat in the room.*

b. *Mary could find any cat in the room.*

c. *Any cat was not found by Mary.*

If we apply the NPI generalization to RRCs, we observe that NPIs appearing in RRCs are licensed by a negative element appearing in the matrix clause (Jackendoff 1977: 176), as in (177).

(177) *I did not expect to meet a woman who had any suggestion to make.*

The data on NPIs are consistent with those on matrix negation, proving RRCs to be c-commanded by negative elements appearing in the matrix CP.

d. **Ordinal head**

An ordinal preceding the head of a RRC modifies the relative clause, as illustrated in (178).

(178) The first house I bought was built in 1890.
The ordinal *first* in (178) does not modify just the NP *house* thus carrying an absolute (either temporal or spatial) interpretation; it instead modifies both the NP head *house* and the relative CP *[that] I bought*, thus facilitating a restrictive interpretation.

e. Intentional Vs

RRCs are in the scope of intentional verbs (Zhang 2001).

(179) *Gianni thinks that Sara invites only men that are not married.*

The intentional verb *think* clearly has scope not just over the head NP *men* but also over the complex NP *the men that are not married*.

The data on scope phenomena illustrated in this section all point towards the same conclusion. RRCs fall under the scope of the elements (be they determiners, negative elements, ordinals, or intentional verbs) appearing in the matrix clause.

3.4.1.4. Reconstruction and binding phenomena

Reconstruction directly refers to movement chains. Reconstruction of a category in a position different from the one it occupies is a robust diagnostic for movement. As for relative clause constructions, reconstruction is a valid diagnostic for detecting movement of the head or of other relative material thus contributing to the syntactic analysis of the different syntactic and semantic relative types. Bianchi (1999: 107–122) tests the possibility of reconstruction of the head in both RRCs and NRRCs through binding phenomena, specifically with respect to Principle A, Principle C, scope assignment and quantifier binding. Her conclusions are reported in this section.

a. Principle A

The standard version of Principle A of the Binding Theory states that an anaphor must be c-commanded in the clause. In the externally-headed RRC in (180), an anaphor embedded within the head can be bound by an element of the relative CP.

(180) *The picture of himself* that *Richard* showed me was embarrassing.
Furthermore, in (181), the Italian possessive anaphor *proprio* co-refers with the R-expression *Mario* contained in the relative CP.

(181) *Questo è l’apprezzamento al proprio lavoro di cui Mario è più orgoglioso.*
‘This is the appreciation of his own work Mario is most proud of.’

Bianchi (1999: 120) reports the proposal in the literature that an anaphor lacking a governing category can co-refer freely without being subject to Principle A (see Manzini and Wexler 1987: 422). In order to avoid this possibility, she provides data displaying a potential head for the anaphor within the matrix CP, as in (182) below.

(182) *The photographer hung the pictures of himself that John was more satisfied with.*

As shown by the grammaticality of (182), the potential head *photographer* does not block the binding of the anaphor with the R-expression *John* contained in the relative CP. The binding phenomena observed in sentences (180) through (182) above, suggest that at some point in the derivation the head of the RRC occupies a position internal to the relative CP and, specifically, a position c-commanded by the R-expression binding the anaphor. This conclusion points, therefore, towards the reconstruction of the head within the relative CP of RRCs.

b. Principle C

According to Principle C of the Binding Theory, an R-expression cannot be bound by an expression that c-commands it either inside or outside its local domain. In RRCs of the kind in (183), an R-expression contained within the subject of the main clause cannot co-refer with the subject of the RRC.

(183) *The proposal approved by Mark that he found on his desk was greatly appreciated.*

This is also confirmed by some Italian data presented by Bianchi (1999: 110), where an R-expression contained in the matrix CP cannot co-refer in the relative CP with either a null subject, as in (184), or with a clitic pronoun, as in (185).

(184) *Questo è il libro di Rachele di cui pro ha più sentito parlare.*
‘This is the book by Rachele of whom (she) has heard more.’
These data receive no explanation unless we assume the movement of a category from the relative CP to the matrix CP. More specifically, the binding data on R-expressions confirm the conclusion reached for Principle A; i.e., the impossibility for an R-expression to co-refer with a (null or clitic) pronoun in the relative CP suggests the reconstruction of the R-expression in a position c-commanded by the pronoun inside the relative CP.

### c. Head reconstruction and scope

Consider the following RRC.

(186) *The policeman listened to the two women that every man accused.*

The available reading for (186) is one in which for every man, there are two women he accused. That equals to saying that the universal quantifier *every*, subject of the RRC, has scope not just over the head within the matrix CP, but also over the numeral preceding it. The wide scope reading of the universal quantifier suggests the possibility of reconstructing the numeral in a position internal to the RRC. (See Bianchi 1999: 122–123.)

### d. Ellipsis

The head of a VP ellipsis may include a RRC.

(187) *My mother ate the vegetables I cooked; my father didn’t (eat the vegetables I cooked).*

In example (187), the VP ellipsis appearing in the final clause is reconstructed together with the RRC. This suggests that the head NP *vegetables* object of the VP *ate* forms a constituent with the RRC *I cooked*.

### e. Quantifier binding

A pronoun co-refers with a quantified expression c-commanding it (Reinhart 1983: 122). In (188) a RRC is transparent for variable binding by a quantifier in the matrix CP (see Bianchi 1999: 123–124).

(188) *Nobody revealed the plan he had been preparing.*
Moreover, Bianchi (1999: 124) shows that the same co-reference is established between a pronoun embedded in the head of a RRC and a quantified expression realized in the relative CP, as in (189).

(189)  a. The aspect of his character that no-one wants to show is the worst one.
   b. The image of herself that every woman seeks is always far from reality.

The data on quantifier binding are consistent with Principle A and C of the Binding Theory suggesting a derivation where the head is c-commanded by the quantifier of the relative CP.

f. Parasitic gaps

Another test to check the licensing of binding relations between the head and a RRC is represented by parasitic gaps. As shown in (190) below, RRCs allow parasitic gaps (Safir 1986: 673).

(190) Tigers are animals that everyone who sees is afraid of.

The NP animals is able to bind both the parasitic gap within the RRC and the empty category in sentence-final position within the matrix clause.

The reconstruction and binding phenomena illustrated in this section show that RRCs are transparent for binding relations and that they allow the reconstruction of the head in a position internal to the relative clause.

3.4.1.5. Extraposition

RRCs can be extraposed; that is, instead of sitting next to the head they refer to, they can be separated from it by intervening lexical material (Emonds 1979; Vergnaud 1974, a.o.), as shown in (191) below.

(191) I talked to the woman yesterday that knows my husband.

3.4.1.6. Stacking

RRCs are reported to license stacking (Jackendoff 1979; McCawley 1988, a.o.). “Following Partee ([1973] 1976), it is standardly assumed that restrictive relative clauses denote sets which semantically combine with their head
through set intersection. Since more than one set can intersect with the same head, restrictive relative clauses can stack” (Grosu and Landman 1998: 126).

(192) The students who arrived late who have not handed in their paper yet must come to see me.

The licensing of stacking in RRCs suggests that their relation to the matrix clause is not just one of dependency, but also one of embedding.

3.4.1.7. Other properties

a. Sentential adverbs

Sentential adverbs of modification cannot appear inside RRCs (Ogle 1974), as shown by the ungrammatical output in (193).

(193) *The men that have by the way lost their suitcase should go to the police.

b. Order restrictions

When a RRC and a NRRC combine in the same construction, the RRC always precedes the NRRC (Jackendoff 1977; Smits 1988; Platzack 1997).

(194) a. The cake that Mary made, which by the way I did not taste, was a success.
    b. *The cake, which by the way I did not taste, that Mary made was a success.

The data in (194) suggest a stricter syntactic bind holding between the head and a RRC than between the head and a NRRC.

3.4.1.8. Summing up

Trying to sum up the main results of the data here presented on RRCs, we can claim that:

a. RRCs require a non specific head;
b. RRCs fall under the c-command domain of the external determiner;
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c. RRCs form a constituent with their head;

d. RRCs are transparent for binding;

e. the head of a RRC can be reconstructed within the relative clause, thus suggesting that movement operations have taken place.

3.4.2. Non-restrictive relative clauses

NRRCs refer to an element of the matrix CP by providing additional, non-required information on the referent. As such, they do not contribute to placing a restriction on the external determiner and thus restricting the set of entities in the world, as is the case of RRCs, hence the definition non-restrictive. Given that the information they provide is not crucial to univocally identifying the referent, relatives receiving a non-restrictive interpretation are also called appositives. This property of NRRCs has often lead researchers to assimilate them into parentheticals and independent discourse sentences (see Emonds 1979; McCawley 1982; Grosu 2002, a.o.). However, as Grosu (2002: 146) points out, one important difference concerns the subordinate status of NRRCs as opposed to independent sentences. He observes that while pronominals, like she in (195a), may refer to a referent not present in the discourse context, relative pronouns, like who in (195b), require a linguistic antecedent.

(195) a. The house collapsed; she ran away terrified.

                b. *The house collapsed, who ran away terrified.

                   (Grosu 2002: 146)

As such, both RRCs and NRRCs contain a syntactic gap in the form of a free variable, but while RRCs seem to be related to the material of the matrix CP by syntactic binding, the relation holding between NRRCs and the matrix CP seems based on discourse anaphora (see also Sells 1985).

Potts’s (2005) contribution to the semantic and syntactic understanding of NRRCs is to interpret them as ‘conventional implicatures’ in a semantically autonomous dimension which is part of what is asserted, albeit not interacting with the assertive component of the sentence.

The semantic relation holding between NRRCs, their head, and the material within the matrix CP is attested by the syntactic properties they display. Following is a description of the behaviour of NRRCs in the same domains analyzed in § 3.4.1 for RRCs.
3.4.2.1. Head-related properties

Like RRCs, NRRCs allow both definite and indefinite heads. The latter, however, are subject to a restriction. As de Vries (2002: 182) points out, the head of a NRRC can be indefinite and generic but it must be specific (i.e. presupposed). By drawing a comparison with RRCs, we might say that the head of NRRCs must bear the feature specification [+specific]. Notice the contrast de Vries points out between the unacceptability of the sentence in (196a), whose head is non-definite and non-specific, and the grammaticality of both (196b), whose head carries a presupposed definiteness, and (196c), whose head is generic but specific.

(196) a. *Ik zag een man, die een rode hoed droeg.
   I saw a man, who a red hat wore
b. *Er woont hier een bepaalde man, die je trouwens ook wel kent.
   there lives here a certain man, who you by.the.way indeed also know
c. Walvissen, die zoogdieren zijn, worden veel bestudeerd.
   whales, who mammals are, are much studied
   (Dutch, from de Vries 2002: 183)

The same holds for Italian, as illustrated in (197) below.

(197) a. *Luca vide una donna, che assomigliava a sua moglie.
   ‘Luca saw a woman, who resembled his wife.’
b. Ieri ho incontrato una certa donna, che mia madre conosce bene.
   ‘Yesterday I met a certain woman, that my mother knows well.’
c. Le infermiere, che fanno turni pesanti, dovrebbero essere pagate di più.
   ‘Nurses, who have heavy shifts, should be paid more.’

a. Proper noun head

As expected from the facts illustrated above, NRRCs can modify proper names denoting the highest specificity of a referent; see (198).

(198) Thomas, who works very hard, has been promoted.

b. Pronominal head

NRRCs can also modify pronouns which denote a definite, specific entity.

(199) We, who are musicians, think that you, who are dancers, should move faster.
c. **Quantified head**

NRRCs do not allow a quantified head (Ross 1967).

(200) *Every student, who attended my course, will be rewarded.

De Vries (2002: 183) claims that the impossibility for NRRCs to license a quantified head is linked to their specificity restriction. As already pointed out in § 3.4.1.1, quantification turns the head into a non-specific element. He also shows the possibility for a NRRC to license a quantified head under specific circumstances, that is, when the quantified head is specific within the context. He quotes the sentence by Sells (1985: 2) that I use in (201) below.

(201) A tutor will register each student, who is then responsible for getting his papers to the Dean’s office on time.

d. **Any category head**

NRRCs can take as their head not just NPs but other syntactic categories (Sells 1985). This is illustrated by the grammaticality of the sentences in (202a), (202b) and (202c), whose heads (within squared brackets) are respectively an AP, a VP and a CP.

(202) a. Sara is \([_{AP} \text{famous}]\), which I am not.

   b. The children \([_{VP} \text{ran to the car}]\), which I didn’t.

   c. \([_{CP} \text{Tom booked the tickets}]\), which I didn’t believe.

The possibility for NRRCs to take any category as their head is likely to be linked to two factors.

1. The syntactic nature of the variable. The *wh*-relative pronoun of NRRCs seems to be able to be bound by larger constituents, supporting the claim that it is a kind of discourse anaphora (see Sells 1985; Grosu 2002, a.o.). In this respect, it shows a kind of co-reference similar to that obtained by ordinary demonstrative pronouns. Compare (202b) with (203) below.

   (203) The children ran to the car. I also desired that (to run to the car).
Three semantic interpretations of relative clauses

2. NRRCs do not seem to intersect with a property set, i.e. a head, denoted in the matrix CP, as RRCs do. The lack of semantic intersection between the head and the relative CP probably allows the variable contained in NRRCs to abstract over larger amounts of syntactic material.

Bianchi (1999, 2000) casts some doubts on the genuine relative nature of constructions such as those in (202). The main problem posed by such structures is their derivation, which hardly receives an explanation under the head raising analysis defended by Bianchi. The sentences in (202) will be further discussed in § 3.5.1.5.

If such sentences were proved to be real relatives, the ability of NRRCs to license categories other than NPs would require different syntactic structures for the two semantic types, and therefore different derivations.

3.4.2.2. Relative pronouns and pied-piping phenomena

a. Material introducing the relative CP

As for the material introducing the relative CP of NRRCs, variations are attested across languages. In English, the relative complementizer that is not allowed in NRRCs (204a), while, according to Smits (1988), it is licensed in languages like Italian (204b), Catalan and Portuguese, as well as in Scandinavian languages.

(204) a. *John’s brother, that I met yesterday, told me funny stories.
   b. Il fratello di John, che ho incontrato ieri, mi ha raccontato storie divertenti.
      ‘John’s brother, that I met yesterday, told me funny stories.’

On the other hand, languages seem to agree on the presence of wh-relative determiners introducing the relative CP of NRRCs. This is shown by the acceptability of the English example in (205a) and the Italian example in (205b).

(205) a. John’s brother, who I met yesterday, told me funny stories.
   b. Il fratello di John, al quale non abbiamo detto niente, arriverà stasera.
      ‘John’s brother, to whom we did not say anything, will arrive tonight.’
Finally, Smits (1988) claims that in English and Scandinavian languages, NRRCs cannot be introduced by a zero particle, as shown by the unacceptability of (206).

(206) *John’s brother, I met yesterday, told me funny stories.

The data illustrated above seem to suggest that all languages allow the presence, within a NRRC, of a variable (in the form of a wh-element) co-referencing with an element of the matrix clause (the head). Only some languages, however, seem to license a null wh-variable.81

As opposed to RRCs, NRRCs show a definiteness effect, as shown by the unacceptability of (207).

(207) *She picked up the bottles, which there are in the box.

Sentence (207) indicates that the existential construction introduced by there in NRRCs contains a covert strong DP (see Barwise and Cooper 1981) as opposed to a weak DP covertly present in the existential constructions of RRCs; see example (168) in § 3.4.1.2.

b. Pied-piping

NRRCs allow pied-piping of a preposition, as in (208).

(208) Mark, with whom John works, has suddenly left for Kenya.

Heavy pied-piping is also allowed by NRRCs (Emonds 1979).

(209) The house, the bedroom of which I saw, was sold yesterday.

As the reconstruction data will point out in § 3.4.2.4, pied-piping phenomena in NRRCs suggest the movement of the wh-relative determiner towards the left edge of the relative CP.

3.4.2.3. Scope phenomena

a. Scope assignment

A NRRC is not in the scope of the determiner or quantifier selecting the head. The sentence in (210a) has only the meaning that all the women in the
discourse context had a driving licence and that they were allowed to leave. In (210b) the quantifier all has no scope over the NRRC; thus, the entailment is that the woman put all the apples in the basket and that all the apples present in the discourse context were stolen, i.e. there are no other apples present which were not stolen.

(210) a. The women, who had a driving licence, were allowed to leave.
    b. We stole all the apples, which the woman put in the basket.

b. Matrix negation

A NRRC does not fall in the scope of matrix negation (Dermidache 1991). Sentence (211) means that the speaker does not like all the dresses present in the discourse context, not only those the speaker’s sister bought (as in the RRC in 175 above).

(211) I don’t like the dresses, which my sister bought.

c. Licensing of Negative Polarity Items (NPIs)

NPIs appearing in NRRCs are not licensed by a negative element in the matrix clause (Jackendoff 1977: 176), as shown in (212).

(212) I didn’t expect to meet Mary, who had some/*any suggestion to make.

These data are consistent with the data on matrix negation suggesting that NRRCs are not in the scope of (negative) material appearing in the matrix.

d. Ordinal antecedent

An ordinal preceding the head of a NRRC does not modify the relative clause; rather, it modifies only its head, as illustrated in (213).

(213) The first house, which I bought, was built in 1890.

In the sentence (213) the ordinal first modifies just the head of the NRRC. Thus the sentence might mean that the house that was built in 1890 is the first one in a row of houses, not the first one the speaker bought in his/her life. The scope of the ordinal does not extend to the NRRC, which is consistent with the data on matrix negation and NPIs.
e. Intentional Vs

NRRCs are not in the scope of intentional verbs (Zhang 2001).

(214) #Gianni thinks that Sara invites the men, who are not married.

The intentional verb think does not have scope over the NRRC but only over the NP men.

The data on scope phenomena all point towards the conclusion that an element, be it a determiner, a quantifier, a negative element, an ordinal or an intentional verb in the matrix clause, has no scope over a NRRC. In other words, a NRRC seems to be an island for scope by elements of the matrix CP.

3.4.2.4. Reconstruction and binding phenomena

a. Principle A

As opposed to RRCs, an anaphor embedded within the head of a NRRC cannot be bound by an element appearing within the relative CP.

(215) *The picture of himself, which Richard found in the drawer, was embarrassing.

Bianchi (1999: 120) observes that some NRRCs yield contradictory results concerning Principle A. In (216) I report an Italian example used by Bianchi (1999: 120) to illustrate this fact.

(216) ?Quella conseguenza della propria decisione, che Gianni non aveva considerato, si rivelò disastrosa.

‘That consequence of his own decision, that Gianni hadn’t considered, turned out to be disastrous.’

In (216), the possessive anaphor propria might be bound by the R-expression Gianni, thus suggesting the possibility of reconstructing the head within the NRRC, in a position where the NP Gianni is able to c-command it. However, the introduction within the matrix CP of a possible head able to bind the anaphor in the S-structure clears any doubt, proving the impossibility of the anaphor being bound by a referent inside the NRRC and thus for the impossibility of reconstruction of the head within a NRRC.
Three semantic interpretations of relative clauses

(217) *The doctor found out about the critics to himself, which the patient read on the board.

In (217), the only reading available is one in which the anaphor himself is bound by the head doctor, not by the referent in the NRRC patient.

Recall that in RRCs, the presence of a possible head for the anaphor in the S-structure does not block binding or reconstruction of the head within the relative CP.

b. Principle C

In NRRCs, an R-expression contained within the constituent of the head can co-refer with the subject of the NRRC without giving rise to a violation of Principle C. This is illustrated by the acceptability of the English example in (218), where Mark can co-refer with the pronoun he, and by the Italian example in (219), where the R-expression Laura can co-refer with the null subject in the relative CP.

(218) The proposal approved by Mark, which he found on his desk, was greatly appreciated.

(219) L'amica di Laura, alla quale proÌ ha regalato il suo orologio preferito, colleziona antichità.

‘Laura's friend, to whom (she) has given her favourite clock, collects antiques.’

These facts suggest, once again, the lack of reconstruction of the head of a NRRC within the relative CP.

c. Reconstruction of pied-piped material

NRRCs allow reconstruction of the material contained in the pied-piped phrase (Bianchi 1999: 127). In (220) the reconstruction is shown by Principle C effect: the R-expression Beatrice within the pied-piped phrase co-refers with the subject of the NRRC (220a). In the following examples, reconstruction is shown by two instances of Principle A: binding of the anaphor propria (220b) and quantifier binding of nessun medico with the anaphor propri (220c). The examples in (220) are taken from Bianchi (1999: 127).
Relativization strategies in spoken languages

(220) a. Andrea, [le cui insinuazioni su Beatrice] proi non è più disposta a sopportare t, ...
   ‘Andrea, whose insinuation on Beatrice (she) is not willing to stand any more…’

b. Andrea, [la cui passione per la propria moglie] Juan non è disposto a tollerare t, ...
   ‘Andrea, whose passion for his wife Juan is not willing to tolerate…’

c. Questo farmaco, [il cui effetto sui propri pazienti] nessun medico è in grado di prevedere t, ...
   ‘This medicine, whose effect on his patients no doctor is able to foresee…’

Bianchi (1999: 127) claims that “[..] the A’ dependency created by the pied-piped phrase allows reconstruction; more specifically, it is an instance of movement. It seems implausible to stipulate that appositive clauses with and without pied piping involve two completely different A’ dependencies; therefore, appositive clauses must have a movement derivation”.

d. Reconstruction and scope

Consider the following NRRC.

(221) The policeman listened to the two women, whom every man accused.

The only available reading for (221) is one in which every man accused two specific women. That amounts to saying that the universal quantifier every, subject of the NRRC, has scope just over the head women, not over the numeral preceding it. The wide scope reading of the universal quantifier is therefore not available in NRRCs suggesting the impossibility of reconstructing the numeral in a position internal to the NRRC (see Bianchi 1999: 122–123).

e. Ellipsis

The head of a VP ellipsis does not include a NRRC.

(222) My mother ate the vegetables, which by the way I cook very well; my father didn’t (eat the vegetables).
In (222) the VP ellipsis of the matrix predicate does not include the NRRC but only its head.

**f. Quantifier binding**

NRRCs are not transparent for binding of a variable by a c-commanding quantifier (Reinhart 1983: 122).

(223) *Nobody revealed the plan, which he had been preparing.

In (223), the quantifier nobody cannot co-refer with the pronoun he in the NRRC. The same opacity for quantifier binding is illustrated in (224) where a pronoun embedded in the head of a NRRC cannot be bound by a quantified expression realized in the relative CP.

(224) a. *The aspect of his character, which no-one wants to show, is the worst one.

b. *The image of herself, that every woman seeks, is always far from reality.

The data in (223) suggest that the NRRC is an island for quantifier binding and the data in (224) further suggest the impossibility for reconstruction of the head within the non-restrictive relative CP.

**g. Parasitic gaps**

NRRCs do not license parasitic gaps (Safir 1986: 673).

(225) *Horses are animals that my sister, who has pg, is very proud of ei.

In (225), the NP animals is able to bind the empty category appearing in sentence-final position within the matrix clause, but it is unable to bind the parasitic gap within the NRRC. This data suggest that the NRRC is not in the c-command domain of the NP head.

The data gathered on reconstruction and binding phenomena of NRRCs point towards the islandhood of NRRCs for binding and towards the impossibility of reconstruction of the head within the relative CP. Nonetheless, the wh-pronoun of NRRCs shows movement inside the relative CP.
3.4.2.5. **Extraposition**

There seems to be some disagreement in the literature as to whether NRRCs allow extraposition of the relative clause from its head. While Emonds (1979), Vergnaud (1974), Smits (1988), a.o., claim that a NRRC cannot be extraposed, de Vries (2002: 190, 196) provides examples from Dutch and English claiming that NRRCs can be, in fact, extraposed. The following are examples of extraposed NRRCs from Dutch (226a, taken from de Vries 2002: 196) and English (226b).

(226) a. *Gisteren heb ik mijn zuster bezocht, die blond haar heeft (zoals je weet).*

    yesterday have I my sister visited, who blond hair has (as you know)

b. *Mary sent me a book yesterday, which I have already finished reading.*

3.4.2.6. **Stacking**

Even the possibility for NRRCs to license stacking seems to yield some disagreement among linguists. According to Jackendoff (1979), McCawley (1988), Smits (1988), Platzack (1997), Alexiadou et al. (2000), a.o., NRRCs cannot stack. Lehmann (1984), Grosu and Landman (1998) and de Vries (2002) seem to hold a different view and provide examples. De Vries (2002: 197) suggests that, although difficult in English NRRCs, stacking is allowed. To illustrate this possibility, he reports the English example in (227a) and the Dutch example in (227b).

(227) a. *This man, who came to dinner late, about whom nobody knew anything...*

    b. *Joop, die op de derde rij zat, van wie we nu nog niet weten of hij wel een kaartje had, genoot van de voorstelling.*

    Joop, who on the third row sat, of whom we now yet not know if he indeed a ticket had, enjoyed the performance.

De Vries (2002) further suggests that a good strategy to improve the acceptability of stacked NRRCs in Dutch consists of employing different relative pronouns. He finally reports that stacking of a non-NP head in NRRCs is also allowed; in this case stacking is improved by using an overt coordinator. The stacked Dutch sentence in (228) is taken from de Vries (2002: 199) to illustrate such a possibility.

(228) *De Vries (2002)*
(228) *Joop is gevallen, wat heel zielig is, (en) wat hij voortaan moet vermijden.*

Joop has fallen, which very pitiful is, (and) which he from now on should avoid.

Grosu and Landman (1998: 126) seem to also share the assumption that NRRCs can stack. They provide a semantic reason for the licensing of stacking in NRRCs by claiming that “as Sells (1985) shows, appositive relative clauses contain an element that stands in a discourse anaphora relation to the NP they modify. Since more than one relative can stand in a discourse anaphora relation to the same NP, appositive relative clauses can stack too”.

If the claim that NRRCs can stack were on the right track, this would suggest, as for RRCs, that NRRCs are not just dependent clauses but also embedded in the matrix CP.

However, it is worth noticing that Grosu and Landman (1998) and de Vries (2002) apply to NRRCs a notion of stacking different from the one used for RRCs in §3.4.1.6. To illustrate, consider the following sentences where (229a) reproduces de Vries’ English example in (227a), and (229b) reproduces the stacked restrictive given in (192).

(229) a. *This man, who came to dinner late, about whom nobody knew anything...*

b. *The students who arrived late who have not handed in their paper yet must come to see me.*

The crucial difference between (229a) and (229b) is that while in the stacked restrictive in (229b) the head of the second relative CP is the NP *student* together with the first relative CP *who arrived late*, the head of both relative CPs in (229a) is only the NP *man*. Thus, the embedding of one relative CP inside the former is only realized in the restrictive relative clause.

3.4.2.7. Other properties

a. **Sentential adverbs**

Sentential adverbs of modification can appear inside NRRCs (Ogle 1974), as shown in (230).

(230) *The men, who have by the way lost their suitcase, should go to the police.*
I will here just comment on this data by saying that the presence of senten-
tial adverbs of modification within NRRCs semantically assimilates them
into parentheticals, i.e. into clauses expressing a side comment. As already
mentioned, this, together with the semantic interpretation of NRRCs, has
often lead researchers to consider NRRCs on a par with parentheticals
suggesting in some cases a similar derivation.

b. Generic NP

I would like to point out very briefly an interesting property of NRRCs. As
illustrated in the literature (see Bianchi 1999; Zhang 2001; de Vries 2002,
a.o.), NRRCs can either display only an external head, as in (231a), or an
external head and an NP internal to the relative CP and co-referent with the
external head, as in (231b).82

(231) a. Rome, ø which hosts some of the most beautiful Roman ruins, is
very enchanting.

   b. Rome, a city which hosts some of the most beautiful Roman ruins,
is very enchanting.

The latter possibility is never displayed by RRCs and could possibly shed
some light on the syntactic structure of NRRCs.

c. Order restrictions

As already pointed out in § 3.4.1.7, when combining with RRCs, NRRCs
always follow them.

d. Intonation contours

Some languages phonetically mark the non-restrictive interpretation of their
relative clauses enclosing them through specific intonation contours and
pauses. These prosodic means reach the goal of phonetically separating the
NRRC from other syntactic cues. Although intonation contours of this kind
do not constitute a universal strategy (they are rather language specific), they
strengthen the assumption gathered from the syntactic properties discussed
above that the syntactic relation holding between the head and a NRRC does
not involve constituency.
3.4.2.8. **Summing up**

The different semantic interpretations characterizing RRCs and NRRCs correspond to different syntactic properties displayed by the two semantic types. Some important conclusions reached on non-restrictive EHRCs are:

a. NRRCs require a specific head;
b. NRRCs do not fall under the c-command domain of the external determiner;
c. NRRCs are not transparent for binding;
d. the head of a NRRC does not show reconstruction effects, suggesting that it is base-generated in a position external to the relative clause;
e. NRRCs allow reconstruction of the material pied-piped by the head, thus suggesting a movement derivation.

The different syntactic properties displayed by RRCs and NRRCs in the domains of binding and reconstruction suggest the impossibility of assuming the same analysis for both semantic types. The diverging syntactic properties they display have rather led linguists to propose different derivational approaches that will be discussed in § 3.5.1.5.

3.4.3. **Maximalizing relative clauses: Grosu and Landman’s (1998) semantic scale**

I will here only briefly discuss a third semantic type of relative clause constructions, namely, what Grosu and Landman (1998) call *maximalizing relatives*.

Grosu and Landman (1998) propose to consider the different relative structures as ordered in a semantic scale. In the scale in (232), taken from Grosu and Landman (1998: 126) and adapted by de Vries (2002: 24), the semantic types are grouped following a main distinction, namely, whether the interpretation of the head, which they identify as sortal, is construed by the material internal to the relative CP or external to it, that is, whether the sortal is semantically interpreted CP-internally or externally.

<table>
<thead>
<tr>
<th>(232)</th>
<th>sortal-external</th>
<th>sortal-internal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple XPs – Appositives – Restrictives –</td>
<td>Maximalizers – Simple CPs</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>
It is worth pointing out that the interpretation of the sortal does not necessary coincide with its position in the structure; e.g. degree relative clauses (233) receiving a maximalizing interpretation are considered to belong to the sortal-internal group of relatives although their head occupies a position external to the relative CP.

(233) *Sarah called the children [that there were in the garden].*

The semantic scale proposed by Grosu and Landman (1998) starts from the leftward extreme occupied by simple XPs lacking a relative CP. As such, the only material present is that of the matrix clause. To their right they place relatives receiving an appositive reading. In these, the interpretation of the sortal is completely dependent on the material external to the relative CP, to which the appositive is related as a discourse anaphora (see § 3.4.2 for more details). Restrictive relatives occupy a central position in the paradigm. They display, in fact, a symmetric relation between the relative CP external and internal material through the intersection of the head with the relative CP. Appositives and restrictives are sortal-external; this means that the semantic content of the head cannot be retrieved solely by the material internal to the relative CP. The semantic group defined as maximalizers occupies the position within the semantic scale of the sortal-internal relatives. In this semantic group, which, according to Grosu and Landman, includes many syntactic typologies such as degree relative clauses, some IHRCs, correlatives and (standard) free relatives, the main contribution to the interpretation of the construction comes from the material internal to the relative CP. Whatever material is external to the relative CP is either interpreted internally or derived from the semantic interpretation of the relative CP. Finally, at the right extreme of the scale are bare CPs. Clearly, no contribution comes from other material external to the CP which is, this time, not present. Grosu and Landman suggest that this is a case of a particular kind of free relative, namely irrealis free relatives.

According to Grosu and Landman, the sortal-internal group of maximalizers shares an operation of maximalization that I shall briefly illustrate here. The reader is referred to Grosu and Landman’s (1998) analysis for further semantic details and for discussion on the maximalizing interpretation of correlatives, IHRCs and free relatives.

To illustrate, I will concisely discuss a kind of maximalizing relative, namely, degree relative clauses.

Consider the sentences in (234) below.
Three semantic interpretations of relative clauses

(234) a. Johanna took the bottles that there were in the box.
     b. Johanna took the bottles that were in the box.

Although sharing the same syntactic typology (they are EHRCs), the semantic interpretation the two sentences receive differs in one respect. Sentence (234a) means that Johanna took all the bottles contained in the box and no other bottle is present in the domain of discourse, while sentence (234b) entails the presence of many bottles, some inside the box and some outside it, thus restricting the bottles Johanna took to those contained inside the box. Sentence (234a) receives an amount reading, while sentence (234b) receives a restrictive interpretation. Grosu and Landman suggest that while the relative CP of RRCs denotes a set of individuals intersecting with another set of individuals, represented by the head, the relative CP of degree relatives denotes a set of degree and as such it cannot intersect with a set of individuals (such intersection is defined as ‘senseless’ by Grosu and Landman 1998: 130). Thus the relative CP of degree relatives does not combine with its head through intersection, as is the case in RRCs. To exemplify, the sentence in (234a) can receive a representation as in (235).

(235) Johanna took the bottles that there were d many bottles in the box.

The sentence in (235) can be explained by saying that the head of a degree relative is interpreted inside the relative CP (as its copy inside the relative CP shows) where it contains a null indefinite determiner denoting a quantity or amount similar to much/many. The head thus acts as a restriction to the degree variable (see Carlson 1977; Heim 1982; Grosu and Landman 1998).

The degree expression d many bottles thus exemplifies two intuitions: the presence of a degree variable inside the relative CP bound to the relative pronoun or operator; and the interpretation of the head of degree relatives inside the relative CP. Although the discussion of Carlson (1977), Heim (1982) and Grosu and Landman (1998) concentrates on degree relatives of the kind in (234a), other structures can receive a degree reading, such as those in (236).

(236) a. Carlo has withdrawn the money that is required for the race.
     b. She is not allowed to smoke the few cigarettes she has taken with her.

If we consider the sentence in (234a) we observe that degree relatives are instances of sortal-internal structures since the interpretation of the sortal
bottles is derived from the content of the complex expression contained in the relative CP correspondent to \textit{d many bottles}.

By applying the operation of maximalization to degree relatives, Grosu and Landman assume a degree function that keeps track of the plural individual, i.e. of the sum of individuals denoted by the object measured. By looking at the degree relative in (234) I will try to illustrate the structural degree function Grosu and Landman introduce to map degree relatives.

The degree function maps the plural individual \textit{bottles} into a triple consisting of its cardinality, i.e. the number composing the sortal; the sortal predicate, \textit{in the box}; and the plural individual \textit{bottles}, thus leading to the triple in (237).

\begin{equation}
\langle |x|, P, x \rangle
\end{equation}

In (237) the first element denotes the cardinality of the plural individual and the second element represents the sortal predicate, while the third element denotes the plural individual itself. An operation of maximalization then takes place, selecting the singleton set containing the maximal degree from a set of degree triples. So in (234a), if three bottles are in the box, the numerical set includes the numbers one and two but the sentence is true only if the number of bottles Johanna took is equal to its maximum, i.e. three. Thus the operation of maximalization creates a unique, singleton set, the one denoting the maximal plural individual. Grosu and Landman suggest that the requirement for the degree relative to be selected by an external strong determiner follows from the operation of maximalization; specifically, “[..] the CP can only combine with determiners that \textit{preserve} the internal CP information – and in particular, \textit{max} – into the generalized quantifier meaning” (Grosu and Landman 1998: 145). Only a definite and universal determiner can select the unique singleton set deriving from the application of maximalization. The impossibility of stacking in degree relatives would also follow from the operation of maximalization of the relative CP. According to Grosu and Landman, the unique singleton set created by the operation of maximalization cannot intersect with another singleton set, as is the case with stacking in restrictives which do not denote singleton sets. In degree relatives, such intersection would, on the other hand, lead to identity or to a vacuous result. A further reason adduced to the impossibility of stacking is the impossibility for the sortal to receive a different interpretation once a first operation of maximalization has applied to it.

Carlson (1977), Heim (1982) and Grosu and Landman (1998) find three diagnostics for relative clauses displaying a maximalizing interpretation,
namely: the requirement to be selected by an external strong determiner, the impossibility for the relative CP to display a \(wh\)-relative pronoun, and the impossibility of stacking.

An apparent contradiction arises when considering that not all syntactic types are subject to the constraint on avoiding \(wh\)-pronouns. As a matter of fact, IHRCs, correlatives and FRs do employ \(wh\)-elements. This fact appears to be in contrast with the prediction made by Carlson (1977), Heim (1982) and Grosu and Landman (1998). The operation of maximalizing has also been recognized as being at work in constructions of a different nature such as comparatives (von Stechow 1984), plural anaphora (Evans 1980; Kadmon 1987) and questions (Groenendijk and Stokhof 1982).

3.4.4. Summing up the syntactic properties exhibited by restrictive and non-restrictive relative clauses

The table in (238) sums up the relevant properties displayed by restrictive and non-restrictive relative clauses.

(238)

<table>
<thead>
<tr>
<th>Properties</th>
<th>Restrictive relatives</th>
<th>Non-restrictive relatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature specification of the head</td>
<td>- specific</td>
<td>+ specific</td>
</tr>
<tr>
<td>Proper name head</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Pronominal head</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Quantified head</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Any category head</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Material inside the relative CP</td>
<td>(Wh-)/Compl/nothing</td>
<td>Compl/(wh)-</td>
</tr>
<tr>
<td>In the scope of the matrix CP</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Reconstruction inside the relative CP</td>
<td>Yes</td>
<td>Only the (wh)-constituent</td>
</tr>
<tr>
<td>Transparent for binding relations</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Extraposition</td>
<td>Yes</td>
<td>Yes?</td>
</tr>
<tr>
<td>Stacking</td>
<td>Yes</td>
<td>Yes?</td>
</tr>
<tr>
<td>Sentential adverbs</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Be first when more than one</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Heavy pied-piping</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
This concludes the description of the semantic interpretation of relative constructions. In the following section, I will illustrate the derivation proposed by the raising analysis for the syntactic and semantic types illustrated above.

### 3.5. The syntactic representation of relative constructions

So far, the characterization of the relativization strategies introduced has avoided any syntactic representation. Within the generative tradition, different approaches have been proposed to derive relative constructions (see Bianchi 2002 for a detailed historical survey). The D-complement analysis (Chomsky 1965; Smith 1969; Stockwell, Schachter and Partee [1973] 1976; Kayne 1994) is the first generative hypothesis on the syntax of relative clauses. Its main intuition is that the relative CP is selected as the complement of a D head occupying the specifier position of the head of the relative clause. The expected linear order is then obtained by obligatorily extraposing the relative CP to the right. The matching analysis (Lees 1960, 1961; Chomsky 1965; Sauerland 1998, 2003; and Citko 2001, a.o.) represents the first attempt to account for some puzzling phenomena observed within relative constructions, such as the connectivity problem referring to the double and distinct role played by the head of a relative clause within the matrix CP and relative CP. The matching analysis assumes that a representation of the external head is also present within the relative CP in the form of an NP co-referential to the external NP. The two co-referential NPs are merged in the position where they are interpreted inside their own CP. Moreover, the relative CP internal NP moves from its base position to Spec, CP where it is phonetically deleted under identity with the external head in a local relation and replaced by the appropriate relative pronoun that, under certain constraints, may be optionally deleted.

The core assumption of the adjunct analysis, widely assumed starting from Ross (1967), Montague (1974), Partee (1975), Chomsky (1977) and Jackendoff (1977), is that the head NP originates outside the relative CP, this latter being a right adjunct to the NP. The relative CP involves A’ movement of a relative operator, which may be either overt or covert displaying a null operator Op in Spec, CP. In this respect, the wh-pronoun does not substitute a copy of the head NP as assumed by the matching analysis; it is rather interpreted as the head itself through a predicative relation.

An alternative view to the adjunct analysis is the Nom-S analysis (Carlson 1977; Fabb 1990; Platzack 1997; Lipták 1998; Meinunger 2000) in which the
relation between the external NP head and the relative CP is viewed in terms of sisterhood. The relative CP is not an adjunct to the external NP; instead, it is selected by the NP as its internal argument. The wh-relative pronoun or, alternatively, an empty operator, moves to Spec, CP by A’-movement, and it is co-indexed with the head NP.

A more recent proposal is the raising analysis. Its assumptions will be illustrated and discussed in § 3.5.1 and its proposed derivation will be applied to headed relative clauses.

A derivation consistent with the raising analysis will also be proposed for free relatives, while correlative clauses will be analyzed in light of two competing proposals, namely Dayal’s (1991) and Bhatt’s (2003). Finally, in § 3.5.1.5. the raising hypothesis is applied to the semantic types of restrictive and non-restrictive relatives in an attempt to provide a structural representation capturing their syntactic properties.

3.5.1. The raising analysis

Reviving Vergnaud’s (1974) proposal, an alternative approach to relative constructions is elaborated within the new theoretical acquisitions characterizing the late 1980s and the 1990s and traceable in at least three main theoretical proposals. The rise of the DP hypothesis (Abney 1987) allows a new representation of the nominal domain. Following Abney, determiners do not occupy the specifier position of the nominal phrase NP, but head their own functional projection, namely DP (Determiner Phrase), taking the lexical NP projection as their complement. A further proposal, constituting a turning point in generative studies, is Chomsky’s (1993) minimalist paper. Within the vast minimalist program, the copy theory of traces offers a strong theoretical basis for the new approach to relative clauses. Under this hypothesis, a moved element targeting a higher position leaves in the intermediate chain links not empty traces (as previously assumed within the Principles and Parameters framework), but exact copies of itself that, although failing to be phonologically spelled out, remain available in the LF branch of the derivation. A third proposal, central for the raising analysis to relative clauses, is Kayne’s (1994) Antisymmetry Theory. Kayne’s hypothesis prescribes a rigid mapping of the hierarchical relations holding between the non-terminal nodes of a tree and the linear order of the terminal symbols they dominate (known as the Linear Correspondence Axiom, LCA83). More specifically, some constraints on phrase structure posed by the antisymmetry theory are relevant for the new approach to relative clauses. A first constraint is
a strict binary branching of the X-bar schema. Each maximal projection is
restricted to only one adjunct and specifier position⁸⁴ and one complement.
Moreover, the asymmetric c-command between the non-terminal nodes of
the tree determines linear precedence yielding the universal order specifier-
head-complement. This last constraint leads to the impossibility of right-
ward adjunction. Within the antisymmetric framework, the standard adjunct
analysis (see Ross 1967; Montague 1974; Partee 1975; Chomsky 1977;
Jackendoff 1977, a.o.) to relative constructions appears inadequate. The rela-
tive CP cannot, in fact, be right adjoined to the head NP. Given that an XP
must adjoin to a maximal projection (assumed to be NP), the only possibility
of maintaining an adjunct derivation within antisymmetric frameworks is
for the relative CP to precede the NP and further move the segment N to the
left of the relative CP. This, however, is not an available operation within
the antisymmetric framework since segments are unable to c-command their
trace.⁸⁵ The adjunct analysis is therefore rejected and a new proposal is laid.
Kayne (1994) revives the approach to relative structures originally elabo-
rated by Brame (1968), Schachter (1973), and Vergnaud (1974), combining
it with Smith’s (1969) D-complement hypothesis. Kayne’s raising analysis is
assumed by Bianchi (1999), de Vries (1996, 2002), Alexiadou et al. (2000:
intro), Zwart (2000), a.o. I now turn to the theoretical assumptions laid by
the raising hypothesis.

Since post-nominal headed relative clauses cannot be adjoined to a
maximal projection, according to the LCA, they must occupy a comple-
ment position. It remains to be ascertained what kind of maximal projec-
tion selects the relative CP as its complement. Since relative CPs are not
theta-marked, Kayne assumes that they must be the complement of a func-
tional head. The determiner head is a good candidate. One first assumption
is, therefore, that relative CPs are complements of a D head (Kayne 1994:
87) which, following Bianchi (1999: 39), will be referred to as the external
determiner of the relative structure.

Such a structural relation is able to explain the data illustrated in § 3.4.1.3,
namely, the fact that the relative CP falls under the c-command domain of
the external D head, a fact that the adjunct analysis fails to capture. Further
support for the D selecting the relative CP comes from the DP hypothesis
(Abney 1987) in which the determiner is a functional head displaying a spec-
ifier and a complement position. Evidence for the possibility of a D head
selecting a category different from NP is provided by sentences like (239)
where a nominal specifier, in the form of a possessive, occurs with a verb
phrase, or like (240), where a determiner selects a VP. Abney (1987: 21–25)
observer that in (239) D assigns genitive case to its specifier and selects a VP
as its complement. In (240), D simply selects a maximal verbal projection as its complement.

(239)  
\begin{align*}
\text{a. } & \text{Sarah’s breaking a vow.} \\
& [DP \text{Sarah’s } [DP D° [VP breaking a vow]]]. \\
\text{b. } & \text{The consuming of the fire.} \\
& [DP [DP The [VP consuming of the fire]]].
\end{align*}

Bianchi (1999: 39) reports the possibility that a D head can select even full CPs, as shown in the following examples she cites.

(241)  
\begin{align*}
\text{a. } & \text{Me stenohori to oti efije.} \\
& \text{me makes sorry the that he left} \\
& \text{‘I regret that he left.’} \\
& \text{(Roussou 1992)} \\
\text{b. } & \text{No me gusta el que tu actúes así.} \\
& \text{not to-me please the that you behave like that} \\
& \text{‘I don’t like your behaving like that.’} \\
& \text{(Donati 1994: 23)}
\end{align*}

Furthermore, this assumption is able to capture the nominal distribution of the relative clause. By selecting the relative CP, in fact, the external determiner nominalizes it, endowing it with the required nominal status.

The external determiner is believed to originate in an external CP position. Evidence for the head-complement relation between D and the relative CP and for the D head being generated in a CP-external position is provided by Bianchi (1999: ch. II).\textsuperscript{86} The structure in (242) is reminiscent of the Determiner-S analysis proposed by Stockwell, Schachter and Partee ([1973] 1976).

\begin{center}
\begin{tikzpicture}
\node (DP) at (0,0) {DP};
\node (Dp) at (-1,-1) {D°};
\node (Dp_p) at (1,-1) {CP\textsubscript{rel}};
\node (Dp_p_p) at (0,-2) {\text{\textbullet\textbullet\textbullet\textbullet\textbullet}};
\path (DP) -- (Dp_p_p);
\path (Dp) -- (Dp_p);
\path (Dp_p) -- (Dp_p_p);
\end{tikzpicture}
\end{center}
Moreover, a crucial assumption within Kayne’s raising analysis regards the derivation of the head that is assumed to originate inside the relative CP. More specifically, the NP head originates within the IP, which will be henceforth called the relative IP, in the position where it is interpreted. In post-nominal headed relatives, the head moves from a relative IP internal position to the specifier of the relative CP. Kayne further assumes that in wh-relatives, the wh-relative pronoun is the original determiner of the head NP. Under this assumption, the relative DP, composed of the wh-relative determiner and the head, originates inside the relative IP to successively raise to the specifier of the relative CP. The raising of the DP category containing the head is assumed to be triggered by a Relative Criterion equal to Rizzi’s (1991) Wh-Criterion. By raising to Spec, CP, the relative DP endowed with a [+rel] feature is able to check it against the same feature in C through Spec-Head agreement. From Spec, CP, the head is further raised to the specifier of the relative D in a position that asymmetrically c-commands the relative determiner and is asymmetrically c-commanded by the external determiner. The superficial linear order of the elements is thus obtained. The derivation of the sentence in (243a) is illustrated in (243b) representing the structure of the relative clause before any movement operations, and in (243c) representing its structure after movement operations have taken place.

(243) a. The woman whom John likes.

b. 
```
       DP
          |
         D'
         |
       D°  CP
       |
  The   |
     C'
     |
   C°   IP
   |
John likes [DPwhom woman]`
The syntactic representation of relative constructions

The structure in (243c) is slightly modified when the wh-determiner pied-pipes a preposition. In this case, the relative DP originates as a PP inside the relative IP and raises to Spec, CP. Raising of the PP is possible since the pied-piped PP is assumed to inherit the feature [+rel] from the relative D it dominates through percolation of the feature. As in (243c), the head strands the relative determiner in D, but instead of raising to Spec, DP, it targets the specifier of the prepositional phrase, as illustrated in (244). The reason for the higher movement of the head in this context will be soon made clear.

(244)
Kayne assumes two different constituent structures for *wh*- and non-*wh*-relative clauses. According to his assumption, relative structures displaying a *wh*-relative element involve movement of a DP headed by the *wh*-element and taking the head as its complement, while relative structures that do not display a *wh*-element involve movement of a bare NP. De Vries (1996) and Borsley (1997) criticize Kayne’s proposal by arguing that there is evidence for the head to behave as a DP even when no *wh*-element is phonetically realized. Bianchi (1999, 2000) and de Vries (2002) argue for the presence of a relative DP in both kinds of relatives, reporting the difference to be a matter of phonetic deletion of the relative D head in non-*wh*-relative clauses. The difference between the two proposals only concerns the way in which the relative D is phonologically deleted in non-*wh*-relative structures. The derivation of a non-*wh*-relative as proposed by Bianchi is sketched in (245) below.

Bianchi and de Vries’s proposal leads to a unifying derivation of *wh*-, non-*wh*- and zero\(^88\) relative clauses. The three structures involve movement of a DP from a relative internal-IP to a relative external-IP position. *Wh*- relatives involve a filled D head; non-*wh*-relatives, or *that*-relatives, involve the deletion of the *wh*-D head\(^89\) and the spell out of the relative complementizer; zero relatives are derived by the deletion of both the *wh*-D head and the relative complementizer.\(^90\)

While in the adjunct analysis the gap inside the relative IP was semantically bound by the external head through a relation of predication, in the raising analysis the gap is the lowest link of an A’ movement chain containing a phonologically deleted copy of the moved head. In the raising analysis, the relation between the gap and the head is thus syntactic binding.
Borsley moves the objection that, in Kayne’s analysis, it is not clear what triggers the movement of the head NP to a position adjacent to the external D. In Bianchi’s (2000: 127–128) reply to Borsley, it is claimed that the raising of the head is triggered by the need to check the external D’s nominal feature. She proposes that the external D is a nominal determiner bearing a strong N categorial feature which remains unchecked when selecting the relative CP. The strong N-feature triggers the raising of the head to a position adjacent to the external D where no other governor can intervene between the two categories; thus, relativized minimality is respected. From this position, the head falls in the minimal domain of the external D entering in a proper checking configuration with ‘it’ (as defined in Chomsky 1995: 178). In Zwart (2000) the raising of the head is instead triggered by semantic reasons: after stranding the relative determiner in Spec, CP, the head moves higher to receive a restriction interpretation from the external D. Both analyses provide an explanation for the raising of the head to the highest specifier position adjacent to the external determiner, as in (243c) and (244) above.

Let’s now try to derive the same evidence provided to support the adjunct analysis from the assumptions laid by the raising analysis. The main arguments supporting the adjunct analysis are twofold: namely, the islandhood of the relative CP, and the agreement relation between the head and the *wh*-operator. The strong islandhood displayed by relative clauses is explained by Kayne as a typical property of DPs, as stated in both the Complex NP Constraint (CNPC) and the Complex Noun Phrase Islands. Given that the relative CP is endowed with nominal features, its islandhood follows straightforwardly. The agreement relation between the head NP and the *wh*-relative operator, derived within the adjunct analysis from the predicative relation holding between the head and the relative CP, receives a straightforward account within the raising analysis where the *wh*-operator is the original determiner of the head NP, both generated in a head-complement position inside the relative IP.

As for case agreement between the head and the external D, Bianchi (1999, 2000) follows Giusti’s (1993) assumption that being Case-marked is a property of D heads. Furthermore, she suggests that N agrees with the D that governs it or in whose minimal domain it is included. Since in the representation given in (243c) the head NP is in the minimal domain of the external determiner, its morphological Case is copied and spelled out into the head.

Moreover, Bianchi (1999, 2000, 2002) presents several facts receiving a straightforward explanation under the raising analysis but hard to derive within the adjunct analysis. Some of these are the data on reconstruction, binding and scope phenomena displayed by the head of restrictive relative
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clauses and illustrated in § 3.4.1. Such data are expected under the raising analysis in which the head originates inside the relative CP thus leaving behind copies of the moved constituent. On the other hand, under the adjunct analysis it would appear mysterious how the head could be reconstructed in an internal position, how it could be subject to the binding conditions holding within the relative CP, or how it could be in the scope of elements occurring within the relative clause if it is assumed to originate in a CP-external position. The raising analysis thus proves to be superior to previous analyses of relative structures in many respects:

a. There is no more need to postulate the category of the null operator.
b. Its assumptions are consistent with Chomsky’s (1993) copy theory of traces. The facts on reconstruction and binding show, in fact, that the copies of the moved head are present in the movement chain within the relative clause.
c. It permits the solving of the long-debated connectivity problem. As already mentioned, this refers to the double role carried out by the head in each CP: the NP is a constituent of the main clause and the relative clause, thus satisfying the selectional requirements of both clauses. Within the raising analysis, the double role carried out by the head follows from the fact that, during the derivation, the NP occupies a position in each clause.
d. It is able to provide a unifying derivation for two syntactic typologies, namely IHRCs and EHRCs, the analysis of which will be undertaken in § 3.5.1.1. and § 3.5.1.2. respectively.

Although providing a satisfactory explanation to the derivation proposed, supported by robust evidence, some open issues remain to be discussed. Among these, I will succinctly illustrate a relevant topic pointed out in Bhatt (2005a). Bhatt observes that the structure in (246) outlines a major problem for the raising analysis.

(246) The woman [whom John likes] and [whom I meet every day].

Sentences like (246) suggest that the head does not form a constituent with the wh-phrase whom John likes, as the coordination facts point out. This contrasts with Kayne’s proposal represented in (243c) which is not able to account for the facts in (246). Bhatt (2005a: 16) suggests a representation of the sentence in (246) where the raised NP moves outside the relative CP projecting its categorial status in the structure, shown in (247).
A major problem posed by Bhatt’s proposed structure is, however, related to the ban against projecting movement. In Chomsky (1995: 4.4.2) and Chomsky (1998: 51) it is stated in the derivational mechanism that in case of movement it is always the target that projects, not the moved element. Bhatt suggests two ways of overcoming the problem. One is to question the latter assumption and postulate the possibility of projecting movement for relative clauses. Iatridou, Anagnostopoulou and Izvorski (2001) and Donati (2000, 2006) show that free relatives whose *wh*-element is nominal are able to turn the projection into a nominal one. They suggest that the possibility of projecting movement may be determined by the selectional restrictions of the higher head. If no restriction is placed on the moved category (e.g. the selection of a *wh*-question), this latter may be able to project its category to the moved phrase. A second way out of the dilemma is offered by Bianchi96 (2000). She proposes the structure in (248) is able to derive the non-constituency of the head and the *wh*-phrase by placing them in different structural positions.
She proposes that the relative DP first targets the specifier of a functional head X (whose syntactic nature she does not specify) below CP. The head then strands the relative D targeting the specifier of CP thus landing in a position adjacent to the external determiner. Bhatt observes that Bianchi’s structure provides a right structural insight in order to explain the facts in (246), but not the right word order when facing the data of languages like Norwegian (249a) and Hindi (249b) where the complementizer seems to follow the wh-determiner.

(249) a. Det huset der som John bor.
    the house Rel SOM John lives
    ‘The house where John lives.’
    (Swedish, from Åfarli 1994: 88)

b. vo tasviir jo ki Bill-ko pasand hai.
    Dem picture Rel Comp Bill-Dat like Prs
    ‘That book which Bill likes.’
    (Hindi, from Bhatt 2005a: 21)

Bhatt, therefore, revisits Bianchi’s structure, proposing the tree in (250).

(250)

The problem observed by Bhatt has not reached a unifying solution but it has opened the topic to further discussion.

A recent proposal trying to solve the remaining issues under the raising analysis has been advanced by Donati and Cecchetto (2011). They start
with a specific approach to phrase structure theory contained in the Probing Algorithm, stating that the label of a syntactic object \{α, β\} is the feature(s) which act(s) as a Probe of the merging operation creating \{α, β\} (Cecchetto and Donati 2010). The core proposal is that a lexical item can act as a Probe by virtue of its Edge Feature forcing it to (externally or internally) merge with other material thus relabelling the structure with which it merges through head movement. Donati and Cecchetto (2011) assume a revised version of the raising analysis by which the determiner preceding the relative CP is externally merged and the NP head raises from the relative CP to a position next to the external determiner. They propose that by moving through internal Merge, by virtue of being a lexical item, the head NP relabels the structure, endowing it with the nominal features necessary for the selectional requirements of the external D head. Their proposal is able to account for what triggers movement of the relative clause head, to overcome Borsley’s criticism of order in *wh*-relatives, and to derive the right label to the clause selected by the external determiner.

In the following sections, I illustrate the derivations proposed for the different syntactic and semantic types described above, testing, where possible, the empirical validity of the raising hypothesis. Before doing so, a clarification on the terminology adopted in the following sections is necessary. In order to remain neutral on the landing site of the raised head (whether it is internal or external to the relative CP), when referring to the position occupied by it within the relative construction, I will adopt the distinction between relative IP internal and external position rather than the terminology previously adopted of relative CP internal or external position.

### 3.5.1.1. Internally headed relative clauses

IHRCs constitute strong evidence in support of the raising analysis. As illustrated in § 3.3.1 and repeated here in example (251), in this type of relative the head (*thep*) is spelled out in a position internal to the relative IP. Furthermore, the relative CP is usually selected by an external determiner (*the*).

(251) [Peemε *thep* khii-pa] *the*nee yin.


‘The book that Peem carried is mine.’

(Tibetan, from Keenan 1985)
The adjunct analysis would hardly explain the possibility that the head can occupy a relative IP internal position. The adjunct analysis would have to treat the structure of IHRCs as completely unrelated to that of EHRCs. Such an approach would turn out to be very complicated and not very minimal for languages displaying both types of relatives, like Japanese (252).

(252) a. Yoko-wa [Taro-ga sara-no ue-ni keeki-o oita]-no-o tabeta.
    Yoko-Top Taro-Nom plate-Gen on-Loc cake-Acc put NM-Acc ate
    ‘Yoko ate a piece of cake which Taro put on a plate.’

    Yoko-Top Taro-nom plate-Gen on-Loc put cake-Acc ate
    ‘Yoko ate a piece of cake which Taro put on a plate.’

(Shimoyama 1999)

The raising analysis, on the other hand, is not only able to account for the structure in (252), but it also offers an analysis of EHRCs and IHRCs as two instances of the same phenomenon. Let’s first review Kayne’s (1994) analysis of IHRCs and then a later approach which, although moving within the raising hypothesis, differs from Kayne’s in that it does not strictly follow the constraints posed by the antisymmetry theory, specifically, the constraint derived by the LCA of a linear order fixed as specifier-head-complement.

Within the antisymmetry hypothesis proposed by Kayne (1994), the LCA prescribes a strict X-bar structure yielding the universal order specifier-head-complement. Kayne assumes the same D-CP order for EHRCs and IHRCs as well as the same overt movement of the head from the relative IP internal position to Spec, CP. However, in order to derive the linear order displayed by IHRCs where the relative CP (surfacing as the complement) precedes the external determiner (surfacing as the head), Kayne is forced to assume the movement of the relative IP to the specifier of the external determiner. Assuming Chomsky’s (1993) copy theory of traces, he then derives the spell out of the IP internal copy of the head and the null phonetic realization of the head raised in Spec, CP by the condition on copy-deletion as stated in (253).
A given chain link $c_k$ can license PF deletion of another chain link $c_l$ only if $c_l$ does not c-command $c_k$. (Alexiadou et al. 2000: 27)

The deletion of the head in Spec, CP is thus made available by the raising of the relative IP in a position where the IP internal copy c-commands the moved occurrence of the head, thus yielding the PF representation of the IP internal trace. On the other hand, the condition in (253) prevents the deletion of the head in Spec, CP in post-nominal relative clauses where its trace within the IP does not c-command it. The structure in (254) represents Kayne’s derivation for IHRCs.

A different analysis to IHRCs developed within the raising hypothesis does not follow the strict constraints imposed by the LCA, assuming, instead, the linear order of constituents to be open to parametric variation. Within this assumption, languages are divided into head-initial and head-final. The former display an order specifier-head-complement, and the latter display the order specifier-complement-head. In IHRCs, where the relative CP precedes the determiner head selecting it as its complement, the structure proposed corresponds to that of a head-final language. The relative CP/IP superficially occupies the position where it originates, a complement position, and no raising occurs, as in (255).
If we compare the structure in (255) with that in (243b), it appears clear that IHRCs realize the structure of underlying post-nominal relative clauses; that is, what the raising analysis believes to be the base structure of headed relative clauses prior to any movement operation has taken place. This analysis provides a more satisfactory explanation deriving EHRCs and IHRCs from a movement parameter. Thus relative structures are assimilated into wh-interrogatives’ overt/covert movement (Huang 1982).

3.5.1.2. Externally headed relative clauses

As discussed in § 3.3.2, EHRCs display the head in a relative IP external position. The relative IP can linearly follow the head, as is the case of post-nominal relative clauses, or precede it, as in pre-nominal relative clauses. As for post-nominal relative clauses, the analysis suggested within the raising hypothesis is the one sketched in § 3.5.1.

As for pre-nominal relative clauses, Kayne follows a derivation similar to that suggested for IHRCs. In both situations, in fact, a complement (the relative IP) precedes a head (the external determiner in IHRCs, the external determiner and the NP head in externally headed pre-nominal relative clauses). Kayne assumes for pre-nominal relatives the same raising structure suggested for post-nominal relatives. Namely, the head raises to Spec, CP from its relative IP-internal position and the superficial linear order is then obtained by further raising the relative IP to the specifier of the external determiner. This is represented by (256).

(256) a. [[Taro-ga sara-no ue-ni ø oita] keeki].
   Taro-Nom plate-Gen on-oc put cake
   ‘A piece of cake which Taro put on a plate.’
   (extracted from Shimoyama 1999)
It is not clear, however, why the deletion of the head in Spec, CP is not performed in this case, as it is in Kayne’s derivation of IHRCs. According to the condition stated in (253), in fact, this structure qualifies for the deletion of the occurrence of the head in Spec, CP.

An analysis of EHRCs which does not follow the constraint imposed by the LCA, considers post-nominal and pre-nominal relative clauses as the expected surface linear order of, respectively, head-initial and head-final languages. In head-initial languages the relative IP follows the D head selecting it, as well as the raised modified NP, while in head-final languages the relative IP precedes the external D head and the modified NP. Within this approach, the structure proposed for pre-nominal relatives is the one sketched in (257).99

(257)
Here, again, the problem of the landing site of the raised head is still an open issue. The structure in (257) provides, on the other hand, fewer available landing sites, banning all specifier positions occurring at the left of the heads. A possibility would be to provide the tree with an NP projection occurring between the external D° head and the C° head, as proposed by Bhatt for post-nominal relative clauses. Again, the problem we face regards the controversial projecting movement of the NP (see example 250).

A possible alternative would be to assume that, in pre-nominal EHRCs, the NP raises and incorporates to the external D position in a similar way to how Bianchi assumes the abstract incorporation of the relative D into the external D. The incorporation of the NP pre-nominal EHRC to the external D may be connected to Kayne’s observation that the relative D of pre-nominal RCs is always empty. This derivation might, however, be judged as counter-cyclic, or else very close to de Vries’ s derivation of RCs which always assumes the constituent structure [N+D].

3.5.1.3. Free relatives

Free relatives have long attracted the interest of linguists who dedicated a vast literature to this relativization strategy. Free relatives exhibit evident syntactic differences with respect to headed relatives: above all, the lack of an overtly expressed head, the use of different relative pronouns, and matching effects. Such differences seem to call for an independent structural representation. On the other hand, their nominal distribution and their strong islandhood assimilate these structures to headed relatives. Both kinds of strategies prove to be (complex) nominal structures embedded in a matrix IP.

Traditionally, the proposals converge on two competing hypotheses both moving within the adjunct analysis: the Head Hypothesis advocated by Bresnan and Grimshaw (1978) and later by Larson (1987), suggesting that the head NP position is filled by the wh-relative determiner base-generated in this position rather than originating inside the relative CP; and an alternative proposal, the Comp Hypothesis advanced by Groos and van Riemsdijk (1981), Harbert (1983), Suñer (1983, 1984), a.o., assuming that free relatives lack a phonologically overt head.

Both analyses fail however to provide a satisfactory explanation for the asymmetries observed in free relatives.

Within the raising hypothesis, there is a new approach to the syntax of free relatives. More specifically, it is possible to extend the analysis of headed
relatives to free relatives, assuming the latter to be likewise selected by an external D head (Kayne 1994). Within this approach, the proposal advanced in Donati (2000, 2006) seems to move in the right direction, providing a straightforward account for the asymmetries exhibited by free relatives. The main assumption of this proposal is represented by the movement of the *wh*-element to a head position. In Donati (2000) this head is C, while in Donati (2006) it is the relative CP external D position. Both assumptions are able to derive the same desirable effects. Let’s see in detail how the proposal works. Donati (2006) assigns to the free relative in (258) the abstract structure in (259).

(258) *John bought what I wanted.*

(259) *John bought*

\[
\begin{array}{c}
\text{DP} \\
\text{D} \\
\text{what} \\
\text{CP} \\
\text{C'} \\
\text{IP} \\
\text{I wanted [DP what]} \\
\end{array}
\]

In (259), the *wh*-element, a D under the raising hypothesis, originates in its base-position inside the relative IP and moves as a head with a long head-to-head movement to the external D position. By doing so, besides checking its *wh*-feature on C, it endows the relative CP with the D-features required for its interpretation.

Such an approach is thus able to derive the following:

a. the nominal status of FRs and their strong islandhood. Thus, like headed relatives, they are complex nominal clauses (a DP embedding a CP), the only difference being that in headed relatives the D is merged while in (259) it is moved.

b. the matching effects displayed by the *wh*-element, which follow straightforwardly from the abstract structure in (259). *What* carries out a double role as the internal argument of the relative verb *wanted* and as the internal argument of the matrix verb *bought*. The FR will be ac-
ceptable only if Case and category requirements of both clauses match.

c. anti pied-piping effects. By assuming that the \textit{wh}-element moves as a head, it follows that no pied-piping is possible. This contrasts both with headed relatives and with \textit{wh}-interrogatives where the \textit{wh}-element moves as a phrase targeting not a head, but the specifier of CP.

d. the impossibility of realizing the complementizer. This fact seems to receive an explanation only under the proposal suggested in Donati (2000) where the \textit{wh}-element moves to the C head, thus endowing the relative CP with nominal-like features. A further argument seems to support the analysis in (259) against proposals placing the \textit{wh}-determiner in Spec, CP. In languages displaying pre-nominal relative clauses (traditionally recognized as head-final languages), the \textit{wh}-element of a FR surfaces at the right periphery of the relative CP. This is a position unequivocally identifiable with a head position (specifiers being located invariably on the left), i.e. either C or the external D.

FRs may also appear as APs, AdvPs, PPs modifiers, as in the examples in (138) reproduced here as (260).

(260) a. \textit{Sarah is [however beautiful her mother was]}.
   b. \textit{Sarah writes [however neatly her teacher does]}.
   c. \textit{Sarah has breakfast [where her brother usually does]}.
   d. \textit{[Whoever you invite], I won’t come}.

Bresnan and Grimshaw (1978) interpret these data by claiming that FRs are pluri-categorial, a view opposed by Larson (1987) who argues that FRs are only of the nominal category. He interprets the data in (260a) and (260b) as (free) comparatives. Grosu (1996) supports the pluri-categorial status of FRs advocated by Bresnan and Grimshaw, arguing against an analysis of (260a) and (260b) as comparatives.

This matter is not discussed here further as it is of minimal interest for the present work. I will only add a remark by Caponigro (2002: 7) suggesting that the DP status of FRs is by no means threatened by FRs acting as PP modifiers, as in the example in (261) provided by Caponigro, where the relative determiners \textit{when} and \textit{where} occur in places where only PPs are admitted.

(261) a. \textit{He was born \textit{[FR where I grew up]}}.
   a’. \textit{He was born \textit{[PP in my hometown]/*[DP my hometown]}}.
b. *I went to Paris \([_{FR \text{ when I was young}}]\).

b’. *I went to Paris \([_{PP \text{ in my childhood}}/^{*}_{DP \text{ my childhood}}]\).

He observes that the relative CPs in (261a) and (261b) can also occur in contexts where DPs are usually preferred, as shown in (262) taken from Caponigro (2002).

(262) a. \([_{FR \text{ Where I grew up}}]\) was a really small town.

a’. \([_{DP \text{ My hometown}}/^{*}_{PP \text{ In/To my hometown}}]\) was a really small town.

b. *I thought about \([_{FR \text{ when I was young}}]\).

b’. *I thought about \([_{DP \text{ my childhood}}/^{*}_{PP \text{ in my childhood}}]\).

We can thus conclude that the analysis in (259) provides what we needed at the beginning of this section, a structure able to capture the underlying similarity between FRs and headed relatives (encoded in their nominal status) with the asymmetries displayed by FRs. In (259), the two kinds of relativization strategy share the same structure; the only difference able to account for the observed asymmetries is that the DP layer selecting the relative CP of headed relatives is merged, while the missing DP layer of FRs is realized through movement of the *wh*-element to the external D position. The structure in (259) is also able to derive the similarity between *wh*-interrogatives and FRs. At the beginning of the derivation, both structures are simple CPs. Their different categorial status derives from the kind of movement involved: a phrase movement in interrogatives and a head movement in FRs. Only the latter is able to modify the syntactic properties of its landing site, turning the simple CP into a DP.

Let’s now try to explain the partial violation of the conditions on anti pied-piping displayed by FRs with -ever of the type in (263).

(263) John bought whatever book I wanted.

As illustrated in § 3.3.3, the sentence in (263) diverges from ‘standard’ FRs in two respects: (1) it presupposes the presence of an overt head; and (2) it involves downward pied-piping of an NP. This appears to be problematic for the analysis in (259). The assumption proposed by Kayne (1994) and later by Donati (2000), a.o., is to consider the FR in (263) as an apparent FR, actually displaying the structure of a full headed relative. As such, it is generated as the complement of an external D corresponding to the universal quantifier.
-ever. The derivation of the wh-element is the one proposed for a headed relative: it starts off as the original determiner of the head within the relative IP. The relative DP is then raised to Spec, CP. At this point, the external D -ever\textsuperscript{104} triggers the raising of the wh-determiner that adjoins to it. This is represented in (264).

\[(264) \ \ [DP[D \ what_i [D –ever]] \ [CP[DP [t_i] book]]_k [IP I wanted [t_k]]].\]

Under this analysis, the apparent violation of the anti pied-piping condition follows from the headed structure of (264). Moreover, the structure proposed for (263) makes the prediction that upward pied-piping should not be allowed. As we have seen in § 3.3.3 and repeated in (265) below, such a prediction is met.

\[(265) *Tom \ enjoys \ at \ whatever \ story \ his \ mother \ laughs.\]

The ungrammaticality of (265) finds a natural explanation within the structure proposed in (264). In the course of the derivation of the wh-element, pied-piping of the preposition would lead to the adjunction of a PP to a head, a clear violation of the structure-preserving constraint\textsuperscript{105}.

As for pseudo FRs, the derivation proposed for false free relatives of the kind in (266) tries to structurally represent the similarities shared with headed relatives. The proposal\textsuperscript{106} focuses on a derivation very similar to restrictive headed relatives. Very briefly, considering the false FR in (266), the relative CP modifies an abstract head (labeled ø) originating as the complement of the relative determiner.

\[(266) \ \ a. \ [DP \ Der [CP \ der dort sitzt]]. \]
\[b. \ [IP [DP \ der ø] dort sitzt]. \]
\[c. \ [CP [DPi \ der ø] [IP [t_i] dort sitzt]]. \]
\[d. \ [DP \ der [CP [DPi \ øk [D \ der t_k]] [IP [t_i] dort sitzt]]]. \]

In (266b), the abstract head occupies an IP-internal position as the complement of the relative determiner. Both are then raised to Spec, CP and, as the relative CP is selected by an external determiner, the abstract head further raises to Spec, DP.

The analysis of FRs has given the welcome result of extending the raising analysis to this relativization strategy, thus providing a uniform structure for headed relatives and FRs. Let’s now turn to illustrating the proposals that attempt to represent a different relativization strategy, namely, correlative clauses.
3.5.1.4. Correlative clauses

Among correlative constructions, Hindi correlative clauses offer a rich and interesting literature. I will here propose Dayal’s (1991) analysis of Hindi correlatives as base-generated in a left-adjoined position, and Bhatt’s (2003) analysis suggesting a structural representation of correlatives based on a new theoretical assumption, namely the Condition on Local Merge.

Hindi displays three kinds of relative structures, illustrated in (268a) through (268c) as translations of the English relative construction in (267).

(267) The girl who is standing is tall.

(268) a. jo laRkii khaRii hai vo lambii hai.
   REL girl standing is DEM tall is

b. vo laRkii lambii hai jo khaRii hai.
   DEM girl tall is REL standing is

c. vo laRkii jo khaRii hai lambii hai.
   DEM girl REL standing is tall is

‘The girl who is standing is tall.’
(Dayal 1991: 642)

While previous studies reduced the three relative constructions to the same structural derivation, Dayal (1991) suggests deriving the sentences in (268a) through (268c) from two different structures. She bases her assumption on some syntactic evidence distinguishing the sentences in (268b) and (268c) from the sentence in (268a). Such syntactic differences capitalize on:

a. the possibility for the relative structure in (268a), but not those in (268b) or (268c), to display an overt head in both clauses.
b. the requirement in (268a), but not in (268b) or (268c), that the determiner of the main CP be morphologically definite. (Only indefinite Ds introducing a partitive structure, i.e. ‘five of them’, are allowed.)
c. the possibility for the structure in (268a), but not those in (268b) or (268c), to allow multiple-headed relatives.

Dayal proposes to derive the observed asymmetries from a different structural representation. She thus argues for two kinds of relativization structures in Hindi which are semantically and syntactically different: 1. what she calls ‘embedded relatives’ exemplified by sentences (268b) and (268c); 2. left-adjoined relatives, i.e. genuine correlative structures, exemplified by (268a).
She proposes a structure for the correlative construction in (268a) in which the relative CP is base-generated in an A’ position, namely, left-adjoined to the main IP. Furthermore, the relative pronoun jo is an operator which moves to an A’ position within the relative CP, namely Spec, CP, binding a trace in its base position inside the relative CP. Semantically, the whole relative CP acts as a generalized quantifier binding the DP vo in the main clause. The representation in (269), taken from Dayal (1991: 676) and slightly modified, illustrates Dayal’s proposal for the correlative structure in (268a).

(269)

\[
\begin{array}{c}
\text{Spec} \\
\text{jo}_i \quad t_i \text{ laRkii khaRii hai} \\
\text{REL} \\
\text{girl standing is} \\
\text{DEM tall is}
\end{array}
\]

Dayal proposes the same adjunct derivation for multi-head correlatives, as briefly sketched in (270).

(270)

\[
\begin{array}{c}
\text{Which girl}_i \text{ heard which } \text{CD}_j \\
\text{Matrix DP}_i \text{ that girl} \\
\text{Matrix DP}_j \text{ that CD} \\
\text{V-I bought}
\end{array}
\]

(adapted from Bhatt 2003: 12)

Trying to derive the differences between the sentences in (268) underlined by Dayal in light of the proposed structures in (269) and (270), we can simply say that:

a. the overt realization of the head in both CPs is only available in the correlative structure where the two DPs are generated as independent
from each other. The same does not hold for the embedded structures where, in Bianchi’s (1999) raising analysis, the head is generated as the complement of the relative determiner jo to then raise, occupying a position adjacent to the external determiner vo, thus forming a chain. The lower copy of the head is c-commanded by the first link of the chain and hence obligatorily deleted in the phonetic representation by the principle that does not allow the spellout of traces in a chain. In Dayal’s terms, heads internal to the relative CP are permitted only in quantificational structures, i.e. in structures like (268a), but not in embedded relative clauses of the kind in (268b) and (268c) which are set-denoting terms.

b. the definiteness requirement of the determiner introducing the matrix CP in correlative structures follows from the intrinsic quantificational nature of the relative CP. Since the set denoted by the relative CP is presupposed, it must be resumed by a definite determiner in the matrix CP. The same does not hold for the embedded structures displaying different semantics.

c. the possibility of multiple heads derives from the correlative structure and from its semantic import. Without going into details, we can basically say that, according to Dayal (1991: 667), the correlative structure in (270) involves unselective binding of the intrinsically non-definite relative DP by an implicit universal quantifier. By definition, an unselective binder can bind multiple variables; thus, multiple relative DPs can be bound by as many relative DPs in the matrix CP. On the contrary, neither the adjunct analysis nor the raising analysis representing the embedded structures in (268b) and (268c) involve unselective binding. Within the raising analysis, the external determiner can license only one NP head, and a unique position is provided able to host only one relative DP, namely Spec, CP.

A different proposal for the structural representation of a correlative construction comes from Bhatt (2003). Bhatt demonstrates that the relative CP of a correlative structure, although appearing distant from the NP it modifies, shows locality effects. His proposal capitalizes on some evidence he observes:

a. the presence of island constraints between the relative CP and the associate matrix DP. While the relative CP and matrix DP can be separated by a finite clause, as shown by the grammaticality of (271a), they cannot be separated by islands, as shown by the ungrammaticality of (271b), where the NP is considered an island.
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(271) a. \([\text{Relative-CP}] \_i \ [\text{Sita thinks that} \ldots \text{matrix DP}_i \ldots]\]
   \[\text{[jo larki: TV-par ga: rah-i: hai]} \_i \ [\text{Sita.F think-Hab.F be.Prs that Dem beautiful be.Prs}]
   \text{‘Sita thinks that the girl who is singing on TV is beautiful.’}\]

b. \*\([\text{Relative-CP}] \_i \ [\text{IP} \ldots \text{NP NP [RC..matrix-DP}_i \ldots]] \ldots\]
   \*[\text{[jo vahã: rah-ta: hai]} \_i \ [\text{mujh-ko vo}] \ldots]
   \[\text{[kaha:ni: [jo Arundhati-ne us-ke-baare-me story.F Rel Arundhati-Erg Dem-about likh-ii]} \_i \text{ pasand hai.}]
   \text{‘Who lives there, I like the story that Arundhati wrote about that boy.’}\]
   (Bhatt 2003: 13)

Bhatt observes that the facts in (271) cannot be explained by simply assuming that the relationship holding between the relative CP and the matrix DP is just variable binding, which, he adds, does not display island effects, as shown by the acceptability of the sentence in (272).

(272) \[\text{har larke-koi [vo kaha:ni: [RC jo Arundhati-ne every boy-dat that story.F Rel Arundhati-Erg us-ke-baare-me_i likh-ii]} \_i \text{ pasand hai.}]
   \text{Pron-about write-Pfv.F like be.Prs}
   \text{‘Every boy \_i likes [the story [RC that Arundhati wrote about him \_i]].’}\]
   (Bhatt 2003: 14)

b. the constituency of the relative CP and of his associated matrix DP. Bhatt observes that the relative CP and the matrix DP of a correlative construction form a constituent. They can, in fact, be coordinated, as in (273).

(273) \[\text{Rahul a:jkal [DP [DP jo kita:b Saira-ne likh-I]} \_1 \text{ Rahul nowadays Rel book.F Saira-Erg write-Pfv.F vo}_1 \]
   \[\text{aur [DP [jo cartoon Shyam-ne bana:-ya]} \_2 \text{ Dem and Rel cartoon Shyam.Erg make-Pfv vo}_2 \]
   \[\text{parh raha: hai.} \text{ Dem read Prog be.Prs}\]

\[\text{Dem read Prog be.Prs}\]
‘Nowadays, Rahul is reading the book that Saira wrote and the cartoon that Shyam made.’ (Lit. ‘Nowadays, Rahul is reading [which book that Saira wrote] that (book)] and [[which cartoon that Shyam made] that (cartoon)].’
(Bhatt 2003: 16)

Furthermore, the constituency facts are confirmed by the impossibility of extracting subconstituents out of the coordinated constituent [relative-CP matrix DP], as shown in (274).

(274) *[jo cartoon Shyam-ne bana:-ya:] [Rahul a:jka] [DP
Rel cartoon Shyam-Erg make-Pfv Rahul nowadays
[DP jo kita:b Saira-ne likh-I:]_1 vo]1 aur [DP t_{CP2}
Rel book.F Saira-Erg write-Pfv.F Dem and
vo]2] parh raha: hai].
Dem read Prog be.Prs
‘*[which cartoon that Shyam made]_2, nowadays, Rahul is
reading [[which book that Saira wrote] that (book) and [t_{CP,2}
that (cartoon)].’
(Bhatt 2003: 18)

c. the impossibility of fronting two relative CPs. While correlative structures allow for more than one argument in the matrix CP to have an associated relative CP, allowing either one to be fronted, it is impossible to front more than one relative CP within the same correlative structure, as shown by the grammaticality of (275a) and (275b) and the ungrammaticality of (275c).

(275) a. [jo larka: tumha:re pi:chhe hai]_1
Rel boy-dat your behind be.Prs
Ram-ne [us larke-ko]_1 [jo kita:b
Ram-Erg Dem boy-Dat Rel book
Shantiniketan-ne chha:pi: thi:]_2 [vo
Shantiniketan-Erg publish-Pfv.F be.Pst.F Dem
kitaab]_2 dii.
book give-Pfv.F

b. [jo kita:b Shantiniketan-ne chha:pi: thi:]_2
Rel book Shantiniketan-Erg publish-Pfv.F be.Pst.F
Ram-ne [jo larka: tumha:re pi:chhe
Ram-Erg Rel boy-Dat your behind

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*d. reconstruction effects of the relative CP lower in the structure. Bhatt observes that if a pronoun\textsuperscript{13} c-commands the matrix DP associated with a relative CP, the pronoun cannot co-refer with a name appearing inside the relative CP, thus yielding a violation of the principle C condition, as in (276).

(276) \[ [\text{jo larkii Sita-koj pyaar kar-tii hai}]_i [us-ne_k/*j \text{ us-koj thukraa di-yaa}]. \]

(Bhatt 2003: 22)

Interestingly, co-reference between the name inside the relative CP and the pronoun adjacent to the matrix DP is instead possible if the pronoun does not c-command the matrix DP, as in (277) where the pronoun *us-ko* linearly follows the matrix DP *us-ne*.

(277) \[ [\text{jo larkii Sita-koj pyaar kar-tii hai}]_i [us-ne_i \text{ us-koj thukraa di-yaaj}]. \]

(Bhatt 2003: 22)

Likewise, a quantifier c-commanding a matrix DP can bind a pronoun inside its associate relative CP although it does not superficially c-command it, as in (278).
The syntactic representation of relative constructions

The syntactic representation of relative constructions

(278) [jis larke-ko vo_i pasand kar-ti: hai]_j [har Rel boy-Dat Dem like do-Hab.F be.Prs every larki:i [us larke-ko]_j buddhima:n samajh-ti: girl Dem boy-Dat intelligent consider-Hab.F hai]. be.Prs
(Bhatt 2003: 24)

The data illustrated above strongly suggest that:

1. the sensitivity to islands is evidence that something has been moved. The impossibility of establishing a relation between the relative CP and its associate matrix DP across a strong island suggests that it is either one of the two constituents that has been overtly moved;^{114}
2. since the associate matrix DP does not appear to be moving overtly, it is the relative CP that moves by A’-movement;
3. the constraints on co-reference support a movement account. The violation of principle C and the facts on binding by a quantifier suggest that the relative CP must be interpreted in a lower position, a position where it can be c-commanded by the pronoun and quantifier. Such a position is adjacent to the associate matrix DP. Constituency facts support the assumption that the relative CP and its associate matrix DP form a constituent at some point in the derivation.

Dayal’s (1991) non-movement approach is not able to capture the facts presented in Bhatt (2003). In order to provide a proper representation to account for the data, Bhatt (2003: 11) proposes a derivation for a correlative structure like the one sketched in (279), which is slightly modified.^{115}

(279)
According to Bhatt’s proposal and structural representation, the relative CP of a correlative construction is base-generated in an A’ position, namely, adjoined to its associated matrix DP inside the matrix IP. The discontinuous structure is then derived by A’ moving the relative CP to a position adjoined to the matrix IP. The structure in (279) is able to account for the islands sensitivity facts, as well as for the binding and reconstruction phenomena attested in the data provided by Bhatt and discussed above. Something remains to be said about the impossibility of fronting two relative CPs within the same correlative construction. Bhatt derives the constraint from the impossibility in Hindi of extracting two adjuncts (as opposed to the possibility of extracting two arguments) out of a finite clause. The ungrammaticality of (275c) therefore follows from an independent constraint against multiple adjunct extraction. The structure in (279), by assuming the movement of an adjunct out of a finite clause, is able to account for this fact.

Having provided a structure for simple correlatives, Bhatt analyzes multi-head correlatives, i.e. relative CPs displaying multiple heads associated to as many matrix DPs in the matrix clause. When testing them for reconstruction and binding phenomena, a different pattern arises. No restrictions on co-reference arise between a pronoun appearing in the matrix CP and a proper noun (indicated by Bhatt with Name) contained inside the relative CP of a multi-head correlative, as shown in (280).

(280) \[\text{[MultCorCP Rel}_i \text{Name}_j \text{Rel}_k \ldots] \text{[Pron}_j \text{DP}_k \text{DP}_i \ldots]\]  
(Bhatt 2003: 24)

In (280), the pronoun can freely co-refer with the proper noun inside the relative CP, showing that the latter is not interpreted in the c-command domain of the pronoun. Likewise, a quantifier in the matrix CP cannot bind a pronoun inside the relative CP of a multi-head correlative, as shown in (281).

(281) *\[\text{[MultCorCP Pron}_i \text{Rel}_j \text{Rel}_k \ldots] \text{[QP}_i \text{DP}_j \text{DP}_k \ldots]\]  
(Bhatt 2003: 25)

These facts seem to point to the lack of movement within multi-head correlatives and thus towards a different derivation from simple correlatives. However, further investigation leads Bhatt to observe that some reconstruction effects do appear within multi-head correlatives. In (282), a pronoun appearing in the matrix CP cannot be co-referent with a name inside the relative CP of a multi-head correlative in case its relative CP is associated with matrix DPs appearing in an embedded clause.
(282) *[\text{MulCorCP} \text{ Rel}_i \text{Name}_j \text{ Rel}_k \ldots] [\text{Pron}_j \text{ thinks that } [\text{DP}_i \text{ DP}_k \ldots]$

(adapted from Bhatt 2003: 26)

Example (282) is a Principle C violation. Furthermore, the possibility for a quantifier to bind a pronoun inside the relative CP of a multi-head correlative, despite the fact that it does not c-command it, is evidence that some movement operation takes place even in these correlatives. This is illustrated in (283).

(283) \[\text{MulCorCP} \text{ Pron}_i \text{ Rel}_j \text{ Rel}_k \ldots] [\text{QP}_i \ldots \text{V} [\text{CP} \text{ DP}_j \text{ DP}_k \ldots]]$

(adapted from Bhatt 2003: 27)

It remains to explain the data by providing a structural representation for multi-head correlatives able to capture the apparently strange facts regarding binding and reconstruction.\(^{117}\) Bhatt suggests a derivation for multi-head correlatives similar to the one given in Dayal (1991). According to this, the relative CP originates in an A’ position, namely adjoined to the matrix IP containing the associated matrix DPs, as represented in (284).

(284) \[\text{MultCorCP} \text{ Rel}_i \text{ Rel}_j \ldots]_{i,j} [\text{IP} \text{ DP}_i \text{ DP}_j \ldots]$

(Bhatt 2003: 12)

Bhatt further captures the reconstruction and binding data displayed by multi-head correlatives in configurations like the one sketched in (284), by assuming the following structure in (285).

(285) \[\text{MultCorCP} \text{ Rel}_i \text{ Rel}_j \ldots]_k [\text{IP2Bill thinks that } [t_k [\text{IP1}\ldots \text{ DP}_i \text{ DP}_j \ldots]]]$

(Bhatt 2003: 26)

In (285), the relative CP of a multi-head correlative merges, adjoining to the IP containing the associated DPs, and it is then fronted across a second IP embedding the first IP.

Bhatt is able to make sense of the diversified pattern by advocating for a common generalization underlying the two structures. He asserts that the grammar would be guided in choosing among the possible structures made available in Universal Grammar by a specific requirement: the relative CP of a correlative clause must entertain a relation as local as possible to its associated objects.\(^{118}\) In simple correlatives such a position is adjunct to the matrix DP; in multi-head correlatives it is adjunct to the smallest IP containing the associated matrix DPs. Bhatt identifies such a guiding condition as \textit{The Condition on Local Merge} as stated in (286).
Condition on Local Merge: The structure-building operation of Merge must apply in as local a manner as possible.
(Bhatt 2003: 31)

Concluding this section, we can say that the proposal laid down by Dayal (1991) and Bhatt (2003) on the structural derivation of correlative constructions has outlined two main syntactic features distinguishing correlative constructions from headed relatives:

a. the relative CP of a correlative construction is not selected by an external determiner.
b. the categorial status of the relative CP in a correlative construction is not that of a (complex) DP, but rather, that of a simple CP.

The relevant implications of such syntactic features are twofold:

1. the relative CP of a correlative clause is not embedded inside the matrix CP; it is, rather, adjoined to it.
2. the relative CP of a correlative construction does not have a nominal status and distribution.

This concludes the analysis on the proposals attempting to provide a structural representation of the different syntactic typologies of relativization. I now turn to the proposals that have been advanced to syntactically represent the different semantic types.

3.5.1.5. Representing the semantic interpretation of relative structures

After providing a structural representation for the main syntactic types of relatives, this section focuses on the tentative proposals to derive the semantic interpretation of relatives from their syntactic configuration, and better yet, to represent structurally the interpretive import characterizing each semantic type. This section thus shows the attempt to reconcile the semantic interpretation and syntactic properties displayed by relative structures by showing their interdependence and the strong connections holding between them.
For obvious reasons of space, I will here mainly focus on the proposals laid within the raising analysis. The different properties exhibited by restrictive and non-restrictive relative clauses, illustrated in § 3.4.1 and 3.4.2, call for a characterization of the two semantic types in terms of a different configuration. As for restrictive relatives, the data seem to be compatible with an analysis of raising and movement such as the one proposed by Kayne (1994) and Bianchi (1999). In this section I first briefly review the main conclusions reached in § 3.4.1 on the properties displayed by restrictive relatives, analyzing them against the raising hypothesis. I then illustrate the proposal for a structural representation of restrictive relative clauses (RRCs) within the antisymmetric framework.

Scope phenomena reveal that, in externally-headed relative clauses (EHRCs) receiving a restrictive interpretation, the external determiner has scope not just over the external head, but also over the relative CP, suggesting that the head and relative CP belong to the same constituent at some point in the derivation. Assuming that semantic scope reflects c-command, then within a RRC, both the head and the relative CP must fall in the c-command domain of the external determiner. In the antisymmetry theory, the relative CP, by being generated as the complement of the external D, is c-commanded by it, thus falling into its restrictive term.

Furthermore, reconstruction and binding phenomena attest that the head of a restrictive relative cannot have originated in its superficial position, but that its presence, in the form of a trace or copy, is attested inside the relative CP.

This is exactly what the raising analysis claims when it assumes that the head originates inside the relative IP as the complement of the wh-relative determiner, and then raises to an IP external position.

The lack of any definiteness effect in restrictive relatives is also consistent with the assumption that the wh-determiner is non-definite. Finally, the data on the material pied-piped by the wh-determiner and interpreted in a different position within the relative CP are clear evidence that some movement operations have taken place within the relative CP. Again, these data are expected under the raising hypothesis.

Given the syntactic properties displayed by RRCs, it is possible to assume a derivation consistent with the raising analysis. Specifically, the structures proposed to derive EHRCs and IHRCs appear to be restrictive. The derivation of a restrictive EHRC is reproduced in (287).
We are now left with the task of illustrating the proposals laid down in the literature in order to provide a proper structural representation for the properties exhibited by NRRCs. As illustrated in § 3.4.2, scope phenomena highlight that the external determiner of an externally-headed NRRC has scope only over the external head but not over the relative IP. In other words, the relative IP of a NRRC does not fall within the restrictive term of the external determiner. This means two things: a. the external determiner c-commands the head, but does not c-command the relative IP; b. the head and the relative IP do not form a constituent.

Moreover, binding and reconstruction phenomena reveal that the head is not reconstructed inside the relative IP, nor can it be bound by any material internal to it. This is strong evidence against the presence of the head inside the relative IP in the form of a silent copy or trace.

On the other hand, the material pied-piped by the head shows reconstruction inside the relative IP, thus attesting that the A’ dependency instantiated by the pied-piped material involves movement.

As opposed to RRCs, there is no general consensus in the literature as to the structural representation of NRRCs. The approaches preceding the raising analysis tried to derive the syntactic differences displayed by the two semantic types from specific rules of attachment to the tree.

Among these, there are three main approaches: the coordinate analysis according to which the NRRC is coordinated to the right of the matrix CP and contains a pronoun anaphoric to the external head (see Emonds 1979); the discontinuous constituent structure analysis, in which NRRCs are assimilated to parentheticals attached to the root clause rather than to the head (see McCawley 1982; Emonds 1979; and Cinque 1982); and the LF analysis assuming that NRRCs are attached to the tree at a very late stage of the derivation, namely at LF’ following LF (see Safir 1986). Another approach
derives the semantic and syntactic differences from the attachment of the relative CP in a position c-commanded or not by the external determiner. The restrictive interpretation is thus obtained by merging the relative CP to a position where it is c-commanded by the external determiner, namely to the N’-level (after the rise of the DP hypothesis, to the NP projection) while the non-restrictive interpretation follows by merging the relative CP into a position not c-commanded by the external determiner, namely NP (DP within the DP hypothesis); see Jackendoff (1977), Smits (1988), Fabb (1990) and Toribio (1992), a.o.121

As for the raising analysis, the properties displayed by NRRCs do not follow directly. As opposed to Bianchi (1999), Kayne (1994) argues that NRRCs do show reconstruction effects for anaphor binding. He thus observes that the syntactic differences displayed by the two semantic types are not so strong as to lead to two unrelated derivations. He proposes that the semantic differences must be derived from a different LF derivation, suggesting an analysis of NRRCs similar to that of RRCs. According to Kayne, the head of a NRRC originates inside the relative IP as the complement of the wh-determiner. The relative DP including the wh-determiner and the head then raises to Spec, CP where the head strands the wh-determiner by further raising to its specifier. From this point, the differences arise from a different derivation at LF. The non-restrictive interpretation derives from the covert movement of the relative IP to the specifier of the external D, in a position not c-commanded by the external determiner. In this position, the relative IP is higher than the external determiner and does not fall in its restrictive term. The movement of the relative IP would be triggered by a feature forcing the constituent to raise to a topic position, which is phonetically spelled out in some languages as an intonational break. Kayne’s proposal for the structural representation of NRRCs is sketched in (288).

(288)
The representation in (288) is similar to the structure proposed for both pre-nominal RCs and IHRCs, with the only difference being that in (288) the movement of the relative IP to Spec, DP is performed covertly.

With his proposal on NRRCs, Kayne reaches a unified approach assuming a common base structure for the two semantic types, thus deriving the observed syntactic and semantic differences from overt and covert movement operations. He is thus able to explain the commonalities shared by RRCs and NRRCs as being due to the distribution of the same relative pronouns in many Romance languages, the same superficial order of the elements, or the fact that some languages have no means of distinguishing the two structures.

Let’s now briefly see how to account for two of the differences exhibited by NRRCs, namely the lack of reconstruction and their islandhood for binding. As observed above, Kayne assumes that the head of a NRRC is reconstructed inside the relative IP. Bianchi (1999) argues for a different conclusion as discussed with respect to the data illustrated in § 3.4.2. She links the conclusions reached by Kayne to some interferences she singles out and eliminates, thus verifying the impossibility for the head of a NRRC to show reconstruction effects. The conclusion reached by Bianchi (1999) calls for an explanation of the data given the structure in (288) above. It is Bianchi (1999: 147) herself who provides it. She derives the impossibility of reconstructing the head in its base position within the relative IP to the fact that the external determiner must have a variable to bind at LF. In (289), where the head is reconstructed inside the relative IP, the determiner has no variable to bind at LF, thus yielding to vacuous quantification.

\[
(289) \quad \text{[DP [IP …[DP D\_REL NP]…] [DP D° [CP [e] [C° tIP]]]]}
\]

(Bianchi 1999: 148)

Example (289) is ruled out by the Principle of Full Interpretation. The only way to have a proper interpretation is for the NP head not to be reconstructed in the relative IP. In the same way, the structure in (288) accounts for the reconstruction of the pied-piped material. The latter can receive an interpretation only if it is reconstructed inside the relative IP as the complement of the predicate (*understand*), not if it remains stranded in Spec, CP. From this position, in fact, it cannot receive an interpretation from the external determiner (*John*), as shown in (290).

\[
(290) \quad \text{[DP [IP I don’t understand][DP John [CP [whose concern over the children]i [C° tIP]]]]}
\]
Kayne’s structure in (288) does not account for the islandhood of NRRCs. He seems to suggest that the islandhood for binding does not derive from the nature of the non-restrictive interpretation but could rather be linked to the definiteness of the external determiner, according to the fact that definite descriptions are islands for binding relations. Bianchi (1999: 152) adds that it is the ‘backgrounded’ denotation of the information delivered by non-restrictives that causes the islandhood. She further suggests that, perhaps, by moving to a topic position of the matrix clause, the relative IP may reach a position where it is not c-commanded by any matrix binder and thus be opaque for any binding relation.

The discussion carried out in this section is not exhaustive of the many aspects and problematic issues raised by Kayne’s analysis of NRRCs. (See detailed discussions in Bianchi 1999; Alexiadou et al. 2000; de Vries 2002; and Borsley 1997, 2001.) I will here only point out two problems that Kayne’s analysis faces and that remain to be accounted for. The first regards the possibility of NRRCs referring to a non-NP head. As observed in § 3.4.2, the head of a NRRC can be an AP, a VP, and a CP, as shown in (202) and repeated here as (291).

(291) a. Sara is famous, which I am not.
   b. The children ran to the car, which I didn’t.
   c. Tom booked the tickets, which I didn’t believe.

As Borsley (1997) points out, it appears problematic for the raising analysis to explain how the non-nominal category could be selected as the complement of the wh-determiner inside the relative IP. Moreover, it is not clear what determiner could select the relative CP in structures like (291). While Kayne (1994) does not discuss such cases, Bianchi (1999: 151, 2000: 137) answers Borsley’s objection by likening the role carried out by the wh-determiner in structures like (291) to that of anaphoric determiners or pronouns used for cross-sentential anaphora in the so called relativ de liaison, as illustrated in example (292) taken from Bianchi (1999: 152).

(292) [...] whom we name hereafter the Prince of Cumberland: which honour must not unaccompanied invest him only [...] (Macbeth I.4: 38–40)

The similitude between the use of the wh-determiners in structures like (291) and the anaphoric use of the relative morphemes in structures like (292)
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derives from comparative data on the Italian equivalent of the structures in (291). In these, the non-nominal head must be followed by relative connectors, like *cosa che* ‘thing that’ and *la qual cosa* ‘which thing’, introducing the relative CP, as shown in (293).

(293) _Gianni arrivò tardi, il che/la qual cosa fu imbarazzante._
  ‘Gianni arrived late, which was embarrassing.’
  (Bianchi 2000: 138)

A similar fact is observed in French where the equivalent structure of (289) is introduced by a pronominal head *ce* ‘that’ distinct from the external head, as in (294).

(294) _Jean était en retard, ce qui était embarassant._
  ‘Jean was late, which was embarrassing.’
  (Bianchi 2000: 138)

Bianchi observes that if the role carried out by relative pronouns in the apparent NRRCs like (291) can be assimilated into that of the anaphoric pronouns of structures like (292), the structures in (291) may turn out not to be genuine relative structures. They could rather be analyzed as parentheticals or structures coordinated to the matrix CP. If this is the case, the raising analysis does not fail to provide an account of these structures, which, in fact, are not relatives.

A second problem the raising analysis faces is how to account for NRRCs displaying an overt NP within the relative CP, as in (231b) repeated here as (295).122

(295) _Rome, a city which hosts some of the most beautiful Roman ruins, is very enchanting._

If the external head *Rome* originates in a relative IP internal position, it competes with the internal head *city* for the same position. It is not clear how both heads could be present in the same relative clause. Kayne’s analysis has been criticized even by linguists moving within the antisymmetric framework; thus, alternative analyses have been proposed. To cite only a few, Platzack (2000) proposes that RRCs are complements to the N head, which
The syntactic representation of relative constructions does not raise, while NRRCs are derived by a structure in which an empty N takes the head as its specifier and the relative CP as its complement, as illustrated in (296a) and (296b) respectively.

\[(296)\]
\[\text{a. } [\text{DP } D^\circ[\text{NP } N^\circ[\text{CP } Op \ldots t_i]]]\]
\[\text{b. } [\text{DP } D^\circ[\text{NP } DP [N^\circ [\text{CP } Op \ldots t_i ]]]]\]

(quoted in Bianchi 2002:4)

In these structures the relative CP must contain a null operator binding the relative trace, as proposed in the adjunct analysis. Alternatively, the relation between the head and a non-restrictive relative CP is mediated by an abstract functional head X analyzed as specifying coordination. This head relates two independently referential categories, namely the head and relative CP, by taking the former as its specifier and the latter as its complement. The head and relative CP are co-referential. Co-reference between the two conjuncts determines agreement. The phi-features of the head match with those of the wh-relative pronoun in Spec, CP. It is the functional head X that mediates the matching by entering into an agreement relation with both conjuncts separately. The specifying coordination analysis is sketched in (297).

\[(297)\]
\[\text{[xp DP}_i [\text{XP X° [CP OP}_i [\text{CP } \ldots t\ldots ]]]}\]

(quoted in Bianchi 1999:142)

This structure is able to derive two main properties of NRRCs: the fact that the determiner does not c-command the relative IP and that the head is not reconstructed inside it.

Koster (2000) advocates for a similar analysis where the relative CP is analyzed as a free relative and the DP in the first conjunct as its head. In his analysis, a Boolean operator (represented by the colon :) in the conjunct hosting the free relative is co-referent with the head hosted in the first conjunct. Such an operator can perform set intersection, thus yielding a restrictive reading, or it can perform set union, thus yielding a non-restrictive reading. Koster’s analysis is illustrated in (298).

\[(298)\]
\[\text{[NP [NP a person] [: [CP who}_i \text{loves dogs}}]]]\n
Finally, de Vries (2002) moves in a similar direction, developing an analysis of NRRCs as specifying conjuncts to their heads. His analysis differs from Koster’s in at least two main respects.
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1. The second conjunct is a false free relative, thus a DP, in apposition to the head contained in the first conjunct, another DP. Specifying coordination is performed between two DPs. As opposed to a true free relative, a false free relative has a derivation similar to RRCs. It modifies an abstract pronominal head ø corresponding to the raised head in restrictives. So the implicit, null head within the false free relative is raised (or ‘promoted’ in de Vries’s terms) as assumed by the raising analysis. In some occurrences, the empty head ø can be spelled out. This is the case of sentences like (295) above. The spelled-out NP head refers to the DP in the first conjunct.
2. Specifying coordination only yields a non-restrictive interpretation.

De Vries uses the symbols &: to represent specifying coordination. His derivation for a NRRC is represented in (299).

(299) \[&: [DP_1 Annie]; \&: [DP_2 ø_k [CP whom is our manager]]_j \]
(de Vries 2002: 219)

The analysis sketched in (299) captures many properties of NRRCs. Among them, the impossibility of reconstructing the head inside the relative CP follows from the fact that the former is embedded inside the first conjunct and it is instead the abstract pronominal head ø that is reconstructed together with the pied-piped material inside the relative CP. Scope and binding phenomena also follow from the derivation in (299). The head and any material preceding it (like a determiner) do not c-command the second conjunct. Since there is no c-command relation between the two conjuncts, no scope or binding relation can take place between them. This is only a rough account of the numerous proposals offered by the literature to provide a structural representation for NRRCs.

3.6. Summary

This chapter has introduced the reader to the semantic and syntactic concept of relativization by illustrating the main relative typologies attested in the world’s languages. The raising analysis proposed by Kayne (1994) and further developed by Bianchi (1999) has proved to be able to capture and propose a common structure to unify apparently diverse structures. More specifically, the structural representation provided for the syntactic typologies of IHRCs,
EHRCs and FRs and for the semantic types of RRCs suggests them to be strictly related structures. IHRCs and correlatives, on the other hand, also share important syntactic analogies as well as a similar semantic interpretation. The analysis on LIS relative structures conducted in chapter 6 will consider this similarity again to such an extent that, at first sight, both a correlative analysis and an IHRC analysis will appear to be compatible with the LIS data.