THE SYNTAX OF HEADED RESTRICTIVE RELATIVE
CLAUSES WITH SPECIAL REFERENCE TO SPANISH

A Thesis in
Spanish
by
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ABSTRACT

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The topic of this dissertation is the syntax of headed restrictive relative clauses (RRCs) in Spanish. The dissertation has two main goals. One is to demonstrate that head raising (HR) approaches to RRCs are empirically inadequate and require more complex theoretical assumptions than a wh-movement approach to RRCs. The second goal is to demonstrate that the diachronic evolution of RRCs from Latin to Spanish (and more generally to Romance) can provide insight into some of the problems that are often associated with wh-movement based-accounts of RRCs. Tracing the historical development of RRCs sheds light on the poorly understood and complex problem of variation in the CP area of RRCs. Especially in Spanish and Romance, information about the diachronic evolution of RRCs provides a means of understanding the distribution of inflected relative pronouns (such as Spanish ‘quien’ and ‘el cual’) and uninflected complementizers (i.e., Spanish ‘que’) in the CP area of RRCs.

Chapter 1 introduces the topic and provides the background and motivation of the study. Chapter 2 provides a detailed explanation of the head raising approach, as presented by those who support it in the literature (especially Kayne 1994; Bianchi 1999; Bianchi 2000b; De Vries 2002). After explaining the head raising approach in detail, it is argued
that adopting a head raising approach to RRCs leaves a number of key issues unexplained and forces the assumption that semantically equivalent RRC structures (i.e., ‘The man who I saw’ vs. ‘The man that I saw’ vs. ‘The man I saw’) have important differences in their underlying syntactic structure.

Chapter 3 outlines the standard wh-dependency approach to RRCs that was developed within the Government and Binding (GB) framework. This chapter gives an overview of the basic wh-movement approach and discusses some of the problems traditionally associated with this approach, including cross-linguistic variation in the CP area of RRCs, the Doubly Filled COMP filter and That-trace effects.

Chapter 4 addresses the diachronic development of RRCs, arguing that RRCs in modern Romance languages, and specifically in Spanish, arose from earlier correlative structures. Previous proposals concerning the transition from correlative to post-nominal RRCs are presented and then a novel analysis is offered which avoids the problems identified with the previous accounts.

Finally, Chapter 5 explores how postnominal RRCs in Latin, which were introduced by inflected forms of the indefinite pronoun ‘qui’, evolved into RRCs in modern Romance languages, including Spanish. Unlike Latin, Spanish and other Romance languages employ a combination of inflected pronominal forms (such as ‘quien/quienes’ and ‘el/la que’) and uninflected complementizers (i.e., ‘que’) in the CP area of RRCs. Following recent work by Roberts and Rossou (2003), it is argued that complementizers evolved from earlier Latin pronominal forms of ‘qui’ via a process of syntactic reanalysis (also called grammaticalization). Chapter 5 also applies the analysis of RRCs presented here to many different types of Spanish RRCs and summarizes the main results of the dissertation.
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Finally, I would like to dedicate this dissertation to my late grandfather, Rouen Lea Duncan.
Chapter 1

Introduction

The topic of this dissertation is the syntax of headed restrictive relative clauses (RRCs) in Spanish. The dissertation has two main goals. One is to demonstrate that head raising (HR) approaches to RRCs are empirically inadequate and require more complex theoretical assumptions than a wh-movement approach to RRCs. The second goal is to demonstrate that the diachronic evolution of RRCs from Latin to Spanish (and more generally to Romance) can provide insight into some of the problems that are often associated with wh-movement based-accounts of RRCs. Tracing the historical development of RRCs sheds light on the poorly understood and complex problem of variation in the CP area of RRCs. Especially in Spanish and Romance, information about the diachronic evolution of RRCs provides a means of explaining the distribution of inflected relative pronouns (such as Spanish ‘quien’ and ‘el cual’) and uninflected complementizers (i.e., Spanish ‘que’) in the CP area of RCs.

It will also be shown that adopting a wh-dependency analysis of RCs allows for a uniform analysis of complex post-nominal modifiers in both English and Spanish. Consider the following English sentences, all of which contain complex post-nominal modifiers:

(1) a. …a man [that is fluent in Spanish]…
    b. …a man [who is fluent in Spanish]…
    c. …a man [fluent in Spanish]…

(2) a. …a man [that’s in my Spanish class]…
    b. …a man [who’s in my Spanish class]…
    c. …a man [in my Spanish class]…

The wh-dependency analysis presented here enables a uniform syntactic analysis of the post-nominal modifiers in (1a-c) and (2a-c). In the simplest terms, a wh-dependency
approach to RC syntax enables one to analyze all the sentences in (1) and (2) as instances of a head NP (‘a man’) and complex post-nominal modifier (CP, AdjP or PP). In contrast, adopting a head raising analysis along the lines of proposals spelled out in Kayne (1994) and Bianchi (1999) and Bianchi (2000b) forces one to assume that (1a) has a different structure than (1b) and that (2a) has a different structure than (2b), in spite of their obvious semantic similarity. In addition, a head raising analysis of (1a-b) and (2a-b) entails that the syntactic structures of (1c) and (2c) must differ radically from those of (1a-b) and (2a-b) (respectively). In other words, a head raising analysis of RCs forces one to assume that the structure of ‘NP + RRC’ constructions is drastically different from the structure of other ‘NP + modifier’ constructions. This is a crucial weakness of the head raising approach that is avoided if one adopts a wh-dependency analysis of RRC constructions.

The remainder of this introduction has two primary goals: to provide the theoretical background and motivation for the present study and to outline how this dissertation will be organized.

1.1 Theoretical Background and Motivation

1.1.1 Wh-dependency versus Head Raising

Generative research on the structure of both restrictive (3) and non-restrictive (4) RC constructions has largely been centered around the debate between two competing approaches, which are briefly introduced in (5) and (6) below:

(3) Tengo el informe que escribiste ayer.
I have the report that you-wrote yesterday.
I have the report (that) you wrote yesterday.
(4) El informe, que nos mandaron ayer, está en mi escritorio.
The report, which they sent us yesterday is in my desk
The report, which they sent us yesterday, is in my desk.

(5) **Wh-dependency approach:** RCs are adjoined structures whose nominal antecedent is base generated in a position external to the RC which modifies it. RCs are self-contained constituents that exhibit a non-interrogative wh-dependency. (Chomsky 1977b)

(6) **Head raising approach:** RCs are syntactic complements of an externally generated determiner projection; the nominal antecedent of the RC is base generated within the RC which modifies it and subsequently undergoes raising (first proposed in Vergnaud 1974)

Kayne (1994), on the basis of mostly English data, adopts and elaborates on the general approach in (6), as part of his larger antisymmetry approach to syntactic structure. Kayne’s head raising proposals have greatly renewed interest in this long-standing debate; subsequently, a number of authors have published research that further explore and refine his analysis, with the general purpose of supporting (in some cases, tentatively) a head raising approach to RC structure (cf. Bianchi 1999; Bianchi 2000b; Grosu 2000; Murasugi 2000a; Zwart 2000; De Vries 2002; among others). In addition, several studies on the acquisition of RCs have been argued to provide support for Kayne’s version of the head raising hypothesis (cf. Powers and Musolino 1997; McDaniel, McKee and Bernstein 1998). In light of this research, many generative linguists now consider some version of the approach in (6) to be the standard account of the syntax of RC structure.

However, recent research has also identified several serious problems that arise in assuming a head raising structure for RCs (Borsley 1997; Platzack 2000, among others). Three of the more convincing objections to the head raising analysis of RCs are outlined in the following sections.
1.1.2 Constituency and Head Raising

One of the major goals of syntactic theory is to attempt to account for (to the greatest extent possible) native speaker intuitions regarding which linguistic units form syntactic constituents. It is clear that accepting a head raising analysis will lead one to strongly contradict both traditional definitions of syntactic constituency as well as native speaker intuitions about constituency.

Consider (7-9) below from Spanish:

(7) Esos libros, los cuales compré ayer, están en mi oficina.
Those books, them which I bought yesterday, are in my office.
Those books, which I bought yesterday, are in my office.

(8) [CP [DP esos [CP [DP [NP libros] los cuales ti] [IP compré ti ayer]]][VP...]]
(Head raising structure)

(9) [CP [DP esos [NP libros]] [CP [DP [NP cuales]] [IP compré ti ayer]][VP...]]
(Wh-dependency structure)

Native speaker intuitions about the constituency of (7) are as follows: *esos libros* forms a constituent (subject DP) which is understood as the antecedent of the RC; *los cuales compré ayer* is a constituent (CP) which modifies the antecedent (*esos libros*); and finally *están en mi oficina* is comprised of two smaller constituents (V + PP), which together form a larger constituent (VP).

Compare these intuitions against the structure in (8), which in generic terms shows a head raising structure for (7). It is clear from (8) that the RC *los cuales compré ayer* cannot be a constituent, given that the nominal *libros* has raised out of this clause. The raising of *libros* in (8) also entails that *esos libros* is not a constituent. Contrary to expectations, the
head raising approach forces the following assumptions: the determiner *esos* c-selects the RC complement *compré los cuales libros ayer; los cuales libros* must be a DP which moves to Spec,CP of the RC Cº projection; and finally, the nominal *libros* moves ahead of *los cuales* to Spec,DP (DP is already located in Spec,CP), thus yielding the correct PF word order shown in (7). Clearly, adopting the head raising analysis requires a severe departure from traditionally understood notions of syntactic constituency. In addition, the status of the definite article *los* in the RC internal DP is unclear if a head raising approach is applied to (7). Given that *cuales* occupies Dº (per Kayne 1994, Bianchi 1999 and Bianchi 2000b) and *libros* occupies Nº, it is unclear what position *los* could occupy in (8); this additional problem will be discussed in more detail in section 1.3.1.

Adopting a wh-dependency analysis for the Spanish RC, as shown in (9), however, circumvents these problems. In (9), *esos libros* is a DP base generated external to the RC; *los cuales compré ayer* is a constituent RC with a clause-internal wh-dependency between *los cuales* and the DP trace it leaves behind after undergoing wh-movement to Spec,CP. The fact that the RC in (9) may optionally be included or omitted provides further evidence for its status as a constituent. In short, (9) is much more adequate than (8) from the point of view of conformance to native speaker intuitions about constituency. The same constituency facts hold true for English (Borsley 1997) and countless other languages (cf. Alexiadou et.al. 2000).

1.1.3 Coordination and Head Raising

Coordination facts also present significant, and seemingly insurmountable, challenges to the head raising analysis as a plausible structure for RCs (see Alexiadou et. al.

(10) El hombre y la mujer que perseguía la policía
    The man and the woman that persued the police
    The man and the woman who the police were persuing.

(11) Juan vio a un hombre y María vio a una mujer que perseguía la policía.
    Juan saw (A) a man and María saw (A) a woman that persued the police.
    Juan saw a man and María saw a woman that the police were persuing.

To account for (10), a head raising approach would have to assume that the nominal heads *hombre* and *mujer* raise out of the RC separately to attach to two conjoined determiners. This would require the RC in (10) to have a discontinuous raised nominal antecedent. The same problem confronts a head raising approach to (11); one would have to assume the raising of a discontinuous antecedent into two separate clauses. Kayne does not address these coordination facts in his 1994 discussion of RC structure\(^1\). With respect to (11), it seems very ad hoc to claim that the nominal elements *hombre* and *mujer* originate within the RC and are later split and distributed across two clausal complements after raising (thus adjoining to two separate determiners) (Alexiadou et.al. 2000). It is unclear how any head raising approach could handle this problem.

Adopting a wh-dependency analysis of RCs easily circumvents these problems. In (10), the antecedents *el hombre* and *la mujer* are base generated outside of the RC as simple conjoined DPs. In (11), the same antecedents are base generated as arguments within the clause that contains them. Under a wh-dependency analysis, the RC is analyzed as a self-contained adjunction structure which avoids the problems created if one assumes overt raising of the nominal antecedents (*hombre* and *mujer*).
1.1.4 Overt Case Marking and Head Raising

Languages with overt case marking on relativizers present another problem for the head raising approach to RC structure. In such languages, the NP antecedent of the RC may be marked with a different overt case from the relativizer, as shown in the Polish example in (12) (from Borsley 1997):

(12) Widziałem tego pana, który zbił ci szybe.
    saw-1sg the-ACC man-ACC who-NOM broke your glass
    I saw the man who broke your glass.

For English RCs with wh-relativizers, Kayne argues that the NP antecedent receives its Case from the higher external Dº. Yet, the antecedent should also receive Case from its trace, as moved constituents normally do. According to Kayne’s analysis, the NP pana is a complement of the Dº który; therefore, one would expect pana to receive NOM Case from the Dº który. But, (12) shows that the antecedent NP is marked with ACC Case, which it presumably received from the external Dº tego. Thus, it appears that there is a conflict in Case, and some mechanism would be required that would prevent the antecedent NP from inheriting Case from its trace (Borsley 1997).

It seems odd that a Dº (który) and its nominal complement (pana, if one assumes head raising has occurred) would be marked with different overt case morphology; yet this is exactly the conclusion one must accept if a head raising analysis is applied to sentences like (12). Adopting a wh-dependency approach allows for a straightforward and simple account of these case marking facts: the Dº tego and the Nª pana receive ACC case via their object relationship to the matrix verb (widziałem); the relativizer który receives NOM case via its subject relationship to the verb within the RC constituent (zbił).
1.1.5 The Viability of a Head Raising Approach to RCs

To conclude, sections 1.1.2, 1.1.3 and 1.1.4 provide clear evidence that a head raising approach to RCs faces problems in achieving explanatory adequacy (see Chapter 2 for further discussion). In addition, it has been shown that a wh-dependency approach can redress all of these issues.

Furthermore, it is important to keep in mind that Kayne (1994) in large part relies on theory internal argumentation to defend a head raising structure for RCs. He explicitly states that one of his primary reasons for adopting a head raising approach to RCs is that this analysis is the only one that is compatible with the larger antisymmetry framework that he presents in his 1994 book *The Antisymmetry of Syntax*:

“This structure [in which the RC is a complement of an external determiner] is in fact the only one of those that have been proposed for relative clauses that is compatible with the present LCA [Linear Correspondence Axiom] based theory.” (Kayne 1994, pp. 87).

While helpful for Kayne’s larger syntactic framework, the head raising approach to RC syntax seems to be both more complex while at the same time less explanatorily adequate than a wh-dependency account.

1.2 Re-thinking a Wh-dependency Approach: the Diachronic Evolution of relatives

In light of these (and other) shortcomings of the head raising approach to RRCs, this dissertation presents a new analysis of RRCs in Spanish. This analysis is based on the assumption that wh-movement is the central transformation involved in the derivation of RRCs in Romance. It will be argued that the diachronic development of RRCs and of elements in the CP area of RRCs can shed light on the complex problem of variation in the
comp area of RRCs in Spanish as well as other languages. The problem of variation in the comp area of RRCs has traditionally been a problem for wh-movement accounts of RRCs cross-linguistically.

It is argued that RRCs in modern Romance languages evolved from correlative structures in Latin, which were similar to correlative structures found in early Indo-European dialects including Hittite and Vedic/Sanskrit. The early correlative structures were subject to a great deal of variation with respect to the linear order of clauses and the presence/absence of the nominal antecedent in both the modifying (correlative) clause and the main (matrix) clause. Therefore, many of the properties of RRCs are attributable to their correlative origin and the role of syntactic change, as well as how to represent it in generative (Minimalist) syntax, is prominent.

1.2.1 RCs and the Minimalist Program

The MP is not a fully developed theory of grammar, but rather an ongoing field of investigation; that is, the MP is a work in progress (Lasnik 1999). A central goal of the MP is achieving a theory that is descriptively adequate while at the same time minimally complex (especially as compared to GB theory). The HR approach to the syntax of RRCs syntax faces problems on both of these fronts. With this idea in mind, this dissertation will present a unified account of the derivation of relative clauses in Spanish, especially focusing on word order, hierarchical structure and internal syntax of constituents. Importantly, the account presented here will strive to provide an explanation which captures the greatest amount of Spanish RRC data while at the same time making use of the smallest possible number of rules and/or mechanisms. The analysis of RRCs presented here is informed by both synchronic properties of modern RRCs as well as facts about their
diachronic development. In addition, the analysis is compatible with MT, but is not
dependent on any theory-internal mechanisms of Minimalist syntax and is compatible with
other syntactic frameworks as well.

In reviewing the existing literature on the topic of RRCs within the Minimalist
syntax, some important gaps are evident. For example, there are very few studies which
address the topic of relative clauses within the framework of the MP. Numerous studies on
relative clause structure within GB theory have become outdated, given that they rely on
notions or mechanisms which have either been greatly modified or abandoned altogether as
MT has developed (e.g., the notion of Government; Barriers and Blocking Categories; the
ECP; etc.). In addition, the few MT-oriented studies of RCs that have been carried out are
by and large vague with respect to how RC structure is actually derived within the
parameters of the MP; notions which were used in GB have not been translated into the MT
framework, and therefore certain steps in the derivation of RRCs are glossed over or
completely ignored, often making it difficult to evaluate the adequacy of the explanation
being offered (Bianchi 1999; Bianchi 2000b). This lack of clarity is compounded by the
fact that the syntax of adjunction structures in general is poorly understood (Chomsky
1995: 382 fn. 22). A third area of concern is the lack of attention given to the notion of
syntactic change with respect to the syntax of RRCs. This dissertation will provide an
analysis of RRCs in Spanish that addresses these concerns. While the analysis presented
here is not dependent on MT, and in fact can be extended to other syntactic frameworks, it
will be demonstrated that present analysis is compatible with the theoretical workings of
MT and at the same time is able to avoid the complex assumptions and theoretical
machinery necessary to accommodate a HR approach to RRCs.
1.3 Organization of the Dissertation

The topic of relativization is a broad one; therefore, the purpose of this section is two-fold: to define what types of data will be evaluated (and consequently, what will be ignored) and to outline how the dissertation is to be organized. The focus throughout will be on RRCs, with only limited references to other types of relatives (i.e., free relatives, non-restrictive relatives, etc.).

Chapter 1, the current chapter, introduces the topic and describes the background and motivation of the study.

Chapter 2 will provide a detailed explanation of the head raising approach, as presented by those who support it in the literature (especially Kayne 1994; Bianchi 1999; Bianchi 2000b; De Vries 2002). After explaining the head raising approach in detail, it is argued that adopting a head raising approach to RRCs leaves a number of key issues unexplained, requires accepting a number of ad-hoc and unnecessarily complex stipulations, and forces the assumption that semantically equivalent RRC structures (i.e., ‘The man who I saw’ vs. ‘The man that I saw’ vs. ‘The man I saw’) have important differences in their underlying syntactic structure. Adopting a head raising structure also requires that RRCs must be separated from a larger set of complex post-nominal modifiers, minimally including AdjP and PP adjunct modifiers. Following previous literature that discusses HR approaches to RRCs, Chapter 2 uses data primarily from English though the arguments given are in most cases extensible to modern Romance and Germanic languages as well.

Chapter 3 outlines the standard wh-dependency approach to RRCs that was developed within the Government and Binding (GB) framework. This chapter gives an
overview of the basic wh-movement approach and discusses some of the major problems traditionally associated with this approach, including cross-linguistic variation in the CP area of RRCs, the Doubly Filled COMP filter and That-trace effects.

Chapter 4 addresses the diachronic development of RRCs, arguing that RRCs in modern Romance languages, and specifically in Spanish, arose from earlier correlative structures. Previous proposals concerning the transition from correlatives to post-nominal RRCs are presented and then a novel analysis is offered which avoids the problems identified with the previous accounts.

Building on Chapter 4, Chapter 5 explores how postnominal RRCs in Latin, which were introduced by inflected forms of the indefinite pronoun ‘qui’, evolved into RRCs in modern Romance languages, including Spanish. Unlike Latin, Spanish and other Romance languages employ a combination of inflected pronominal forms (such as ‘quien/quienes’ and ‘el/la que’) and uninflected complementizers (i.e., ‘que’) in the CP area of RRCs. Following recent work in the area of grammaticalization by Roberts and Rossou (2003), it is argued that complemetizers evolved from earlier Latin pronominal forms of ‘qui’ via a process of syntactic reanalysis. The nature of this reanalysis sheds light on some of the problems associated with the standard wh-movement analysis of relatives that are outlined in Chapter 3. Chapter 5 also applies the analysis of RRCs presented here to many different types of Spanish RRCs.

1.4 Conclusion

In sum, this proposal has explained the theoretical motivation for the dissertation as well as how it is to be organized. An analysis of RC data from Spanish, English and other languages will show how a wh-movement approach to RRCs which takes into account the
diachronic development of these structures is more adequate than existing head raising proposals (primarily as expressed in Kayne 1994; Bianchi 1999; and Bianchi 2000b).
Chapter 2

The Head Raising Analysis of Restrictive Relative Clauses

2.1 Introduction

Kayne’s HR (HR) analysis of relative clauses (RCs) is elaborated within the larger framework of Antisymmetry Theory (AST) (Kayne 1994). AST differs substantially from both Government and Binding Theory (GB) and Minimalist Theory (MT) and offers a unique and restrictive view of cross-linguistic phrase structure. A comprehensive examination of the core aspects and consequences of AST is outside the scope of this dissertation. Of interest to the present discussion is the head raising analysis of RC structure offered by Kayne within the framework of AST. Chapter 1 identified three problems faced by the HR approach to RC syntax: constituency, coordination and Case marking. With this introduction in mind, Chapter 2 offers a critical review of the HR approach to RC syntax, focusing on restrictive relative clauses (RRCs). Given that the previous literature advocating an HR approach to RCs focuses on English, the majority of the data in Chapter 2 will be in English as well, though the arguments are applicable to Spanish and other Western Romance languages as well. Section 2.2 describes how the HR approach to RRCs works as presented in Kayne (1994). Section 2.3 outlines some criticisms of Kayne’s HR approach identified in Borsley (1997), which was one of the first published articles to offer a detailed presentation of Kayne’s proposal. Section 2.4 presents a critical review of Bianchi’s (1999; 2000b) revision and elaboration of Kayne’s original proposal, including an analysis of Bianchi’s responses to the criticisms offered by Borsley (1997). Section 2.5 presents a critical review of De Vries’ (2002) HR proposal, which
presents some revisions of both Kayne’s (1994) proposals as well as Bianchi’s (1999; 2000b) analysis. Section 2.6 addresses evidence related to idiom chunks and reconstruction, two phenomena that are commonly claimed to provide general support for a head raising analysis of RCs. Section 2.7 gives a summary of the primary weaknesses of the HR approach to RRCs that were identified in sections 2.3, 2.4, 2.5 and 2.6 and offers some concluding remarks about the viability of a HR approach to RC syntax given its shortcomings.

2.2 The Head Raising Approach and Restrictive Relative Clauses: Kayne (1994)

The HR approach to RCs proposed in Kayne (1994) is centered around the idea that RCs are selected by an external determiner (Dx), as opposed to being optional modifiers of a head noun. Let’s consider how such an approach works using the following English examples, which involve relativization of a direct object NP:

(1) The [man who I saw]
(2) The [man that I saw]
(3) The [man I saw]

(1) employs the relativizer ‘who’. Under Kayne’s (1994) head raising analysis, the Dx ‘The’ selects the CP ‘I saw who man’, with ‘who’ acting as a ‘relative determiner’ (Dr) in the NP ‘who man’. The DP ‘who man’ moves to Spec,CP, yielding a word order of ‘The who man I saw’. At this point, the N ‘man’ raises to Spec,DP to produce the correct word order, ‘The man who I saw’. The derivation of (1) is shown in (4):
Now consider (2), which contains the relativizer ‘that’. Under the head raising analysis, the Dx ‘The’ selects the CP ‘that I saw man’. Kayne indicates that there is no determiner for the NP ‘man’\(^9\). The NP ‘man’ moves to Spec,CP, which gives the correct word order of ‘The man that I saw.’ The derivation of (2) is shown in (5):
Kayne’s (1994) presentation of the head raising analysis of RCs is brief and leaves a number of issues unexplained (Borsley 1997; Bianchi 1999; Bianchi 2000b; De Vries 2002):

- Why is the moved element a DP in (1) but an NP in (2) and (3)?
- What is the trigger for the DP ‘who man’ to move to Spec, CP in (1)? What is the trigger for the NP ‘man’ to move to Spec,CP in (1)?
- What is the trigger for the NP ‘man’ to move to Spec,CP in (2) and (3)?
- Given their semantic similarity, why is the derivation shown in (4) different from that shown in (5)?
- If the moved element in (1) is the DP ‘who man’, why do these words not share the same case in languages like Polish and German (see (12) in Chapter 1 for a Polish example).
- Why does a verb like ‘saw’ take a DP complement in (1) but an NP complement in (2) and (3)?

Kayne’s (1994) presentation does not provide clear answers to these and a host of other questions related to the syntax of RCs. Fortunately, subsequent research has addressed some of these issues.
2.3 Borsley’s (1997) Criticism of Kayne (1994)

Borsley (1997) offered a critical review of Kayne’s (1994) HR proposal. On a general level, Borsley argues that Kayne’s approach is plagued by a number of theoretical problems and requires numerous ad hoc mechanisms to achieve descriptive adequacy. Borsley outlines a number of problems with Kayne’s proposal, which are summarized in the sections that follow. Borsley concentrates primarily on English data, so English will be the focus of the section 2.3.

2.3.1 Non-wh-Relatives (Borsley 1997)

Borsley (1997) begins with Kayne’s analysis of ‘Non-wh-Relatives’, or RRCs in which the relativizer is not a wh-word. This includes English ‘that’ relatives (like (2) above) and null relatives (like (3) above). Borsley (1997) shows that the NP trace left behind in (4) behaves exactly like a DP trace with respect to a number of syntactic tests, including binding of pronouns, control over PRO, licensing of parasitic gaps and weak island phenomena. Bianchi (1999; 2000b) and De Vries (2002), who adopt a HR approach to RCs, accept Borsley’s criticism on this point and follow him in assuming that the trace in a sentence like (2) must in fact be a DP trace as opposed to an NP trace. Changing (5) to reflect this assumption yields the derivation shown in (6):
The derivation in (6) shows that the moved element ‘man’ is a DP with a null D° projection as opposed to a bare NP. In this case, the null D° is a ‘relative determiner’ in the same fashion that ‘who’ is a relative determiner in (1). However, Borsley points out two problems with positing the existence of an empty D° projection in sentences like (6). First, it is unclear why an empty D° would be allowed with relativized DPs but not with non-relativized DPs:

(7) *Bill liked [DP e [NP picture]].  ((25) from Borsley 1997)
(8) *[DP e [NP picture]] annoyed Bill.  ((26) from Borsley 1997)

Secondly, Borsley wonders what mechanism ensures that the empty D° node in sentences like (6) is in fact empty, thereby ruling out:

(9) *the the man that I saw  ((30) from Borsley 1997)

In other words, following Kayne’s assumptions would entail treating relativized argument DPs differently from other DPs that occur in non-relativized argument positions with respect to whether the D° node is phonologically empty or filled. Aside from identifying a
structure for RRCs that is compatible with AST, it is not clear that there is a principled reason for treating DP arguments differently in relativized contexts as opposed to non-relativized contexts.

2.3.2 Wh-Relatives (Borsley 1997)

According to Kayne (1994), wh-relatives (i.e., RCs in which the relativizer is a wh-word) are derived as shown in (4), repeated here:

(4)

Borsley argues that there is no reason that the NP in (4) should need to move to the Spec of the relative determiner (Dr). The NP appears to be governed by the determiner ‘who’ as part of the DP ‘who man’. Therefore, once the DP ‘who man’ is moved to Spec,CP there is no obvious need, morphological or otherwise, for the NP ‘man’ to raise to the Spec of the D° ‘who’. This NP movement appears to be an ad hoc way of deriving the correct word order, in which ‘man’ must precede ‘who’. Borsley also highlights the difficulty that
Kayne’s analysis of RCs has in accounting for case marking phenomena in wh-relatives (see Chapter 1).

2.3.3 Stacked RCs (Borsley 1997)

Borsley points out that the head raising analysis has difficulty accounting for stacked RCs (both wh-relatives and non-wh-relatives):

(10) the book that John wrote that Bill burned ((34) from Borsley 1997)
(11) the book which John wrote which Bill burned ((51) from Borsley 1997)

In both (10) and (11), two RCs share the same nominal head, ‘book’. Based on Kayne’s (1994: 92) brief comments about stacked RCs, Borsley assumes that Kayne’s structure for stacked wh-relatives would be something like (12):
In this structure, the verb ‘burned’ appears to take a CP as its complement; however, Borsley points out that ‘burned’ does not allow a CP complement in other contexts:

(13) *Bill burned that John wrote a book.

Therefore, some mechanism would be needed to allow (12) while at the same time ruling out (13). Stated another way, the unacceptability of (13) creates doubt about the viability of the structure given in (12).

The root of the problem with RC stacking under the head raising analysis is the assumption that the nominal head (‘book’ in (10-11)) originates from a position within the RC. This assumption is problematic for stacked RCs, in which multiple RCs share a single nominal head. In contrast, if RCs are viewed as constituents that are independent of their nominal head (i.e., the nominal head is base generated outside of the RC), an impossible
assumption under head raising analyses, then stacked RCs can be treated in much the same fashion as multiple post-nominal PP modifiers in English:

(14) The man [from Spain] [in my linguistics class].
(15) The book [about astronomy] [in my room] [on the desk].

Given these facts, it is unclear how any form of the head raising analysis can reasonably account for the presence of stacked relatives without resorting to inserting additional syntactic categories or positing additional movement (either of which would require independent justification). In contrast, a wh-dependency approach allows RCs to be viewed as self-contained constituents which do not include the nominal head they modify, in much the same way that the bracketed modifiers in (14) and (15) are widely considered to be PP constituents of an external nominal.

2.3.4 Extraposed RCs (Borsley 1997)

Borsley points out that both wh-relatives and non-wh-relatives may be extraposed to the right of their nominal head:

(16) [A man] came into the bar [who we knew in school]. ((54) in Borsley 1997)
(17) I saw [a man] on Monday [who looked like Chomsky]. ((55) in Borsley 1997)

Given that AST bans rightward movement and right-adjunction, Kayne (1994) dismisses previous analyses that involved movement to the right of extraposed constituents. Instead, Kayne (1994) proposes that extraposed RCs are elements that are ‘stranded’ as a result of leftward movement of a syntactic unit consisting of the external determiner (Dr) and the
nominal head:

(18) [A man,] came into the bar [ti who we knew in school]. ((56) in Borsley 1997)
(19) I saw [a man,] on Monday [ti who looked like Chomsky]. ((57 in Borsley 1997)

Kayne sees a parallel between the structures in (18) and (19) and Sportiche’s (1988) proposal that floating quantifiers in examples like (20) below are ‘stranded’ by movement of the subject NP to the left (as opposed to quantifier movement to the right):

(20) Les garçons ont tous lu ce livre.  
    The boys have all read this book.  
    ‘The boys have all read this book.’  ((58) in Borsley 1997).

Kayne believes that a similar approach can be used to explain extraposition of restrictive RCs. The primary problem with such a derivation is that the external determiner ‘a’ and the nominal head ‘man’ in both (18) and (19) do not form a constituent under Kayne’s analysis (Kayne 1994: 124).

To circumvent this problem, Kayne suggests that the indefinite article ‘a’ in sentences like (18) and (19) is not a determiner but a quantifier, which forms a QP constituent with the following NP ‘man’. Following this line of thought, ‘a’ in (18) and (19) is not the external determiner Dx in the ‘CP as a complement of D’ structure that Kayne proposes for RCs; instead, Kayne views ‘a’ as a quantifier that moves to Spec,CP along with the NP traditionally viewed as the ‘head’ of the RC. Therefore, the pre-stranding derivation of (18) would look something like (21-22) below:
If the derivation in (22) is correct, the QP ‘a man’ forms a constituent and therefore would be a suitable target for leftward movement.

As further evidence for this analysis of extraposed relatives, Kayne (1994), citing Ziv and Cole (1974), points out that extraposed RCs with definite NP ‘heads’ are frequently awkward or ungrammatical:

(23) ??The man just walked in who we knew in high school. ((60) from Borsley 1997)
(24) ??I saw the man on Monday who looked like Chomsky.

Kayne proposes that (23) and (24) are questionable because the external D° ‘the’ and the NP ‘man’ do not form a constituent. This contrasts with Kayne’s analysis of (18) and (19), in which the indefinite article ‘a’ is analyzed as a quantifier that forms a QP constituent ‘a man’. Following Perlmutter (1970), Kayne argues that there is no intrinsic reason to take English ‘a’ to be of the same syntactic category at English ‘the’; this leads Kayne to
analyze ‘a’ as a quantifier in (18) and (19) while ‘the’ is analyzed as a determiner in (23) and (24).

Borlsey alludes to one problem with Kayne’s extraposition analysis by stating that previous research (Rochemont and Culicover 1990) indicates that the difference between sentences like (18) and (23) may be due to semantic and pragmatic factors rather than different constituent structures. Though not mentioned by Borsley, Rochemont (1986) and Huck and Na (1990) also argue that pragmatic and discourse factors account for the grammaticality of extraposed RCs with definite NP heads. Furthermore, not all extraposed RCs with definite NP heads appear to be awkward or ungrammatical. Alexiadou et. al. (2000: 20) provides the following examples:

(25) we will discuss [the claim] tomorrow [that John made yesterday]
(26) we will see [the boy] tomorrow [with whose mother I spoke]

Noting that under Kayne’s (1994) approach the string ‘boy with whose mother’ forms a constituent within the RC CP in (26), Alexiadou et. al. (2002: 19-20) conclude that “Kayne’s analysis provides the ‘wrong’ constituency for extraposition phenomena.”

In addition, Rochemont and Culicover (1990) provide the following example using deictic ‘that’ which introduces a definite NP:

(27) [That man] just came into the room [that I was telling you about]

Given (25-27), it seems that any adequate theory of RC extraposition would have to account for RCs with both definite and indefinite head nouns. Kayne’s ‘stranding’ approach appears to incorrectly rule out (25-27), since English ‘the’ and ‘that’ cannot reasonably be analyzed as quantifiers. These facts are problematic for Kayne’s ‘stranding’ analysis of extraposed relatives under HR.
Borsley identifies two additional problems with Kayne’s analysis of RC extraposition. The derivation in (22) assumes that the relative pronoun ‘who’ (viewed as a relative determiner in Kayne’s analysis) can have a QP trace as its complement. However, interrogative ‘who’ cannot have an overt QP complement:

(28) *Who a man came into the bar? ((61) in Borsley)

An second problem identified by Borsley is that there does not appear to be any suitable landing site for the constituents that must move leftward in order to ‘strand’ extraposed RCs. Borsley notes that extraposed RCs normally appear in sentence final position, which requires that all other sentence constituents move to positions to the left of the extraposed RC. Based on data from English and French, Borsley (1997: 642) concludes that Kayne’s ‘stranding’ proposal for extraposed RCs “requires a significantly more complex conception of clause structure than that standardly assumed by Chomsky (1993), which is already quite complex.” In other words, one would have to posit the existence of additional maximal projections in the functional structure of a clause in order to provide the necessary landing sites for constituents that would be moved as part of the process of ‘stranding’ extraposed RCs. Any maximal projections created for this purpose would require independent justification outside of relativized contexts. 

As with RC stacking (see 2.3.3) and RC coordination (see 1.1.3), the major problems with Kayne’s (1994) account of extraposed RCs arise from the fact that under HR the head noun of the RC is assumed to originate within the RC. RCs can be stacked, conjoined and extraposed, all of which are processes that indicate that RCs are constituents with some degree of independence from the nominal head that they modify. Given the constituency facts for RCs one is forced to assume under head raising (see section 1.1.2), it seems clear that numerous additional mechanisms are necessary for Kayne’s head raising

2.4 Bianchi (1999) and (2000b)

In response to Borsley (1997), Bianchi (2000b) offers a revised version of Kayne’s (1994) analysis which attempts to address some of the criticisms of the HR approach described in Borsley (1997). Bianchi is far more elaborate than Kayne (1994) and highlights a number of specific elements about RC syntax which Kayne did not address at all in his original proposal. However, it will be shown that the restrictive nature of the HR approach, which fits within Kayne’s larger AST framework, forces Bianchi (2000b) to rely on numerous ad hoc mechanisms in order for her revision of Kayne’s head raising analysis to achieve observational adequacy.

2.4.1 The D + CP complementation structure for RCs under HR

In contrast with most previous analyses of RC syntax, the central premise of Kayne’s head raising analysis of RCs is that an external determiner selects a CP complement, forming a D + CP structure:

(29)
What evidence is there that a determiner (D°) is able to select a CP as its complement?

Bianchi identifies structures in Spanish and French which she believes provide a precedent for the D + CP structure\textsuperscript{16}.

\begin{align*}
(30) \quad \text{No me gusta (el) que tú actués así.} \\
\text{No to-me pleases the that you behave like-that} \\
\text{I don’t like that you behave like that. ((18b) in Bianchi 1999)}
\end{align*}

\begin{align*}
(31) \quad \text{No me gusta el hecho que tú actués así.} \\
\text{No to-me pleases the fact that you behave like-that} \\
\text{I don’t like the fact that you behave like that. (Paraphrase of (30))}
\end{align*}

According to Bianchi, the determiner ‘el’ selects the CP ‘que tú actués así’ as its complement. Bianchi acknowledges that the determiner ‘el’ is optional in (30)\textsuperscript{17}. The fact that the determiner is optional in (30) and that (31) is semantically equivalent to (30) suggests an alternative structure for (30): there is a phonologically null NP projection following the determiner ‘el’ which selects for the CP in much the same way that the NP ‘hecho’ selects the relevant CP in (31)\textsuperscript{18}. Hence, it is unclear that (30) involves a ‘D + CP’ complementation structure as proposed by Bianchi.

Citing Zaring (1992), Bianchi also gives the following French sentence as an example of a ‘D + CP’ complementation structure:

\begin{align*}
(32) \quad \text{Je veillerai [PP à [DP ce [CP que [il se couche de bonne heure]]]}} \\
\text{I will-see to it that he self goes-to-bed of good hour} \\
\text{I will see to it that he goes to bed early. ((19) in Bianchi 1999: 40)}
\end{align*}

Following Zaring (1992), Bianchi analyzes (32) as comprising an instance of a determiner (‘ce’) selecting a CP complement. Unlike the Spanish example in (30), (32) becomes ungrammatical if the clausal determiner ‘ce’ is omitted. This example in Zaring (1992) was also analyzed in Bruchert (1993), who reached a different conclusion about its structure. Bruchert (1993) rejects a ‘D + CP’ analysis of (32) and instead proposes that the determiner ‘ce’ selects a phonologically empty NP (\textit{pro}) and that this NP in turn selects the relevant
This proposal is almost identical to the account of (30) in Spanish given above, which was reached independently. Based on this evidence, it seems likely that (30) and (32) involve NP elision as opposed to the ‘D + CP’ complementation structure suggested by Bianchi (1999).

Bianchi (1999: 40) also provides several examples in which a determiner appears to be ‘licensed by the presence of a restrictive relative’:

(33) a. the Paris *(I love)  
   b. the three books of John’s *(that I read)  
   c. the four of the boys *(that came to dinner) ((21) in Bianchi 1999)

However, Bianchi recognizes Jackendoff’s (1977: 177-182) observation that these determiners may also be licensed by other modifiers, including prepositional phrases and adjectives:

(34) a. the Paris of my youth (Jackendoff 1977)  
   b. the Paris of my imagination  
   c. the three books of John’s on the table (Jackendoff 1977)  
   d. the three math books of John’s  
   e. the usual four of the boys (Jackendoff 1977)  
   f. the four of the boys in my church choir

This suggests that the relationship between determiners and various types of nominal modifiers is the same in sentences like (33) and (34). In fact, Bianchi (1999: 280, fn. 17) recognizes the parallel between (33) and (34) and claims that Kayne’s analysis can capture this similarity since it applies to other restrictive modifiers as well as RCs. However, this claim seems odd since under the head raising analysis a determiner (Dx) selects a CP complement, while other types of nominal modifiers are not directly selected by the determiner. In Chapter 3, it will be argued that a wh-dependency analysis of RC syntax, in which RCs are viewed as self-contained constituents that do not include the nominal head,
allows for a more uniform treatment of complex post-nominal modifiers (such as PPs) in English, Spanish and other related languages.

The evidence provided here suggests that Bianchi’s claim (1999: 40) that the ‘D + CP’ complementation structure employed in the HR approach to RCs ‘is supported by independent evidence’ is questionable. However, the lack of a well-grounded motivation for a ‘D + CP’ complementation structure does not in and of itself mean that the head raising analysis of RCs is incorrect. The sections that follow will show that accepting the ‘D + CP’ head raising analysis for RCs is flawed in a number of ways and requires the use of a large number of ad hoc stipulations and movement transformations in order to achieve descriptive adequacy.

2.4.2 Non-wh-relatives under HR (Bianchi 1999 and 2000b)

Bianchi (1999; 2000b) follows Kayne in assuming that non-wh-relatives, such as English that-relatives, are derived differently from wh-relatives in spite of their semantic equivalence. As stated in Section 2.3.1, Bianchi accepts Borsley’s (1997) assertion that the trace in ‘that’ relatives in English must be a DP trace (contra Kayne (1994)) as shown in (6), restated below:
The structure in (6) suggests that the NP ‘picture’ is associated with two distinct DP projections: the external DP (Dx) and the RC-internal DP (Dr). The RC-internal DP in (6) consists of an empty D° node with the NP ‘man’ as its sister. With respect to this empty D° node, Bianchi seeks to address three questions raised by Borsley (1997):

(35) How is the empty D° licensed?
(36) Why isn’t an empty D° licensed in non-relative contexts?21
(37) What is the relation between the external D° and the relative NP?22

The answer to (35) should also provide an answer to (36). Bianchi’s answer to (35) requires accepting a complex set of assumptions and leads to a problem involving Case assignment. Bianchi’s argument goes as follows: in (6), the DP ‘e picture’ undergoes movement to Spec,CP. Since the moved RC-internal DP is located in Spec,CP, the CP that is located between the Dx ‘the’ and the Dr ‘e’ is not a barrier for the purposes of Relativized Minimality (Rizzi 1990). Bianchi therefore states that Dx and Dr are in a ‘strictly local configuration’, and thus can ‘establish a licensing relation’. More specifically, Bianchi
asserts that the empty RC-internal D° position is licensed through ‘abstract incorporation’ to the external D°.

According to Bianchi, abstract incorporation of the RC-internal D° to the external D° is possible because both determiners are of the same category and share the same phi-features (which presumably are the same phi-features as those of the nominal head which is the sister of the RC-internal D°). Bianchi also asserts that the RC-internal D° is underspecified for definiteness, though this assumption is not independently justified. Therefore, Bianchi assumes that the RC-internal DP will take on whatever definiteness feature is present in the external D°. The proposed trigger for abstract incorporation is an economy condition:

\[(38) \quad E\text{conomy of Representation} \quad ((8) \text{ in Bianchi 2000b: 127})\]

Incorporate a functional head to a host whose feature structure is consistent with its own.

Bianchi asserts that (38) is ‘equivalent’ to Chomsky and Lasnik’s (1977: 446) Doubly Filled Comp Filter\textsuperscript{23}, which acts as a trigger for deletion.

Let’s briefly summarize at this point: in response to (35), Bianchi argues that the empty RC-internal D° is licensed by abstract incorporation to the external D°. As for (36), Bianchi argues that in non-relativized contexts in which a DP is locally related to a lexical head, an empty determiner cannot be licensed because there is no candidate host with compatible feature structure (i.e., an equivalent to the external determiner in RCs) into which the empty D° can abstractly incorporate. This causes (39) to be ungrammatical, as the empty D° cannot abstractly incorporate and therefore is not licensed:
However, according to Bianchi’s description of the process of abstract incorporation, only categories which have identical feature structures can merge via abstract incorporation. Given this requirement, the Dr and Dx projections should not be able to merge via abstract incorporation their Case features do not match, though they may coincide by accident (De Vries 2002: 115). The RC-internal DP will receive Case based on its original position in the RC, while the external DP will receive Case based on its position in the matrix clause. In order for abstract incorporation to occur, Bianchi assumes that the Case feature of the RC-internal DP is checked and then erased before it raises to Spec,CP (De Vries 2002: 115). Some additional mechanism is needed to allow Case checking and subsequent erasure of checked Case in relativized argument DPs and at the same time prevent such erasure of checked Case in non-relativized DPs. It is not clear how Bianchi achieves this in her analysis.

Having addressed (35) and (36), Bianchi (2000b) now turns to (37): What is the relationship between the external D° and the relative NP? Bianchi recognizes that even though the external D° and the NP head (i.e., ‘the man’ in ‘the man who I saw’) do not form a constituent under HR, it is essential for the head raising analysis that these two categories appear in a local configuration, so that they ‘look like a constituent (Bianchi 2000b; 127). As was the case with the earlier example of abstract incorporation, Bianchi’s analysis of the syntactic relationship between Dx and the relative NP requires accepting a complex set of assumptions, many of which do not appear to be independently justified in other (non-relative) structures.
As pointed out by Borsley (1997), it is unclear why the NP head would have to be governed by the external determiner given that it is already governed by the relative determiner in its RC-internal base position. Bianchi’s (2000b: 127) proposal is that the raising of the NP ‘head’ is triggered by feature checking requirements of the external D°. Bianchi’s assumption is that even though Dx selects a CP complement, Dx is still a ‘nominal determiner’ as opposed to a ‘clausal determiner’\(^{24}\). Nominal determiners are seen as bearing an [N] feature, while clausal determiners are seen as bearing a [C] feature. Thus, the crucial difference between nominal determiners and clausal determiners, according to Bianchi (2000b) is related to what feature they carry ([N] or [C]) and not to what category they select ([NP] or [CP]), since nominal determiners can evidently select either NP or CP complements. Therefore, nominal determiners must have their [N] feature checked by a [+N] category somewhere in their local domain, while clausal determiners would have their [+C] features checked by a [+C] category somewhere in their local domain\(^{25}\). Unlike clausal determiners\(^{26}\), the external determiner under the HR approach, which select a CP relative complement, is viewed as a nominal determiner in much the same way that determiners that select NP complements are viewed as nominal determiners. Therefore, Bianchi answers (37) by stating that the nominal head of RCs is forced to move to a position within the local domain of the external determiner (Dx) in order to check off the [N] feature that is present in Dx, which is viewed as a nominal determiner as opposed to a clausal determiner.

However, this explanation leaves several questions unanswered. The existence of determiners that select CP complements is questionable (see Section 2.4.1 and Borsley 1997: 630-631). Even if one accepts that ‘D + CP’ complementation structures do exist, one would logically assume that nominal determiners would select NP complements while
clausal determiners would select CP complements. Yet, Bianchi’s (2000b) analysis
assumes that nominal determiners can select either NP complements ([the] + [dog]) or CP
complements ([the] + [I saw e man]). It is not clear from Bianchi’s account whether clausal
determiners\(^{27}\) share this flexibility and likewise have the capability to select either NP
complements or CP complements. Following the logic used for Bianchi’s analysis of
nominal determiners that select CP complements in RC structures, it is reasonable to
assume that if clausal determiners were allowed to select NP complements, then some CP
category would need to move into the checking domain of the clausal determiner in order to
check its \([C]\) feature. It is difficult to imagine such a configuration.

Another problem with Bianchi’s (2000b) answer to (37) relates to the \([+N]\) feature
carried by the RC-internal NP and its ability to check off the \([N]\) feature of multiple
determiners in a derivation. Typically, each NP in a given derivation is associated with one
and only one DP, normally the DP that selects it. The \([+N]\) feature on the NP checks the
\([N]\) feature of the DP in its local domain. However, under Bianchi’s analysis, the RC-
internal NP is associated with two distinct DP projections, the relative determiner (Dr) and
the external determiner (Dx). If the \([+N]\) feature is allowed to check the \([N]\) feature of both
Dr (from its base position) and Dx (from its post-movement position in Spec,CP), then
some mechanism is necessary to prevent NPs from licensing multiple determiners in non-
relative contexts:

\[
\begin{align*}
(40) & \quad *\text{The the man bought a new house.} \\
(41) & \quad *\text{It is the car}_k \text{ in the } t_k.
\end{align*}
\]

If the \([+N]\) feature of NPs can check off the \([N]\) feature of multiple determiners, then what
rules out a sentence like (40)? Following Bianchi’s line of reasoning about RCs, in (41) the
NP ‘car’ should be able to check off the \([N]\) feature of the rightmost determiner ‘the’. At
this point, the [N] feature on the leftmost determiner ‘the’ should trigger movement of the NP car to Spec,PP, where ‘car’ will be in the local domain of the leftmost DP ‘the’ and is thus able to check its [N] feature. The problem, then, under the head raising analysis of RCs is that one NP is responsible for checking the [N] feature of two different DP projections. Such an analysis clearly requires some additional mechanism to avoid overgenerating additional DP projections in unlicensed positions.

In conclusion, Bianchi’s (1999; 2000b) revision of Kayne’s (1994) analysis of non-wh-relatives addresses some of the problems that have been identified with Kayne’s original HR proposal for RCs, yet still requires several stipulative mechanisms and assumptions in order to achieve descriptive adequacy.

2.4.3 Wh-relatives under HR (Bianchi 1999 and 2000b)

Following Kayne’s original proposal, Bianchi assumes that wh-relatives and non-wh-relatives are assigned different structures in spite of their semantic equivalence. Under HR analyses, wh-relative pronouns are in fact considered to be ‘relative determiners’ (Dr). These wh-relative-determiners have the same relationship to the nominal RC head as the null relative determiners that Bianchi proposed for non-wh-relatives (see Section 2.4.2). Kayne’s (1994) proposed structure for wh-relatives is shown in (4), repeated below.
The derivation in (4) shows two movement transformations: movement of the DP ‘who man’ to Spec,CP and movement of the NP ‘man’ to Spec,DP. However, Bianchi (1999; 2000b) proposes a different analysis for wh-relatives than that presented in Kayne (1994). Bianchi (1999) argues extensively that NPs like ‘man’ cannot move to Spec,DP of Dr as shown in (4). Bianchi’s revision of (4) is shown in (42):
Bianchi proposes that the relativized DP in wh-relatives like (42) moves to the specifier position of some (unnamed) functional head in the C° system, labeled XP in (42). Then, the NP head ‘man’ raises to Spec,CP, a position within the minimal domain of the external determiner (Dx).

Bianchi’s (1999; 2000b) revision of Kayne’s analysis of wh-relatives does not address the core problems it faced. Under (42), the use of an undefined XP category in the C° system as a landing for moved elements appears to be a mechanism designed to leave Spec,CP open as a landing site for the subsequent movement of the head noun (i.e., ‘man’ in (42)), which will allow ‘man’ to fall within the minimal domain of the external head Dx. The configuration in (42) also does not address the basic underlying problem that under HR one NP (‘man’ in (42)) is responsible for checking the [N] features of two separate
determiners (Dr and Dx); this problem was described in detail in the previous section on non-wh-relatives (Section 2.4.2).

De Vries (2002: 114-116) identifies some additional problems with Bianchi’s analysis. It is unclear why semantically equivalent sentences (‘The man who I saw’ vs. ‘The man that I saw’) should have such drastically different derivations. Also unclear is why wh-relatives make use of a split CP-projection while –that relatives do not. De Vries (2002) notes a further problem with respect to languages in which a relative pronoun and a complementizer co-occur, such as Middle English and Dutch (i.e., equivalent to ‘The man who that I saw’). Note that in (42), the complementizer (C°) would precede the relative pronoun (‘who’), which is the opposite of the order which is attested in such languages

Despite these shortcomings, Bianchi claims that the revised analysis in (42) will have the advantage of overcoming several of Borsley’s (1997) objections about the HR approach vis a vis overt Case marking of relative pronouns, RC stacking, RC coordination and RC extraposition. However, the following sections will demonstrate that Bianchi’s analysis of these RC phenomena under her revision of Kayne (1994) faces many of the same problems described above which are endemic to the HR approach to RCs in general.
2.4.4 Case marking patterns in wh-relatives under HR

Bianchi addresses Borsley’s (1997) criticism about languages that have relativizers with overt Case marking (see also section 1.1.4). Consider example (12) from Chapter 1, repeated below:

(12) Widziałem tego pana, który zbił ci szybe.
saw-1sg the-ACC man-ACC who-NOM broke your glass
I saw the man who broke your glass.

Borsley argues that under the head raising analysis, the NP ‘pana’ should receive nominative case from its base generated position within the RC as a complement of the relative determiner ‘który’. Yet ‘pana’ shares the accusative Case of the external determiner, ‘tego’. Since NPs and their traces normally share the same Case, Borsley argues that some mechanism is necessary to prevent the moved NP ‘pana’ from inheriting nominative case from its trace in (12).

Bianchi (2000b: 129) assumes, citing Giusti (1993), that being Case-marked is a property of determiners rather than nominals; nominals are viewed as agreeing morphologically with a (Case-marked) determiner within whose minimal domain they are located. In (12), the external determiner ‘tego’ bears accusative Case via its role in the matrix clause, while the relative determiner ‘który’ bears nominative case via its role in the RC. Under HR, the NP ‘pana’ is base generated in the minimal domain (Manzini 1994) of ‘który’ but is eventually moved to a higher position which falls within the minimal domain of the external determiner ‘tego’. Hence it is from this latter position (Spec,CP) within the minimal domain of ‘tego’ that ‘pana’ obtains its surface accusative Case agreement features. One is forced to assume that the nominative case feature that the NP ‘pana’ received from its original (relative) D° ‘który’ was either erased or superceded by the
accusative Case features of the (external) D\(^o\) ‘tego’. If one accepts Bianchi’s basic assumptions about the structure of RCs, then her analysis of Case marking in sentences like (12) can be understood. However, Bianchi’s explanation of Case marking in response to Borsley’s (1997) criticism faces all of the same fundamental problems that the general HR approach to wh-relatives and non-wh-relatives faces, as described above in 2.4.2 and 2.4.3.

2.4.5 Stacked Relative Clauses under Head Raising

Bianchi (2000b) asserts that her modifications to Kayne’s analysis of non-wh-relatives and wh-relatives provide answers to the primary objections raised by Borsley (1997). One area she addresses is RC stacking, as exemplified in (10) and (11), restated below:

(10) the book that John wrote that Bill burned ((34) from Borsley)

(11) the book which John wrote which Bill burned ((51) from Borsley)

Given that Bianchi assumes that non-wh-relatives (like those in (10)) and wh-relatives (like those in (11)) have a different constituent structure, she is also forced to assume that the two types of relatives behave differently with respect to stacking. Adopting a possibility first raised in Borsley (1997)\(^{31}\), Bianchi proposes that the ‘head’ of the rightmost (outer) stacked RC is a DP that includes the leftmost (inner) RC. Thus, the derivation for (10) is shown in (43):
In simple non-wh-relatives, Bianchi (2000b) proposes that a phonologically null RC-internal D° position (Dr) is licensed through a process of ‘abstract incorporation’ to the external D° (Dx) (see Section 2.4.2; see (12)). In (43), however, there are actually two empty determiner positions which need to be licensed. Bianchi proposes that this is accomplished via a process of ‘double abstract incorporation’. First, the relative determiner (Dr) that selects the NP ‘book’ as its complement abstractly incorporates into the empty head D° (the lowest Dx) that originated as the complement of the verb ‘burned’. Then, the resulting complex head abstractly incorporates into the highest D° node (the Dx ‘the’), with both instances of abstract incorporation being triggered by the economy principle stated in (38).

However, Bianchi’s proposal regarding ‘double abstract incorporation’ for stacked non-wh-relatives faces the same problems that confront the notion of abstract incorporation in general, which were discussed earlier. In addition, in (43) it appears that either external
Determiners (Dx) or relative determiners (Dr) are capable of abstractly incorporating into other available $D^o$ heads, a fact which was not clear from Bianchi’s discussion of non-stacked non-wh-relatives. Therefore, it is not clear how this proposal will prevent NPs from licensing multiple determiners in non-relativized contexts, given that determiners appear to be able to abstractly incorporate into one another rather freely.

Now let’s consider stacked wh-relatives. Bianchi (2000b: 131) begins by stating that the derivation for stacked wh-relatives is more complex than that for non-wh-relatives. Bianchi’s derivation of stacked wh-relatives is shown in (44):
Let’s trace the steps that occur in (44):

- The complement of the verb ‘wrote’ is the DP ‘which book’. This DP raises to the specifier position of some unspecified functional projection in the C° system of the inner RC.
- The NP ‘book’ then strands the Dr ‘which’ and moves to Spec, CP of the inner RC.
- The complement of the verb ‘burned’ is a DP consisting of a ‘D + CP’ relative construction that contains a Dx ‘which’ and the inner RC CP described above. This DP raises to some unspecified node (XP) in the C° system of the outer RC.
- The inner RC CP then raises from its position as a sister to the lower determiner ‘which’ to the specifier position of the CP that is a sister to the external determiner ‘the’.

This derivation yields that correct surface word order for (11). Note that the NP ‘book’ in (44) has ended up checking the [N] features of three separate determiners. First, it checks the [N] feature of the D° ‘which’ that selected ‘book’ as its NP complement. Second, it moves to Spec, CP of the inner CP, where it falls within the minimal domain of the lower Dx ‘which’, and therefore it able to check off the [N] feature of the Dx ‘which’. Finally, ‘book’ ends up within the minimal domain of the Dx ‘the’, and is therefore able to check off the [N] feature of the D° ‘the’.
the [N] feature of ‘the’ as well. Since both of the Dx nodes (which Bianchi views as
nominal determiners) in (44) select CP complements which are incapable of checking [N]
features, it is the need for this feature checking that drives movement in (44).

The derivations required for stacked non-wh-relatives and wh-relatives in Bianchi
(1999;2000b) are extremely complex and require accepting numerous assumptions about
the nature of determiners (nominal versus clausal determiners), the types of complements
they may select (NP versus CP complements) and their ability to ‘share’ a single NP (i.e.,
‘book’ in (44)) for the purposes of checking [N] features that they are said to contain. In
addition, some may view the fact that two semantically equivalent sentences like (10) and
(11) have such drastically different derivational structures. As was mentioned earlier, the
highly complex nature of (43) and (44) is necessitated by the fact that HR analyses assume
that the nominal heads of RCs are base generated within the RCs that modify them. It is
clear from the discussion above that this core assumption necessitates the use of additional
syntactic categories and mechanisms in order to achieve some level of descriptive validity
with respect to stacked RCs. In contrast, a general wh-dependency approach to the syntax
of RCs avoids this key problem and allows RCs to be analyzed as self-contained
constituent nominal modifiers in much the same fashion as post-nominal PP modifiers are
viewed.
2.4.6 Coordination of Relative Clauses under Head Raising

The topic of coordinated RCs under the head raising analysis was briefly introduced in section 1.1.3. Given that there is no widely accepted approach to coordination in general, coordination presents problems for both the HR and wh-dependency approaches to RC syntax (Alexiadou et. al. 2000). In addition, RCs are involved in three distinct types of coordinated structures: conjoined RRCs, hydras (Link (1984)), and RRCs with split antecedents (Perlmutter and Ross 1970):

(45) **Conjoined RRCs**
   a. The picture [which Bill liked] and [which Mary hated].
      ((24) in Bianchi (2000b), (49) in Borsley (1997))
   b. The picture [that Bill liked] and [that Mary hated].
      ((25) in Bianchi (2000b))

(46) **Hydras (Link 1984)**
   a. [The girl] and [the boy] who met at the coffee shop.
   b. [The man] and [the woman] who were arrested.
      ((39a) from Alexiadou et. al. 2000)

(47) **RRCs with split antecedents (Perlmutter and Ross 1970)**
   a. John saw [a man] and Mary saw [a woman] who were wanted by the police.
      ((41) in Alexiadou et. al. 2000)
   b. John bought [a calendar] and Mary bought [a puzzle] that were on sale in the gift shop.

As was the case with stacked and extraposed RCs, data like (45-47) suggest that there is at least some degree of independence between nominal heads and the RCs that modify them. This fundamental fact is problematic for HR accounts of RC structure, given their basic assumption that nominal RC heads are base generated within the RC. Circumventing this problem leads to complex accounts of how coordinated RC structures are derived under the HR model.
Let’s begin with Bianchi’s analysis of conjoined wh-relatives, like the example in (45a). Based on her proposed structure for wh-relatives shown in (42), Bianchi states that conjoined wh-relatives can be handled in a straightforward manner: coordination of two XP heads with across the board (ATB) extraction of the NP ‘head’ from Spec,XP (Bianchi 2000b: 132). It is unclear why XP (as opposed to CP) is chosen as the conjoined projection under this analysis. This analysis also relies on Bianchi’s account of simple wh-relatives, which was shown to be complex and problematic (see section 2.4.3)

Now let’s move on to Bianchi’s analysis of coordinated non-wh-relatives, like the example in (45b). Once again, Bianchi is forced to assume that coordinated non-wh-relatives have a drastically different derivation as compared to coordinated wh-relatives. Relying on the null operator analysis of ATB gaps proposed in Munn (1992) and modified in Kayne (1994), Bianchi proposes that the external determiner in (45b) ‘the’ selects two conjoined CP complements. The specifier position of the first conjunct contains the relative DP (Dr), while the specifier position of the second conjunct contains a null operator which fulfills the same role played by Dr in the first conjunct.

One problem with Bianchi’s account of coordinated wh-relatives and non-wh-relatives is that two seemingly equivalent structures ((45a) and (45b)) are assigned such radically different derivations under this analysis. Bianchi’s analysis also assumes that RCs are not constituents, which presents a problem because it is normally assumed that only constituents can be conjoined32. In addition, her analysis relies on the basic structure Bianchi provided for simple wh-relatives and non-wh-relatives, which were shown to be problematic and highly complex in their own right (see Section 2.4.2). In short, Bianchi’s proposals for coordinated wh-relatives and non-wh-relatives appear to be tentative and leave several questions unanswered33.
Bianchi (1995: 103-106) also considers an Italian example of Link’s (1984) hydas, similar to the English examples given in (46). She considers several possible analyses, but is unable to identify any analysis of hydas under HR that conforms to the strict phrase structure rules imposed by the LCA and at the same time achieves some level of observational adequacy. RRCs with split antecedents like the examples in (47) are not addressed by Bianchi (1999; 2000b) or Kayne (1994)\(^3\). Indeed, it is unclear how sentences like (47a) could ever be generated under a HR approach, given that such an approach would require the assumption that two nominal elements (‘man’ and ‘woman’) would need to be base generated in the lone RC (‘who were wanted by the police’) and then later split apart from each other and distributed across two clausal complements after undergoing raising.

To be fair, one might ask how a wh-dependency approach to RCs could alleviate any of these problems. Under a wh-dependency approach, RCs are viewed as self-contained constituents that serve as nominal modifiers, in much the same way that post-nominal PP modifiers are considered to be constituents (see (14-15) above). In fact, similar to RCs, post-nominal PP modifiers may also be conjoined and modify conjoined antecedents\(^3\):

\[
\begin{align*}
(48) & \text{Conjoined PPs (analogous to conjoined RCs in (45))} \\
& \text{a. The emergency exits next to the restrooms and at the end of the hallway should remain unlocked at all times.} \\
& \text{b. The closed the building because of flooding problems in the basement and on the first floor.}
\end{align*}
\]

\[
\begin{align*}
(49) & \text{Conjoined antecedents (analogous to the Hydas in (46))} \\
& \text{a. We just hired a man and a woman from Pennsylvania.} \\
& \text{b. He showed me a picture of a man and a woman in a convertible.}
\end{align*}
\]

This parallel between post-nominal PP modifiers and RC modifiers would allow a uniform treatment the interaction between coordination and complex post-nominal modifiers, something not possible if one assumes a HR approach to RCs. With respect to coordination phenomena, the crucial difference between HR analyses and wh-dependency analyses is
that wh-dependency analyses assume that the nominal head of the RC is base generated outside of the RC, which (on a general level) allows for structures in which one RC modifies multiple nominal heads (as in (46) and (47)) or in which multiple RC modifiers modify one nominal head (as in (45)). In contrast, HR analyses assume that nominal heads are base generated inside of the RCs that modify them, which forces the use of additional mechanisms to explain the one-to-many and many-to-one correspondences that can occur between RCs and the NPs they modify.

To summarize, our general lack of understanding of the syntax and semantics of coordination in general poses problems for both wh-dependency and HR accounts of the interaction between coordination and RCs. However, unlike wh-dependency approaches, HR analyses must also confront a host of problems associated with the assumption that nominal heads are base-generated inside of the RCs that modify them.

2.4.7 Extraposition of Relative Clauses under Head Raising

Section 2.3.4 outlined several facts that cast doubt on Kayne’s stranding analysis of extraposed RCs. Chief among these was evidence that extraposed RRCs may have either definite or indefinite head nouns, while Kayne’s analysis assumes that extraposition may only occur if the head noun is indefinite. This issue is not addressed by Bianchi (2000b), who offers some tentative suggestions related to how a stranding approach to extraposed might be modified. However, Bianchi (2000b) ultimately concludes that the stranding approach to extraposed relatives leaves a number of questions unanswered and calls for further research to examine how a more satisfactory stranding approach might be implemented.
Extraposition is not limited to RCs; rather, it is a common process that occurs with a large variety of syntactic constructions. Therefore, a workable theory of extraposed RCs should not be dependent on any particular theory of RC structure, since extraposition affects many other constructions as well. For example, in addition to RCs, post-nominal PP modifiers may also be extraposed from NPs they modify:\(^{37}\):

(50)  
  a. I read a book last night about the geography of Middle Earth.  
  b. I met a man yesterday from Venice.  
  c. A man walked in from India. ((56a) in Guéron 1980)

The logical assumption is that whatever general process accounts for extraposition of PPs will also be valid for other post-nominal modifiers, namely RCs. A general wh-dependency approach to RCs allows them, like PPs, to be analyzed as constituents that modify (but are separate from) the head NP. In contrast, the stranding analysis as outlined in Kayne (1994) and Bianchi (2000b) entails treating the extraposition of RCs differently from other extraposition phenomena.

2.5 De Vries (2002)

Like Bianchi, De Vries (2002) also defends a HR approach to the syntax of RCs. However, De Vries disagrees with some of the specifics of the proposals of Bianchi (1999; 2000b) and Kayne (1994) and offers an alternative account of RC syntax under a HR approach. Several of De Vries objections to Bianchi’s proposals were mentioned throughout section 2.4, and are summarized below (De Vries 2002: 114-116):

- It is undesirable for wh-relatives and non-wh-relatives, given their semantic equivalence, to be assigned radically different phrase structures.

- With respect to non-wh-relatives, Bianchi’s ‘abstract incorporation’ process is problematic because the relative determiner (Dr) and the external determiner (Dx) do not agree in case (unless by accident).
• The nature of the XP projection in Bianchi’s (2000) analysis of wh-relatives is unclear, including what projection XP is and what triggers movement of the relative DP (i.e., ‘who man’ in (42)) to Spec,XP.

• Bianchi’s (2000) analysis of wh-relatives predicts the wrong word order for languages that have co-occurring relative pronouns and complementizers (See Section 2.4.3).

In response to these objections, De Vries develops an alternative head raising analysis of RCs that attempts to avoid some of the shortcomings of earlier HR proposals. De Vries’ (2002) is ambitious and impressive in its depth, covering data from hundreds of languages and many different types of relative structures, including post-nominal and pre-nominal relatives, correlatives, and internally headed relatives (and variations thereof). Unfortunately, De Vries’ analysis of post-nominal wh-relatives (as well as non-wh-relatives) suffers from several problems which cast doubt on the validity of the analysis. What follows is an in-depth presentation of De Vries’ approach and a critical analysis of some of its shortcomings.

2.5.1 Wh-relatives

After providing some basic evidence that both wh-relatives and non-wh-relatives meet the basic criteria for wh-movement, De Vries begins by presenting his theory of the manner in which wh-relatives are derived using a HR approach. In broad terms, De Vries’ analysis relies on the process of feature checking of phi-features and Case features to drive the necessary movements of the relative DP (‘the [I saw who man]’) and the head noun (‘the [man who I saw]’) to their proper surface structure positions. Before examining De Vries’ proposed derivation for wh-relatives, it is first necessary to point out some of the assumptions he follows (De Vries 2002: 116-130):
(51)  

a. All post-nominal relatives undergo wh-movement of a relative pronoun.  
b. Wh-relative pronouns are determiners.  
c. Nominal arguments are DPs. DPs are responsible for checking Case features of other functional projections (i.e., AgrO, AgrS, etc.)  
d. All D and N projections bear both phi-features and Case features. All N and D projections must have their phi-features and Case-features checked at some point in the derivation (i.e., there are a total of four features that need to be checked: phi-features on N, Case features on N, phi-features on D, Case features on D).  
e. Checking of formal features may take place in two ways:  
i. Via a spec-head relation  
ii. Via head incorporation  
f. Features are either strong or weak. Strong features are checked overtly; weak features are checked covertly.  
g. The process of head incorporation does not tolerate contradictory features (i.e., all of the features of two heads must match in order for one head to incorporate into the other).  
h. Covert movement is head movement of formal features after Spell-Out.  
i. Covert movement is more economical than overt movement.  

Many (though not all) of these assumptions are uncontroversial under the framework of Chomsky (1993; 1995), but for the moment let’s assume that all of the assumptions given in (51) are true in order to examine the specifics of De Vries’ proposal.

De Vries begins by giving some background about the relationship between determiners and their nominal complements in non-relative contexts which will be crucial to his analysis of wh-relatives. As a starting point consider the following data from Swedish:

(52)  
a. et hus [DP ett [NP hus]] ‘a house’  
b. hus-et [DP hus,et [NP t]] ‘the house’

Languages with overt case marking demonstrate that DPs select NPs that agree with them in phi-features and case features. Following Delsing (1988; 1993), De Vries assumes that there exists a parameter which accounts for the difference between (52a) and (52b). In Swedish, the indefinite determiner (52a) has weak features, meaning that the phi-features
and Case features of the N° and the D° are checked after Spell-out, which results in covert incorporation of the formal features of N° into D°. In contrast, Swedish definite determiners (52b) have strong features, a fact which forces the noun ‘hus’ to overtly move to D° via a process of head incorporation, resulting in the surface order shown in (52b)\(^{44} \ 45\). Under this system, English and Spanish are viewed as having weak determiners, since no overt movement of N° to D° occurs (i.e., Spanish and English DPs behave like (52a)).

This background regarding the process of feature checking between DPs and the NPs they select sets the stage for De Vries’ proposal about wh-relatives. Before moving on to wh-relatives, however, consider how Case is checked in the following sentence pair:

(53)  

a. I saw [DP-ACC the [NP-ACC teacher].

b. *I saw [DP-ACC the [NP-NOM teacher].

In non-relative contexts like (53), DPs and the NPs they select always match with respect to both phi-features and Case features. Therefore, when N° moves to D° (covertly in (53a), given that in English determiners have weak features), all four relevant features are checked (i.e., phi-features on N, Case on N, phi-features on D, and Case on D). However, if NP and DP do not match in Case, as in (53b), then the derivation will crash in the following fashion:

(54)  

a. N° cannot be incorporated into D° because their Case features do not match (See (51g).

b. In spite of the inability of N° to incorporate into D°, D° and N° have phi-features and Case features that must be checked in order to avoid a crash in the derivation.

c. Therefore, a (less economical) movement process occurs in which N° moves to Spec,DP\(^\text{Wh}]: [\text{DP-ACC [NP-NOM teacher]}, [\text{D° the t}_{i}]]

d. In this configuration, the phi-features of N° and the phi-features of D° mutually check each other. The Case feature of D° and the Case feature of N° do not match, so these two features remain unchecked.

e. The ACC Case feature of D° is checked via movement (either overt or covert) of DP to AgroP. Thus, the requirements of DP have been met as both its phi-features and Case features have been checked.

54
f. The Case feature of N° remains unchecked, causing the derivation in (53b) to crash.

However, while non-relative constructions like (53b) are ruled out, De Vries suggests that this process might produce the correct results for RCs under a head raising analysis.

Consider a version of (53) that contains a RRC:

(55) The-NOM man-NOM who-ACC the teacher saw entered the room.

Now, let’s retrace De Vries’ derivation of a sentence like (55) using the same process described in (54):

(56) a. Derivation begins as⁴⁷: The [the teacher saw who man] entered the room. The formal features of the N° ‘man’ cannot be incorporated into the D° ‘who’ because their Case features do not match.

b. Since incorporation is impossible, N° moves to Spec,DP, where the phi-feature of N° and the phi-features of D° are able to check each other simultaneously. This gives the following structure:
   The [the teacher saw [DP man who]] entered the room. The Case features of N° and D° remain unchecked.

c. The DP ‘man who’ moves to Spec,AgrO within the RC where it checks its ACC case feature. Since the N° ‘man’ in NOM, its case feature cannot be checked in Spec,AgrO and therefore remains unchecked.

d. The D° ‘who’ contains a wh-feature, as does the C° projection of the relative CP. Therefore, the DP ‘man who’ moves to Spec,CP, where the wh-features on D° and C° are mutually checked off. This gives the following structure:
   The [man who the teacher saw] entered the room.

e. At this point, the NP ‘man’ is in Spec,DP, which is in Spec,CP. This position is within the checking domain of the external determiner, so the N° ‘man’ and the external D° ‘The’ are able to mutually check their NOM case features and phi-features.

A phrase structure tree for the process described in (56) is given below in (57)⁴⁸:
A close examination of the steps in De Vries’ derivation highlights a number of problems with his analysis. First, it fundamentally relies on the notion that DPs are capable of selecting NP complements which obligatorily match them in terms of phi-features but may or may not match them in terms of Case. Such a selection relationship is highly unusual, and according to De Vries’ analysis would only occur in RC contexts. It seems odd that DPs would behave one way in non-relative contexts (i.e., always selecting an NP complement with matching Case) but a different way in relative contexts (i.e., able to select an NP that may or may not match its Case feature). Such an approach would need some mechanism for identifying the conditions under which DPs would have the ability to select NP complements that do not match the selecting DP in Case.

As was noted in Chapter 1 and Section 2.4.4, any HR approach to RCs will require some mechanism(s) to account for a central fact regarding Case assignment: the ‘relative pronoun (Dr) + nominal head (N)’ complex is assumed to originate as a DP within the RC,
yet Dr and N normally do not match in Case features\(^{49}\). In contrast to Bianchi’s approach to this problem (see Section 2.4.4), De Vries hypothesizes that DPs can select NPs which do not match the selecting DP in Case. Under the wh-dependency approach outlined in Chapter 3, this problem is eliminated as nominal heads are not base generated within the RC as they are under HR.

A second problem with De Vries analysis is closely related to the first problem. Under De Vries’ system, sentences in which the Case features of the external determiner (Dx), the relative determiner (Dr) and the nominal head (N°) are identical (which frequently occurs strictly by coincidence) will incorrectly be ruled out:

(58) The-NOM [man-NOM who-NOM fired me] left the company.

In (58), N° is able to incorporate into Dr (covertly in English) because Dr and N° have matching phi-features as well a matching Case feature (NOM). Therefore, N° will not move to Spec,DP, but rather will stay in its base position and the surface word order of ‘who man’ is retained\(^{50}\). The final step in the derivation has the relative DP moving to Spec,CP. Since N° is not in Spec,DP but rather remains a complement of Dr, it is not in the checking domain of Dx and therefore the derivation will crash as a result of the fact the phi-features of Dx remain unchecked. Additionally, De Vries’ derivation will not yield the correct word order in (58) since the N° ‘man’ remains after the Dr ‘who’: *The [who man fired me] left the company.

A third problem concerns the sequence of movements in De Vries’ system and the ability of movement operations that occur prior to Spell-Out to ‘look ahead’ into possible operations that will occur after Spell-Out. Consider a sentence like (55) in English, a language that has weak phi-features on the determiner.

(55) The-NOM man-NOM who-ACC the teacher saw entered the room.
De Vries asserts that the formal features of the N° ‘man’ are unable to incorporate into the Dr because their Case features do not match (i.e., ‘man’ is NOM while ‘who’ is ACC). Since English determiners have a weak phi-features, such movement would necessarily occur after Spell-Out. But according to De Vries’ account, the impossibility of a post-Spell-Out covert movement operation forces the overt movement of the N° ‘man’ to Spec,Dp of Dr before Spell-Out. It is unclear how a post-Spell-Out restriction on incorporation of the formal features of the N° ‘man’ into the Dr ‘who’ would force movement to Spec,DP in the overt syntax. In other words, De Vries’ system entails that pre-Spell-Out movement operations must have the capability of ‘looking ahead’ into possible post-Spell-Out operations and determining if a post-Spell-Out condition necessitates pre-Spell-Out overt movement. This does not appear to be a plausible scenario under MT assumptions, where categories only undergo movement in order to check strong features prior to Spell-Out.

A fourth problem with De Vries’ analysis concerns the Case features on the external determiner (Dx) and the RCs nominal head. In order for the external determiner to have its phi-features checked under De Vries’ system, it is essential that the Case feature of the nominal head, which is base generated within the RC as a complement to Dr, match the Case feature of Dx. Yet, it is unclear what mechanism will ensures that these two will match, given that they are base generated in separate clauses (i.e., Dx in the matrix clause and the nominal head in the RC).

It is clear the HR approach to wh-relatives elaborated by De Vries is problematic and leaves a number of questions unanswered. In general, the source of the problems with De Vries’ analysis seems to be his assumption that (only) relative determiners (i.e., wh-relative pronouns) are capable of selecting NP complements that do not match the selecting DP in terms of the Case feature. De Vries uses this assumption to account for the basic fact
that in languages that exhibit overt Case marking, wh-relative pronouns and the nominal heads of RCs differ in case (or else they bear the same only as a coincidence). A more logical assumption, indeed the standard assumption, is that DPs select NPs that agree with the selecting DP in terms of both phi-features and Case features. This obviates the need to stipulate that relative determiners (wh-relative pronouns) behave differently from determiners in non-relative contexts with respect to the Case feature carried by NPs they select. This assumption ensures that determiners and the NPs they select always agree in both their Case features and their phi-features.

2.5.2 Non-wh-Relatives

It was mentioned earlier that De Vries (2002) objects to the fact that wh-relatives and non-wh-relatives had different phrase structures under Bianchi’s (1999; 2000b) head raising analysis of RCs (see Section 2.4). Given the semantic equivalence of wh-relatives and non-wh-relatives, this is a desirable result.

(56)  a. The man who I saw robbed the bank.
     b. The man that I saw robbed the bank.
     c. The man I saw robbed the bank.

De Vries (2002: 126) asserts that the difference between (56a) and (56b-c) is the result of ‘surface effects’, though he does not specify the nature or origin of these effects. De Vries’ analysis of non-wh-relatives, therefore, is the same as his analysis of wh-relatives. De Vries assumes that while wh-relatives have an overt wh-relative pronoun (like ‘who’) as the relative determiner (Dr), non-wh relatives have an empty operator in the Dr position, where it selects the nominal head of the RC as its NP complement exactly as wh-pronouns do in wh-relatives. The Dr position has all of the same features and requirements in non-wh-relatives as it does in wh-relatives, including the [+wh] feature which attracting it to Spec,CP
(which also contains a [wh] feature). All of the problems that apply to De Vries’ analysis of wh-relatives identified in Section 2.5.1 therefore apply to his account of non-wh-relatives as well. Given the shortcomings identified in De Vries’ basic analysis of wh-relatives (and non-wh-relatives), I will not address the issue further here.

2.6 Additional issues related to HR analyses of relatives

Thus far, I have reviewed the three of the more comprehensive HR analyses to RC syntax that have appeared in the literature: Kayne (1994), Bianchi (1999; 2000b) and De Vries (2002). Each analysis has been shown to be problematic and highly complex, requiring numerous mechanisms to achieve a basic level of descriptive and explanatory adequacy. I now turn to two remaining issues that have been claimed to offer strong support for a head raising analysis of RC structure: idiom chunk evidence and reconstruction data.

2.6.1 Idiom Chunks

Perhaps the best-known argument used to provide support for a head raising analysis of RCs is that of idiom chunks (Bianchi 1999; Alexiadou et. al. 2000; De Vries 2002). This section will argue that the evidence regarding idiom chunks is mixed and that the behavior of idioms with respect to syntactic processes like relativization (among others) is therefore too idiosyncratic and unpredictable to serve as a reliable indicator of underlying syntactic structure.

Consider the following commonly cited example, originally in Schachter (1973), borrowed from Alexiadou et. al. (2000):

(59) a. to make headway
    b. The headway that we made (gap) was insufficient.
    c. *The headway was insufficient.
If one assumes that the idiomatic reading of ‘headway’ is only available when ‘headway’ occurs as a complement of the verb ‘make’, then (59b) appears to provide support for the raising of ‘headway’ out of the RC. This same assumption would rule out (59c) since ‘headway’ cannot independently convey its idiomatic meaning without appearing as a complement of the verb ‘make’. However, consider the following counterexample:

(60)  a. As a result of working through the night, the logistics team made headway that (gap) allowed us to complete the project before the deadline.
    b. *Headway allowed us to complete the project before the deadline.

If the assumption made above is true (i.e., that ‘headway’ can only carry its idiomatic meaning when it occurs as a complement to ‘make’) then (60a) entails that ‘headway’ must be generated outside of the RC, since ‘headway’ cannot occur in the gap of the RC independently of ‘make’, as shown by (60b). Therefore, it appears that (59) is evidence in support of HR while (60) is evidence against HR. How can this paradox be resolved?

The answer to this question lies in the idiosyncratic behavior of idioms in general with respect to a number of syntactic processes, of which relativization is only one example. Idioms appear to be distributed along a sliding scale from opaque (i.e., fixed, rigid, more cohesive) to transparent (i.e., subject to syntactic transformation, less cohesive)\(^5\). In general, opaque idioms are rigid and do not interact with syntactic processes
such as relativization and passivization.

(61)  
  a. to beat around the bush (idiom)  
  b. *The bush that John beat around…(relative)  
  c. *The bush was beat around by John. (passive)  

(62)  
  a. to burn the midnight oil (idiom)  
  b. *The midnight oil that Jenny burned (relative)  
  c. *I heard that midnight oil was burned by John last night. (passive)  

In contrast, more transparent idioms do interact with such processes:

(63)  
  a. to pull strings (idiom)  
  b. I found out about the strings you pulled to get this job. (relative)  
  c. John pulled the strings that got Bill his job. (relative)  
      ((37) from Alexiadou et. al. 2000)  
  d. I later learned that strings were pulled that helped me get the job.  
      (passive + relative)  

Note that (63b) seems to support a head raising analysis, while (63c) seems to refute a HR approach. The acceptability of relativized and passivized idiom chunks varies from idiom to idiom, depending upon how opaque (or conversely, how transparent) each idiom is. Each idiom must be independently tested to determine its ability to undergo syntactic transformations. In addition, grammaticality judgments about the acceptability of relativized and passivized idiom chunks often vary from speaker to speaker.

For these reasons, it appears that idioms do not provide strong support for the head raising analysis, as has been commonly claimed. In short, idioms show idiosyncratic behavior with respect to syntactic transformations, and are therefore unreliable as a diagnostic for determining how the internal structure of relatives should be analyzed.
2.6.2 Binding / Reconstruction.

Along with idiom chunk evidence, reconstruction effects are frequently cited as evidence that supports a head raising analysis. However, as was the case with idiom chunk data, a review of commonly cited reconstruction evidence shows that the data is ambiguous with respect to whether the nominal head of RCs should be interpreted inside the RC or outside of the RC.

As noted by Bianchi (1999: 108-109), Schachter’s (1973: 32-24) pointed out that anaphoric pronouns embedded within the nominal head of an RC behave as if they were reconstructed within the RC with respect to binding phenomena:

\[(64)\]

\[\text{a. [The portrait of himself, [that John painted] is extremely flattering.}\]
\[\text{b. [The interest in each other, [that John and Mary showed] was fleeting.}\]

According the Binding Theory, the anaphor ‘himself’ in (64a) needs to be locally bound in order to avoid a Condition A violation. If one assumes that ‘picture of himself’ is an ‘NP + PP complement’ structure base generated within the RC, then the trace of ‘himself’ is locally bound by ‘John’, thereby avoiding a Condition A violation. The same logic applies to (64b). Therefore, the acceptability of (64a-b) provides support for a head raising analysis of RCs based on Condition A reconstruction effects.

In contrast to the Condition A effects shown in (64), the heads of RCs do not show Condition C reconstruction effects (Sauerland 2000; Munn 1994):

\[(65)\]

\[\text{a. The relative of John, that he likes lives far away. ((2a) in Sauerland 2000)}\]
\[\text{b. I have a report on Bob’s division that he won’t like.}\]
\[\text{(Sauerland (to appear); credited to Merchant 2000)}\]

If the embedded NP ‘John’ is reconstructed within the RC (65a), a Condition C violation would result because the trace of ‘John’ would be locally bound by the pronoun ‘he’. The
same logic applies to (65b). Yet both sentences are acceptable. Based on the contrast
between (64) and (65), it appears that the heads of RRCs show reconstruction effects for
binding variables (64) but do not show Condition C reconstruction (Sauerland 2000; Munn
1994).

Munn (1994) provides an additional contrast related to Condition C reconstruction
of RC heads:

\[(66)\]
\[
a. \text{The picture of Bill}_i \text{ that he}_i \text{ likes is on the mantle.}
b. \text{The picture of Bill}^*_{\text{ij/ik}} \text{ that he}_i \text{ took is on the mantle.}
\]

(Based on (15b-c) in Munn 1994)

(66a) is similar to (64) in that it does not show Condition C reconstruction effects.
However, Munn argues that the presence of an idiomatic expression (‘take a picture’) gives rise to a Condition C violation in (66b), making the sentence ungrammatical if ‘Bill’
is coindexed with ‘he’ but grammatical if ‘Bill’ and ‘he’ do not corefer. However, the
apparent violation in (66b) disappears if the reference of ‘he’ is reinforced with an
anaphoric PP in the RC:

\[(67)\]
\[
\text{The picture of John}_i \text{ that he}_i \text{ took of himself}_i \text{ is on the mantle.}
\]

(67) contains the same idiomatic expression at (66b), yet does not show a Condition C
reconstruction effect. Therefore, it appears that something other than the presence of an
idiomatic expression in (66b) must be responsible for the Condition C violation.

Sauerland (2000: 2-3) points out another interesting contrast related to the
reconstruction of RC heads:

\[(68)\]
\[
a. \text{*[Which argument that John}_i \text{ was wrong] did he}_i \text{ accept t in the end.}
b. \text{[Which argument that John}_i \text{ had criticized] did he}_i \text{ accept t in the end.}
\]

((3a-b) from Sauerland 2000)

In (66a), the R-expression ‘John’ is embedded into a clausal complement (‘that John was
wrong’) to the NP ‘argument’ and produces a Condition C violation that leads to
ungrammaticality. In contrast, in (66b) the R-expression ‘John’ is embedded into an RRC modifier/adjunct (‘that John had criticized’) of the NP ‘argument’, but no ungrammaticality results. Under the HR approach to RCs, the RRC in (66b) is not viewed as an adjunct but rather as a complement of the external determiner (Dx). Therefore, that argument/adjunct asymmetry shown by the contrast between (66a) and (66b) would require some other explanation if one assumes that RRCs are derived via HR.

Based on (64-68), it seems that the data concerning reconstruction of nominal elements embedded into the head of an RRC is mixed. Condition A effects seem to indicate that reconstruction of the nominal head within the RC is necessary and thus support a HR approach. Condition C effects seem to indicate that in some cases the head of and RC is not reconstructed in the gap of and RRC. Reconstruction therefore does not provide direct evidence that the nominal head has been raised from a position internal to the RC. However, the Condition A effects noted above suggest that the external head should participate in the wh-operator chain within the RC in some fashion.

Under that standard GB adjunction analysis of RCs, the status of relative operators was unclear with respect to its interaction with binding phenomena (Alexiadou et. al. 2000; Bianchi 1999). Specifically, it was unclear whether the traces of moved relative operators (either null or overt pronouns) were considered to be pronominal elements or deleted copies of the external nominal head (Alexiadou et. al. 2000). Bianchi (1995: 109), arguing that an HR approach is warranted, argues that the null hypothesis is to assume that the traces of relative operators are merely copies of the operators themselves but not copies of the nominal antecedent of the RC which licenses the operator. An alternative would be to assume that the nominal head of an RC licenses both the RC and the relative operator which fulfills the role of the nominal head in the RC, and therefore the relative operator and
its traces act as copies of the nominal head. This issue cannot be resolved here, but Chapter 3 will offer a tentative suggestion regarding how the relationship between relative operators and nominal RC heads should be properly defined within the framework of a wh-dependency approach to RCs.

A final comment about reconstruction effects in RRCs is necessary. Munn (1994: 3) notes that “reconstruction is an odd process, in that it behaves differently under certain circumstances.” The contrast between (66b) and (67) is one example of this. These inconsistencies are often aggravated by the fact that speaker judgments related to co-indexing possibilities (i.e., possible readings) in sentences like (64-68) are frequently unstable and may show variation from informant to informant. For example, many informants feel that sentences like (64) that show Condition A reconstruction effects are odd. These factors need to be taken into account when judging evidence related to reconstruction effects.

As was the case with idiom chunk data, the evidence regarding reconstruction effects into relative clauses appears mixed. Condition A and Condition C effects offer conflicting evidence about the ability of nominal elements embedded within RC heads to be reconstructed into the gap position of RRCs in English. Therefore, two of the primary arguments that have been claimed to provide strong support for the head raising analysis or RCs have been shown to be inconclusive.
2.7 Conclusion

Despite its current popularity, the preceding discussion has shown that the HR approach to RCs faces a number of problems and may be untenable. The majority of the problems encountered by head raising approaches can be traced to two central assumptions that are forced by any HR approach.

First, HR accounts analyze RCs as syntactic complements of an external determiner. The status of RCs as complements under HR is troubling given that RRCs are optional modifiers and may be freely interchanged with post-nominal PP modifiers (which are also optional). Thus, the obvious distributional similarity between RRCs and post-nominal PP modifiers is lost if one adopts a HR account of RRC structure for the simple reason under HR RRCs contain the NP they modify while PPs do not. While the distribution of RRCs and PPs is not identical, is has been shown that both may be stacked, coordinated and extraposed. In addition, the ‘D + CP’ complementation structure does not appear to be well-motivated, given that structures that have been analyzed as involving ‘D + CP’ complement configurations by proponents of HR have viable alternative analyses that involve determiners taking nominal as opposed to clausal complements.

Secondly, HR analyses assume that the nominal head of an RC is base-generated within the RC that modifies it. This assumption has a number of ramifications, primary among them being that RCs are not syntactic constituents. Processes that interact with RRCs, including stacking, coordination, and extraposition all indicate that RCs are constituents, contrary to the view imposed by HR. These processes also indicate that RCs have some degree of independence from the head they modify, which from a HR point of view is a strange finding given that nominal RC heads are considered to have originated within the RCs that modify them. In addition, languages with overt case marking of nouns
and relative pronouns indicate that relative pronouns and nominal RC heads are base-generated in separate clauses (i.e., the RC and the matrix clause, respectively), while HR predicts that both elements are base-generated within the RC. In short, HR provides the wrong constituency facts for stacking, coordination, and extraposition, as well as for Case marking.

This chapter provided detailed descriptions and critical reviews of the three most comprehensive HR analyses that have been published: Kayne (1994), Bianchi (1999; 2000b) and De Vries (2002). To differing degrees, these three analyses attempt to address many of the problems outlined above. In order to do so, all three have been shown to be highly complex and rely on a numerous stipulative mechanisms to achieve a basic level of observational adequacy. The HR analyses in Kayne (1994) and Bianchi (1999; 2000b) ignore the semantic equivalence of wh-relatives (‘the man who I saw’) and non-wh-relatives (‘the man that I saw’ or ‘the man I saw’) and assign each type a different syntactic structure in spite of their syntactic and semantic similarities. As a result, the account given for stacked, coordinated and extraposed wh-relatives is necessarily different from that given for non-wh-relatives, again losing sight of the fact that both types RC are semantically equal.

Given the numerous problems associated with current HR approaches to the syntax of RCs, Chapter 3 examines the standard wh-movement approach to RCs, including a discussion of its origins in syntactic theory as well as some of its perceived shortcomings. The primary problems associated with the wh-movement to RCs are principally associated with the cross-linguistic distribution of relativizers (i.e., complementizers, wh-pronouns and null elements) in the CP area of RCs. It is then argued that the distribution of relative
elements in the CP area of RCs can only be understood if the diachronic development of RCs is taken into account; this diachronic development is addressed in Chapters 4 and 5.
3.1 Introduction

Chapter 2 challenged the viability of HR analyses of post nominal RRCs\(^{55}\), arguing that existing HR approaches face serious problems achieving observational adequacy and require a high degree of theoretical complexity in order to account for word order patterns found in wh-relatives and non-wh-relatives. As outlined in Chapter 1, the primary alternative to HR approaches to relatives is a wh-dependency approach. In fact, until the early 1990s the standard (generative) analysis of relatives was based on wh-movement (Chomsky 1977b; Browning 1987). Under this view, RCs were analyzed as adjoined clausal modifiers of an external nominal antecedent.

However, the ‘standard’ wh-movement analysis of RCs, developed within the framework of Government and Binding (GB) theory, faces some challenges as well. These challenges are the focus of Chapter 3. Section 3.2 provides an overview of the ‘standard’ wh-movement approach advocated by Chomsky (1977b) for RRCs with wh-relativizers, non-wh-relativizers and null relativizers, focusing on post-nominal RRCs of the type found in English and Spanish (albeit using primarily English examples). Section 3.3 gives an overview of some problems associated with the standard analysis, which by and large are related to the long-standing problem of accounting for the cross-linguistic distribution of relative elements\(^{56}\) in RRCs. To stress the cross-linguistic nature of this problem, RC patterns from five languages (English, German, Spanish, Italian and French) are compared. Section 3.4 concludes by arguing that while wh-movement is in fact the central
transformation involved in the derivation of post-nominal RRCs, wh-movement by itself is incapable of providing a full understanding of the syntax of RRCs. That is, wh-movement is only part of the puzzle. In addition to wh-movement, it is also necessary to understand the diachronic of RCs and the elements they contain, which will be the topic of Chapters 4 and 5, with a focus on the diachronic development of RRCs in Spanish (and more generally in Romance). The diachronic development of RRCs, which has received little attention within the generative literature on the syntax of relatives, will be shown to play a crucial role in the development of a comprehensive theory of RC syntax.

3.2 The Standard Wh-Movement Account of Restrictive Relatives

Until the early 1990s, the standard (generative) analysis of RRCs was based on wh-movement (Chomsky 1977b; Browning 1987). One important reason for this was the observation that the wh-pronoun in wh-relatives (i.e., English ‘who’) appears to bear some superficial similarities to interrogative wh-pronouns in direct and indirect questions:

(1) a. Direct Question: \( [\text{CP Who} \text{ did John see ti?]} \)
    b. Indirect Question: I wonder \( [\text{CP who} \text{ John saw ti.}] \)
    c. Wh-Relative: The man \( [\text{CP who} \text{ John saw ti}] \) robbed a bank.

Given the similarity of (1-3), it was hypothesized that relatives and interrogatives were derived in the same way, via wh-movement, in English as well as in other languages. This hypothesis was strengthened by the observation that relatives obey the same restrictions on movement as interrogatives. For example, extraction that originates within a CP embedded within an NP (Complex NP Constraint or CNPC) is not allowed:
(2) a. Mike claimed \([\text{CP that he kissed a bridesmaid during the reception}]\).
   b. Who\(_i\) did Mike claim \([\text{CP that he kissed } t_i \text{ during the reception}]\)?
   c. The bridesmaid who\(_i\) Mike claimed \([\text{CP that he kissed } t_i \text{ during the reception}]\)…

(3) a. Mike made \([\text{NP the claim } [\text{CP that he kissed a bridesmaid during the reception}]]\).
   b. ??Who\(_i\) did Mike make \([\text{NP the claim } [\text{CP that he kissed } t_i \text{ during the reception}]]\)?
   c. ??The bridesmaid who\(_i\) Mike made \([\text{NP the claim } [\text{CP that he kissed } t_i \text{ during the reception}]]\)...

The examples in (2) show that extraction out of a CP complement of a verb is allowed for both interrogatives (2b) and relatives (2c)\(^{57}\). The examples in (3) show that extraction out of a CP embedded within an NP is blocked for both interrogatives (3b) and for relatives (3c). Stated another way, the CP labeled in (3) is an island (in the sense of Ross (1967)) for extraction while the CP labeled in (2) is not an island. Note that the extraction facts are identical regardless of whether ‘who’ or ‘that’ is used as a relativizer in (2c) and (3c), suggesting that wh-relatives and non-wh-relatives may share a common derivation; I will return to this point in Chapter 4. The parallels between relatives and interrogatives in (1-3) suggest that both are derived via wh-movement.

Another parallel between relatives and interrogatives is seen with respect to extraction out of wh-islands (Wh-Island Constraint) (examples adapted from Haegeman and Guéron, 1999):

(4) a. I think \([\text{CP that she will meet the teacher at the party}]\).
   b. Who\(_i\) do you think \([\text{CP that she will meet } t_i \text{ at the party}]\)?
   c. I invited the teacher who\(_i\) I think \([\text{CP that she will meet } t_i \text{ at the party}]\).

(5) a. I wonder \([\text{CP whether she will meet the teacher at the party}]\).
   b. ??Who\(_i\) do you wonder \([\text{CP whether she will meet } t_i \text{ at the party}]\)?
   c. ??I invited the man who\(_i\) I wonder \([\text{CP whether she will meet } t_i \text{ at the party}]\).

Both interrogative (4b) and relative (4c) extraction are allowed in (4) because \([\text{Spec,CP}]\) is available as a landing site for wh-movement. However, interrogative (5b) and relative (5c)
extraction are blocked in (5) because [Spec,CP] is filled with ‘whether’\(^{58}\); therefore, [Spec,CP] cannot serve as a landing site for either interrogative ‘who’ in (5b) or relative ‘who’ in (5c). CPs of the type labeled in (5) are therefore referred to as ‘wh-islands’.

It is generally accepted that wh-relative clauses exhibit the full range of island constraints that apply to wh-interrogatives. This covers not only the CNPC and the Wh-island constraint, but also other island constraints such as the Coordinate Structure Constraint (CSC) and the Sentential Subject Constraint (also called the Subject Condition). In GB, the various island effects that had been identified in earlier literature (Ross 1967) were collectively reduced to the Subjacency Condition (Hornstein 2001: 89), which roughly states that moved elements cannot cross more than one bounding node\(^{59}\). The parallels between wh-relatives and wh-interrogatives with respect to Subjacency facts reinforced the conclusion that both interrogatives and relatives are derived via wh-movement. With this background in mind, section 3.2 will give an overview of the standard wh-movement analysis for wh-relatives and non-wh-relatives, which was widely accepted within the GB framework.

3.2.1 The standard GB analysis of English wh-relatives

Under the standard GB analysis, RCs in English and other languages were viewed as optional adjuncts that were adjoined to the NP they modified. While there was no consensus about the precise adjunction site of RRCs, RRCs were most commonly adjoined to NP (Jackendoff 1977; Toribio 1992; Fabb 1987) in keeping with Chomsky’s (1986) assumption that maximal projections may only adjoin to maximal projections (Alexiadou et. al. 2000: 5); other possible adjunction sites included N’, DP and D\(^{60}\). The derivation of
In (6), the wh-pronoun ‘who’ undergoes wh-movement to [Spec,CP]. To capture the semantic coreference between the antecedent ‘man’ and the relative pronoun ‘who’, it was assumed that a predication relationship exists between the RC and the antecedent. More specifically, one can say that the semantic interpretation of the relative pronoun ‘who’ is bound by the nominal antecedent ‘man’. Safir (1986) calls this R-binding. The nature of the predication relationship between relative pronouns and their nominal antecedents is also discussed in Williams (1980), Chomsky (1982: 92-93), Chomsky and Lasnik (1993) and Browning (1987).
3.2.2 The Standard GB analysis of English non-wh-relatives

Section 3.2.1 discussed RRCs that contain an overt wh-pronoun, such as ‘who’. English (among other languages) also has non-wh-relatives, which are introduced by the complementizer ‘that’ (i.e., ‘The man [that I saw] robbed a bank’). If viewed as a complementizer base generated in C°, it is not feasible to assume that the English relativizer ‘that’ can undergo wh-movement in the same way that a wh-pronoun like ‘who’ can.

One may wonder how we can be sure that the relativizer ‘that’ in English is a complementizer in C° as opposed to a relative pronoun similar to ‘who’. One important reason to assume that the English relativizer ‘that’ is a complementizer rather than a wh-pronoun is its inability to be pied-piped with in prepositional relatives:

(7) a. The man [CP [PP to whom] I spoke t₁] robbed a bank.
   b. *The man [CP [PP to that] I spoke t₁] robbed a bank.
   c. The room [CP [PP to which] I was taken t₁] had no furniture.
   d. *The room [CP [PP to that] I was taken t₁] had no furniture.

In addition, English non-restrictive relatives may not be introduced by ‘that’; instead, they are only introduced by a wh-pronoun:

(8) a. I found a silver dollar, which somebody must have dropped on the ground.
   b. *I found a silver dollar, that somebody must have dropped on the ground.

Therefore, it has been assumed that relativizer ‘that’ in English is a complementizer base generated in C°. As a complementizer, ‘that’ is incapable of undergoing wh-movement to [Spec,CP].

However, leaving aside the contrasts shown for prepositional relatives in (7) and non-restrictives shown in (8), it has been noted that wh-relatives and non-wh-relatives (i.e., The man [who/that I saw] robbed a bank) are similar in important ways; specifically, they
are semantically equivalent and exhibit identical Subjacency effects (see section 2.3.1). Given their similarity to wh-relatives, it was hypothesized that English that-relatives (as well as RCs introduced by complementizers in other languages, such as Scandinavian ‘som’) were derived via wh-movement of a covert relative operator, with the ‘complementizer ‘that’ base generated in C°, as shown below:

(9) The man that I saw…

(9) reflects the movement of a null relative operator (‘OP’) to [Spec,CP]. As was the case with wh-relatives, a predication relationship holds between the RRC and the nominal antecedent (‘man’).
3.2.3 The Standard GB analysis of null relatives

A third type of relative in English is the null relative, which contains no overt relativizer:

(10) The man [I saw] robbed a bank.

Other CPs in English, such as verbal complement CPs (i.e., He said (that) I was late) also have empty C° projections. In contrast, other languages such as Spanish and French do not allow null C° projections in relative CPs or complement CPs. In English, the distribution of null relatives is restricted; for example, subject relatives (i.e., *‘The man [came] gave a presentation’) and prepositional relatives with pied piped prepositions (i.e., *‘The man [to I spoke] robbed a bank’) may not have null relativizers. Null relatives in English are semantically equivalent to wh-relatives and that-relatives, and their syntactic behavior is similar. Given the basic similarity of null relatives to relatives introduced by wh-pronouns and complementizers, null relatives were typically analyzed as that-relatives with a deleted complementizer. Therefore, null relatives were derived the in the same way as that-relatives (see (9)), with the only difference being that that C° node was empty.

3.3 Challenges facing the standard wh-movement analysis of relatives

Up until the early 1990s, the general approach outlined in section 3.2 was the standard generative analysis of the syntax of RCs. However, over time several problems with the standard wh-dependency analysis of RCs were identified. The most serious problem was the inability of the standard analysis to account for the cross-linguistic distribution of relativizers and other relative elements such as resumptive pronouns. Even within closely related language families such as Romance and Germanic, there is a high
degree of cross linguistic variation in the distribution of relative elements, and specifically of relative elements that are found in the COMP area of RCs (i.e., wh-pronouns, complementizers, null operators, etc.). The standard analysis was never able to offer any plausible explanatory account of such variation. Section 3.3.1 will give an outline of the problem of cross-linguistic variation in the comp area of RCs, using data from Romance and Germanic languages of the IE family. While section 3.3.1 only offers a partial description of the variation that exists, this serves to highlight the general nature and difficulty of the problem. The general difficulty of dealing with the cross-linguistic variation found in the COMP area of RCs has additionally been associated with two more narrowly defined syntactic issues. Section 3.3.2 explores problems associated with the Doubly Filled Comp Filter Section 3.3.3 discusses that-trace effects in subject relatives cross-linguistically. Section 3.3.4 offers some concluding remarks and briefly introduces the strategy that will be employed in Chapter 4 to address the puzzling cross-linguistic distribution of relative elements in the COMP area of RCs.

3.3.1 Variation in the COMP area of RCs

Perhaps the best known and most difficult problem related to the general study of the syntax of RCs is the variation found in the COMP area of RCs. Cross-linguistically, RCs present a seemingly unsolvable puzzle of wh-pronouns, complementizers and null operators, and the distribution of these elements within the COMP area of RCs varies considerably from language to language. The purpose of this section is to outline some of the variation found in certain Romance (Spanish, French, Italian) and Germanic (English, German) languages with respect to the distribution of relative elements found in the COMP area of RCs. To exemplify the type of variation that is found cross linguistically, I will
briefly give generalizations about the distribution of relative elements found in the COMP area of four types of relative constructions: subject RRCs, direct object RRCs, prepositional RRCs, and Non-Restrictive relatives. This will lead to a discussion of two issues related to this larger problem within the wh-movement framework: the Doubly Filled Comp Filter (section 3.3.2) and that-trace effects (section 3.3.3).

First, consider the distribution of relative elements in the COMP area of subject RRCs:

(11) **English Subject RRCs:** If the antecedent is [-human], the preferred relativizer is the complementizer ‘that’. Some speakers also use ‘which’ instead of ‘that’, especially in formal contexts. With [+human] antecedents, the relativizer may be either ‘that’ or ‘who’, which occur in free variation. Null relativizers are generally unacceptable in English Subject RRCs, but may occur in highly colloquial speech (i.e., ‘I had a friend who was a baseball player.’).

(12) **German Subject RRCs:** The relativizer is a wh-pronoun that agrees with the antecedent in number and gender and is marked with the CASE that reflects the role the antecedent plays within the RC. Null relativizers are banned.

(13) **Spanish Subject RRCs:** The relativizer is the complementizer ‘que’. Wh-pronouns are not allowed as relativizers. Null relativizers are banned.

(14) **Italian Subject RRCs:** The relativizer is the complementizer ‘che’. Wh-pronouns are not allowed as relativizers. Null relativizers are banned.

(15) **French Subject RRCs:** The relativizer is ‘qui’, which has been analyzed as a complementizer in C° which shows agreement features (Kayne 1977; Rizzi 1990; Sasaki 2000). The complementizer ‘que’ is not allowed as a relativizer. Null relativizers are banned.

It is clear that the distribution of relative elements in subject RRCs differs cross-linguistically. None of the languages in (10-15) allows null relativizers in subject RRCs. English allows a combination of wh-pronouns and complementizers. German exclusively employs wh-pronouns, while Spanish and Italian exclusively employ complementizers. French appears to use a special agreement-bearing complementizer ‘qui’ while barring use of the complementizer ‘que’, which is used in French direct object relatives.
Next consider the distribution of relative elements in the COMP area of direct object RRCs.

16. **English Direct Object RRCs**: They show that same a pattern as subject RRCs, except that direct object RRCs may have null relativizers.

17. **German Direct Object RRCs**: Same pattern as subject RRCs.

18. **Spanish Direct Object RRCs**: Same pattern as subject relatives when used without the personal ‘a’. Spanish direct object relatives in which the relativizer is preceded by the personal ‘a’ follow the same pattern as prepositional relatives, which are discussed below.

19. **Italian Direct Object RRCs**: Same pattern as subject relatives.

20. **French Direct Object RRCs**: The relativizer is the complementizer ‘que’.

The patterns seen with direct object relatives are similar to those seen with subject relatives with two exceptions: English allows direct object RRCs with null relativizers and French uses a different complementizer (‘que’ in direct object RRCs and ‘qui’ in subject RRCs).

Now consider the distribution of relative elements in the COMP area of prepositional RRCs. Pied piping is obligatory in all of the relevant languages except for English. When pied piping occurs, all five languages exclusively use wh-pronouns as relativizers. These wh-pronouns may be marked for number and gender agreement according to the language and pronoun that in question. German wh-pronouns are also marked for CASE. In English prepositional RRCs that contain a stranded preposition (as opposed to a pied piped preposition), the relativizer may be either a wh-pronoun, the complementizer ‘that’ or null\(^65\).

Finally consider the distribution of relative elements in the COMP area of non-restrictive relatives (NRRCs).
(21) English NRRCs: Relativizer is always a wh-pronoun. Null relativizers are banned, as is use of the complementizer ‘that’.

(22) German NRRCs: Relativizer is always a wh-pronoun.

(23) Spanish NRRCs: Relativizer may either be the complementizer ‘que’ or a wh-pronoun.

(24) Italian NRRCs: Relativizer may be either the complementizer ‘che’ or a wh-pronoun.

(25) French NRRCs: Relativizer may be either the complementizer ‘que’ or a wh-pronoun.

With respect to NRRCs, English and German only allow wh-pronouns to be used as relativizers, while Spanish, Italian and French allow either complementizers or wh-pronouns to be used as relativizers. None of these languages allows null relativizers with NRRCs.

Based on limited review of certain types of RCs from only five languages, it is obvious that the distribution of relative elements in the COMP area of RCs is subject to a high degree of cross-linguistic variation. While descriptive accounts of the distribution of relativizers from language to language are readily available, the standard wh-movement analysis of relatives was never able to provide a satisfactory explanation of the idiosyncratic cross-linguistic distribution of relative elements in the COMP area of RCs. This was one major weakness of the standard wh-movement approach to the syntax of RCs. Related to this general problem, the standard wh-dependency theory was also unable to explain cases in which complementizers and wh-pronouns appear to be in free variation (i.e., English subject and object RRCs, Spanish and Italian NRRCs, etc.). In addition, the lack of understanding of the variation found in the COMP area of RCs was at the root of
two additional problems faced by the standard wh-movement account of RCs: Doubly Filled COMP effects and that-trace phenomenon.

3.3.2 The Doubly Filled Comp Filter

First proposed by Chomsky and Lasnik (1977), the Doubly Filled COMP filter was one early attempt to partially explain the alternation between complementizers and wh-pronouns in the COMP area of RCs. Some languages such as English, do not allow wh-pronouns and complementizers to co-occur (overtly) within the same CP projection:

   b. The man [who, I saw t₁] robbed a bank.
   c. The man [OP, that I saw t₁] robbed a bank.

This restriction was formalized as the Doubly Filled COMP filter:

(27) Doubly Filled COMP Filter: When an overt phrase occupies the Spec of some CP the head of that CP must not dominate an overt complementizer.66

The Doubly Filled COMP filter required the deletion of either the wh-pronoun or the complementizer in sentences like (26a). Deleting the complementizer leads to (26b), while deleting the overt wh-pronoun leads to (26c) (Chomsky and Lasnik 1977).

In section 3.3.1, it was noted that in prepositional RRCs with pied piped prepositions, only wh-pronouns may occur:

(28) a. The man [[to whom], I spoke t₁] robbed a bank.
    b. *The man [[to that], I spoke t₁] robbed a bank.

In cases like (28), Chomsky and Lasnik (1977) argue that the pied piped preposition (‘to’) that intervenes between the antecedent (‘man’) and the wh-pronoun (‘whom’) blocks deletion of the wh-pronoun67. Therefore, only the complementizer may be deleted in structures like (28), which leads to the acceptability of (28a) and the ungrammaticality of (28b).
As pointed out by Bianchi (1995: 158-160) the data in Italian and Spanish are problematic for the Doulby Filled Comp Filter. In section 3.3.1, it was pointed out that subject and direct object relatives in Spanish and Italian only allow a complementizer to serve as the relativizer:

(29) **Spanish Subject Relative**  
La chica [que /*quien] me invitó es muy simpática  
The girl [that / who] me invited is very friendly  
‘The girl that invited me is very friendly.’

The Double Filled Comp filter correctly predicts that complementizers and wh-pronouns cannot co-occur in sentences like (29), but it does not explain why only complementizers (‘que’) are allowed in (29) while wh-pronouns (‘quien’) are excluded. Therefore, some additional filter would be necessary to account for subject and direct object relatives in Spanish and Italian (Bianchi 1995: 159).

The distribution of relativizers in French subject and direct object RRCs poses another problem for the Doubly Filled COMP filter. Section 3.3.1 alluded to the well known qui/que distinction in French. French subject RRCs allow the agreeing complementizer ‘qui’ and exclude the complementizer ‘que’ while French direct object RRCs allow the complementizer ‘que’ but exclude ‘qui’.

(30) **French Subject RRC**  
Je mange des choses [qui /*que] sont bonnes.  
I eat the things [which / that] are good  
‘I eat things that are good.’

(31) **French Direct Object RRC**  
Je mange des choses [ *qui / que ] j’aime.  
I eat the things which / that I like.  
‘I eat things that I like.’

In the case of French, The Doubly Filled COMP filter does not explain why (30) only allows ‘qui’ while (31) only allows ‘que’.
In addition, the Doubly Filled COMP filter was proposed as a parameter that only applied to certain languages, such as English, Spanish, French and Italian. This was necessary because ‘wh-pronoun + complementizer’ structures are widely attested in other languages, such as Dutch (Haegeman 1994), Bavarian German (Haegeman 1994) and Middle English (Haegeman 1994; Bianchi 1999). Thus, the Doubly Filled COMP filter was subject to parametric variation cross-linguistically.

Aside from the problems identified above, the Doubly Filled COMP filter was widely considered to be an ad-hoc filter that was not associated with any general principle of syntactic theory. In addition, it was descriptive rather than explanatory (Haegeman 1994: 384 fn.). That is, it provided no underlying syntactic reason why complementizer/wh-pronoun alternations should exist in the first place, or why doubly filled CP projections (i.e., both Spec,CP and C° both overtly filled) occur in some languages but not in others. The Doubly Filled COMP filter is one problem that the standard GB wh-movement analysis of RCs encountered regarding the cross-linguistic distribution of relative elements in the COMP area of RCs. I now turn to that-trace effects in subject relatives, which is another problem related to cross linguistic variation in the COMP area of RCs.

3.3.3 That-trace effects and subject relatives

That-trace effects were first identified in the context of subject and object extracted questions, like the following:

(32)  a. [Which book], do you think [CP t; that [IP Ryan will read t]]?
      b. [Which book], do you think [CP t; [IP Ryan will read t]]?

(33)  a. *[Which student], do you think [CP t; that [IP t will read a book]]?
      b. [Which student], do you think [CP t; [IP t will read a book]]?
In (32), object extracted questions may appear with an overt complementizer (32a) or without an overt complementizer (32b). The subject-extracted question in (33), however, is only acceptable if no overt complementizer is present (33b). Subject extracted relatives, however, offer a sharp contrast to (33):

(34)  
a. The man \([\text{CP } \text{OP}_i \text{ that } [\text{IP } t_i \text{ left}]]\) robbed a bank.
b. The man \([\text{CP } \text{who}_i [\text{IP } t_i \text{ left}]]\) robbed a bank.
c. *The man \([\text{CP } \text{OP}_i [\text{IP } t_i \text{ left}]]\) robbed a bank.

The pattern shown by subject-extracted relatives in (34) is exactly the opposite of that shown by subject-extracted interrogatives (33). I now outline three approaches to the that-trace contrast between (33) and (34): Chomsky and Lasnik’s (1977) That-Trace Filter, the treatment of that-trace effects as part of the Empty Category Principle (ECP) and Rizzi’s (1990) account within the framework of Relativized Minimality, which was also based on the ECP.

3.3.3.1 The That-Trace Filter (Chomsky and Lasnik (1977))

The restriction on subject-extracted questions shown in (33a) was first addressed by Chomsky and Lasnik’s (1977) That-Trace Filter:

(35) The sequence of an overt complementizer followed by a trace is ungrammatical.

One problem with the That-Trace filter is that it address the ungrammaticality of (33a), but offers no account of the contrast between interrogatives (33) and relatives (34) with respect to that-trace effects. In addition, like the Doubly Filled COMP Filter, the That-Trace Filter is descriptive rather than explanatory; it merely states that the sequence of a complementizer followed by a trace is ungrammatical in interrogatives like (33) (Haegeman 1994: 399). Therefore, subsequent research attempted to deal with that-trace
effects using more general syntactic principles: the Empty Category Principle (ECP) and Government.

3.3.3.2 That-trace effects and the ECP

As the concept of Government was developed within GB theory, the That-trace Filter came to be reanalyzed as an Empty Category Principle (ECP) violation (Lasnik and Saito 1984). The ECP\(^68\) requires that traces of movement be properly governed:

\[
(36) \text{Empty Category Principle (Haegeman 1994: 442)}
\]

Traces must be properly governed.

- A properly governs B iff A theta-governs B or A antecedent-governs B.
- A theta-governs B iff A governs B and A theta-marks B.
- A antecedent-governs B iff A governs B and A is coindexed with B.

Nodes that may serve as governors are heads (i.e., C°, D°, V°, etc.) and coindexed maximal projections (i.e, CP, DP, VP, etc.)\(^69\). With respect to (33a), it was argued that the presence of the complementizer ‘that’ in C° blocks the trace in Spec,CP from antecedent governing the lower trace in Spec,IP; therefore, the lower trace in Spec,IP is not properly governed, leading to an ECP violation and ungrammaticality. In (33b), however, there is no overt complementizer in C° and therefore the trace in Spec,CP antecedent governs the lower trace in Spec,IP, which yields a grammatical result.

Unlike (33a), the presence of an overt complementizer in (34a) does not appear to block the wh-moved null operator (OP) from governing the lower trace in Spec,IP, as the sentence is grammatical. It is notable that (34b), which is semantically equivalent to (34a), is also grammatical; this is expected under the ECP account of that-trace effects because there is no intervening complementizer between the wh-operator ‘who’ and the lower trace in Spec,IP. In addition, (34c) is ungrammatical; this is not expected under the ECP approach since there is no intervening complementizer to prevent the wh-moved null
operator ‘OP’ from properly governing its trace in Spec,IP. Therefore, the basic ECP account of that-trace effects was incapable of accounting for the sharp contrast between (33) and (34). These shortcomings were addressed by Rizzi (1990), who offered a revision of the ECP account of that-trace effects in RRCs within the framework of Relativized Minimality.

3.3.3.3 That-trace effects within Relativized Minimality (Rizzi 1990)

Within the framework of Relativized Minimality, Rizzi (1990: 65-71) attempts to account for the contrast between (33) and (34) by offering a typology of $C^\circ$ types that is centered around two features: [$\pm$ wh] and [$\pm$ predicative] (Rizzi 1991: 68):

\[
\begin{align*}
(37) & & a. &$+$wh &$-$pred & I wonder & [what & $\emptyset$ & [you saw t]] \\
& & b. &$+$wh &$+$pred & The thing & [which & $\emptyset$ & [you saw t]] \\
& & c. &$-$wh &$+$pred & The thing & [ OP & that & [you saw t]] \\
& & d. &$-$wh &$-$pred & I know & [ that & [you saw it]]
\end{align*}
\]

In essence, Rizzi claims that not all complementizers share the same features, even if they share the same phonological form. For example, given (37), the complementizer in (33a) has different properties than the complementizer in (34a), and Rizzi argues that this difference is responsible for the contrast between (33) and (34) with respect to that-trace effects.

Let’s explore exactly how Rizzi’s proposal works for English wh-relatives, that-relatives and null relatives. (33) and (34) are restated below:

\[
\begin{align*}
(38) & & a. &*[Which student], do you think [CP t, that [IP t, will read a book]]? \\
& & b. &[Which student], do you think [CP t, [IP t, will read a book]]? \\
(39) & & a. &The man [CP OP, that [IP t, left]] robbed a bank. \\
& & b. &The man [CP who, [IP t, left]] robbed a bank. \\
& & c. &*The man [CP OP, [IP t, left ]] robbed a bank.
\end{align*}
\]
Rizzi uses the typology of complementizers given in (37) in order to specify which $C^°$ projections are capable of serving as proper head governors of subject traces. Under Rizzi’s system, overt complementizers in $C^°$ are inherently ‘inert for government’ (Deprez 1994). Therefore, such complementizers must be licensed as governors via one of two possible mechanisms: spec-head agreement (A-Bar Agreement) or predication agreement (A Agreement). Without such licensing, $C^°$ cannot serve as a head governor. In (38a), the overt complementizer ‘that’ (in $C^°$) is by definition inert for government, and therefore the lower trace in Spec,IP is not properly governed leading to an ECP violation. In (38b), however, the null complementizer (in $C^°$) is licensed as a proper governor via spec-head agreement with the wh-trace in Spec,CP. Therefore, the lower trace in Spec,IP in (38b) is head governed and there is no ECP violation. The success of this account of the contrast between (38a) and (38b) is tied to the stipulation that null complementizers (38b) may be licensed as governors via spec-head agreement, while overt complementizers (38a) are ‘immune to the effects of spec-head agreement’ (Deprez 1994: 122).

Now let’s turn to Rizzi’s analysis of RRCs like (39). (39b) is grammatical because the null complementizer ($C^°$) is licensed as a governor via spec-head agreement with the wh-element ‘who’ in Spec,CP. (39c) is syntactically similar to (39b), except that the element in Spec,CP is a null operator (OP) in (39c) as opposed to an overt wh-element (‘who’) in (39b). Rizzi claims that null relative operators are anaphoric and as anaphoric elements they are incapable of licensing $C^°$ as a governor. The result of this is that the empty $C^°$ head is NOT licensed as a governor (via spec-head agreement) in (39c); as a result the lower trace in Spec,IP is not properly governed. Therefore, the grammaticality contrast between (39b) and (39c) rests on the stipulation that overt wh-operators (like ‘who’
in (39b)) can trigger spec-head agreement but null operators (like ‘OP’ in (39c)) may not
(Depréz 1994; Toribio 1992).

Finally, we are left with (39a), which has a null operator (‘OP’) in Spec,CP and an
e overt complementizer (‘that’) in C°. On the basis of the discussion so far, it is clear that
Rizzi needs ‘a device for turning the overt complementizer into an appropriate governor’
(Rizzi 1990: 69). As stated above, overt complementizers are inherently inert for
government and overt complementizers may not be licensed as governors via spec-head
agreement. However, Rizzi (1990: 67) notes that according to (37), the feature
[+predication] is a ‘distinctive property of relatives’. Based on the presence of this feature
in (39a), Rizzi argues that C° is licensed as a governor via predication agreement (i.e., A
Agreement) with the nominal antecedent (‘man’) of the RRC. Therefore, in (39a) the lower
trace in Spec,IP is properly governed by C°, which is licensed as a governor via predication
agreement (as opposed to spec-head agreement). Rizzi thus analyzes English ‘that’ in that-
relatives as an A-Agreement complementizer, as well as the relativizers ‘som’ in
Scandanavian and ‘qui’ in subject relatives in French (see Section 3.3.1). Toribio (1992)
extends a modified version of Rizzi’s analysis to Spanish subject relatives.

Given Rizzi’s explanation for the acceptability of the subject RRC in (39a), one
might wonder why predication agreement does not license C° as a proper governor in (39c)
as well. Here, Rizzi’s proposal rests on the stipulation that overt [+ predicative]
complementizers (39a) can be licensed as governors via predication agreement, but null
[+predicative] complementizers (39c) may not be so licensed (Depréz 1994).

Rizzi’s proposal was very influential and attempted to address the shortcomings of
erlier attempts to account for that-trace effects within the context of a conjunctively
defined ECP. However, as discussed above, Rizzi’s approach relies on several unmotivated
stipulations concerning the licensing features of overt and null elements within the CP layer (i.e., Spec, CP and C°) (modified from Deprez 1994: 123):

- Empty [-predictive] complementizers can be licensed as governors via spec-head agreement (A-Bar Agreement) but overt [-predictive] complementizers may not.
- Overt [+predictive] complementizers can be licensed as governors via predication agreement (A-Agreement), but null [+predictive] complementizers may not.
- Overt wh-operators in Spec,CP (like ‘who’) can trigger spec-head agreement (A-Bar Agreement) with C°, but null operators (‘OP’) may not.

Therefore, I concur with Deprez’s (1994: 123) conclusion that Rizzi’s proposal ‘amounts to little more than a mere description of the facts’ while leaving the contrast between interrogatives and relatives with respect to that-trace effects essentially unexplained.

In addition, Rizzi’s analysis also depends on the notion of proper government of traces in accordance with the ECP. Due to its hyper-complexity, the concept of Government has been abandoned within the current MT framework, making the status of Rizzi’s generalizations within MT unclear at best. Chomsky and Lasnik’s (1977) descriptive That-Trace Filter represented an initial attempt to account for this contrast. Later, that-trace effects were treated as part of the ECP (Lasik and Saito 1984). Rizzi (1990) modified earlier ECP accounts of that-trace effects within the framework of Relativized Minimality. However, attempts to explain that-trace effects in terms of the ECP relied on the notion of proper government of traces, a concept which has been abandoned in the current MT framework. One may safely conclude that there has never been a satisfactory explanation of the asymmetry between subject-extracted interrogatives (32-33) and subject-extracted RRCs (34) with respect to that-trace effects.

Like the Doubly Filled COMP filter, that-trace effects represent another challenge to the standard wh-movement analysis of relatives. The root of the Doubly Filled COMP problem and of the that-trace problem is directly related to the unexplained cross-linguistic
variation found in the distribution of relative elements in the COMP area of RCs. Gaining a better understanding of the cross-linguistic variation found in the COMP area of RCs is a prerequisite for making progress in these unresolved areas of syntactic theory.

3.4 Conclusion

This chapter presented an outline of the standard GB wh-movement analysis of RRCs as well as a description of some of the problems it faced. The most difficult challenge regarding the syntax of relatives is accounting for the tremendous cross-linguistic variation found in the COMP area of relatives; a brief overview of this problem was provided in section 3.3.1. This general issue is directly related to two more narrowly defined problems facing the wh-movement analysis: the Doubly Filled COMP Filter effects and that-trace effects. The general consensus in the literature is that none of these three problems has been satisfactorily resolved.

Overt wh-pronouns, overt complementizers and null wh-operators and null complementizers appear to fulfill the same syntactic functions (i.e., subordination, governing traces of movement, agreement, etc.) in the COMP area of RCs. In some instances, these elements appear in a complementary distribution, such as the qui/que alternation in French or the use of the complementizer ‘que’ in subject and direct object relatives in Spanish. In other cases, these elements appear in free variation, as in the English sentence ‘The man [who/that/Ø I saw] robbed a bank’ and in Spanish non-restrictives, in which the complementizer ‘que’ alternates freely with wh-pronouns like ‘quien’. Up to the present date, syntactic theory has failed to offer a satisfactory account of this variation and its interaction with other components of grammar.
Chapters 4 and 5 will focus on developments in Romance and argue that the primary reason for this failure is that a synchronic wh-movement approach to RCs represents only one part of the solution. In order to make some sense of the cross-linguistic distribution of relative elements in the COMP area of RCs, it is necessary to understand the diachronic development of relative elements over an extended period of time. Chapter 4 will analyze the diachronic development of relative clauses and relative elements in order to demonstrate that the differences found in COMP area of post-nominal RCs are superficial distinctions that evolved over time as pronominal elements (demonstrative pronouns in Germanic and indefinite wh-pronouns in Romance) were grammaticalized into relativizers, representing an evolution from pronominal elements into subordinating elements (i.e., complementizers). Chapter 5 will frame this evolution as an instance of grammatical change within the context of the grammaticalization framework outlined in Roberts and Roussou (2003) and apply this analysis to various types of headed RRCs in Spanish.
Chapter 4

Correlatives: The origins of relative clauses

4.1 Introduction

Chapter 3 presented an overview of some of the problems faced by the standard GB wh-movement analysis of post-nominal RRCs in languages like English and Spanish. It was shown that the root cause of the problems outlined in Chapter 3 is related to variation in the COMP area of RCs, both language-internally and cross-linguistically. To date, researchers have been unable to discover a system that governs the distribution of relative elements in the COMP area of RCs or provide an account of why such variation exists in the first place.

Given the failure of strictly synchronic approaches to provide much traction on this issue, this chapter argues that the seemingly unsystematic distribution of relative elements in post-nominal RCs can only be understood if their diachronic origins and development are taken into account; this includes the development of RCs as a whole as well as development of relative elements such as relative pronouns and complementizers. Following Haudry (1973), whose work in this area is also cited by Bianchi (1999) and Bauer (1995), it is argued that post-nominal RCs in Romance developed from earlier correlative structures in early Indo-European (IE) dialects and Latin.

From these early correlative structures, subordinated postnominal relative clauses developed in Romance. It will be shown that correlatives that existed in early IE dialects, which had basic OV word order, were subject to a considerable degree of syntactic variation with respect to the position of modifying clauses, the presence or absence of subordination markers as well as the presence or absence of a full DP (or pronominal DP)
in both the modifying clause and the matrix clause. The variation in early (correlative and
prenominal) modifying clauses has had pronounced effects on certain phenomena that are
attested in the syntax of early postnominal RCs in Latin.

As the basic word order of Latin and early Romance languages shifted from SOV to
SVO (Bauer 1995; Harris and Campbell 1995: 230), preposed correlative clauses were
While this change occurred in conjunction with the shift from SOV to SVO word order in
Latin, previous research suggests that it is incorrect to state that the shift from SOV to SVO
was itself a cause of the change favoring postnominal RCs. Instead, it appears that
processing factors played a central and most likely causal role in this shift; the role of
processing factors in this change will be addressed in Section 4.4.

As innovative postnominal RCs became the norm in Romance, clause-initial
indefinite pronouns in the earlier correlative and prenominal structures developed into the
relativizers we find today in Spanish, Italian and French. This chapter focuses on the
transition from correlatives to relatives, while Chapter 5 explores how this transition can be
applied to the problem of variation in the CP area of RCs which was outlined in Chapter 3.
Section 4.2 deals with the syntax of correlatives and highlights some of the properties of
correlatives in early IE dialects and in Latin. Section 4.3 outlines some previous approaches
regarding the syntax of the change from correlatives to RCs. Section 4.4 provides an
alternative syntactic analysis of the transition from correlatives to RCs that avoids the
problems of previous approaches. Section 4.5 offers some concluding remarks.
4.2 The origins of relative clauses in Indo-European: Correlatives

Following Haudry (1973), Bauer (1995) and Bianchi (1999), I take the position that
the post-nominal RCs found in modern Romance and Germanic developed from correlative
structures that existed in early Latin, proto-Germanic and early Indo-European dialects such
as Hittite and Vedic. As pointed out by Bianchi (1999: 86), correlatives constitute a normal
relativization strategy in many languages, including modern languages (Mandingo, Hindi,
Walpiri) as well as many ‘older’ languages (Sanskrit, Latin, Vedic, Old English, Medieval
Russian) (Keenan 1985). Two examples from Latin are given below:

(1) a. …quibus diebus Cumae liberatae sund obsidione,
   …on-which days Cuma released was from-the-seige,
   isdem diebus … Tib. Sempronius … prospere pugnat
   on-the-same days … Tib. Sempronius … victoriously fights
   ‘Tib. Sempronius won a victory in the same days in which Cuma was released
   from the seige’ (Livy 23, 37, 10) (Bianchi 2000a: 54)73

   b. …terra pulli qui nascentur, eos in terram deprimito
   …Earth scions which will-spring, these in Earth press.IMPERATIVE
   …Press into the Earth scions that will spring from (the ground)…’ (Cato, de
   Agricultura, 51, 1, 2)

With respect to terminology, I will refer to the first clause (i.e., the clause introduced by
‘quibus diebus’ in (1)) as the CRC (Correlative Relative Clause) and the second clause (i.e.,
the clause that begins with ‘isdem diebus’ in (1)) as the MC (Matrix Clause). I will refer to
the shared DP in the CRC (i.e., ‘quibus diebus’ in the CRC in (1)) as the CRC-DP and the
shared DP in the MC (i.e., ‘isdem diebus’ in the MC in (1)) as the MC-DP. Note that in (1a)
the MC-DP is a full copy of the shared noun (i.e., ‘determiner + noun’), while in (1b) the
MC-DP is a pronominalized copy (i.e., ‘eos’) of the shared noun. In both (1a) and (1b), the
CRC-DP contains a full copy of the shared noun (i.e., ‘diebus’ in (1a) and ‘pulli’ in (1b)). I
introduce this terminology to avoid ambiguity and because the terminology employed in published research on correlatives varies from author to author\textsuperscript{74}.

A striking feature of CRCs in general and of (1a-b) is the presence of the shared noun, either as a full nominal or as a pronominal, in both the CRC and the MC. The following Latin examples are similar to (1), but note that the position of the CRC with respect to the MC-DP is different:

\begin{enumerate}
\item (2) a. Omnibus rebus ad profectionem comparatis diem dicunt, all things for departure having-been-provided day they-affirm, qua die ad ripam Rhodani omnes convenient. on-which day to bank of-Rhone all will-meet ‘With everything for the expedition having been provided, they appoint a day on which they should all meet on the bank of the Rhone’ (Caesar, Bellum Gallicum, 1, 6)

\item b. …ultra eum locum, quo in loco Germani consederant, … beyond the place, which in place the-Germans had-encamped, … ‘beyond the place in which the Germans had encamped’ (Caesar, Bellum Gallicum, 1, 48) (Hale and Buck 1966: 156)\textsuperscript{75}
\end{enumerate}

While both clauses contain an overt copy of the head noun (i.e., ‘diem/die’ in (2a) and ‘locum/loco’ in (2b)), the CRCs in (2a-b) appear in post-nominal position, unlike the preposed position of the CRC in (1a-b). In fact, the position of the CRCs in (2a-b) is the same as that of post-nominal RRCs in modern Romance languages such as Spanish. The importance of this structural similarity as well as the relationship between the structures in (1a-b) and (2a-b) will be addressed in Section 4.4.

In (1a), the CRC precedes the MC and the head noun (‘diebus’) is present in both the CRC and the MC\textsuperscript{76}. In CRCs in other older Indo-European languages, the more common configuration was to find the head noun present in only one clause (typically the preposed CRC), with the other clause (typically the postposed MC) containing an anaphoric
pronominal or demonstrative element. This configuration is shown in the Latin example in (1b)\(^{77}\). Similar examples from Old English (3) and Hittite (4) are given below:

(3) \(\text{ðone ston } \text{ðe } \text{ða wyrntan awurpon, } \text{ðes}
\text{The.ACC stone.ACC that the workers rejected that.NOM}
\text{is gewerdet on } \text{ðaere hyrnan heafod}
\text{is become on the corner head}
\text{‘The stone that the workers rejected has become the cornerstone’ (Harbert 1983: 522).}

(4) \(\text{kaskalaz kuit } \text{āššu utahhun [particle]}
\text{campaign.ABL which.NOM/ACC goods.NOM/ACC I-bought [particle]}
\text{apedanda hališšijanun that.INSTR I-caused-to-be-inlaid}
\text{‘I had (the temples) inlaid with the goods which I brought back from the campaign.’}
\text{(Justus 1976: 233).}

(3-4) show the basic sentence structure of unmarked correlatives in older Indo-European languages\(^{78}\).

Why should we assume that correlatives the examples given above and headed RRCs of the type found in modern Germanic and Romance are related in the first place? In addition to the arguments given in Haudry (1973) and Bauer (1995), Bianchi (1999: 87) notes that in languages which employ both that correlative option and the headed RC option, including Latin, Old English and Hindi, the same relative morpheme is utilized in both structures. For example, in Latin ‘qui’ appears as the relative marker in both correlatives and headed RCs (Bianchi 1999; Bauer 1995), while the same is true for ‘jo’ in Hindi (Bhatt 2003; Mahajan 2000; Masica 1972) as well as other modern Indo-Aryan languages that employ correlatives, such as Bengali and Gujarati (Bhatt 2003; Masica 1972). This cross-linguistic parallel between correlatives and headed relatives strongly suggests that correlatives and headed relatives are syntactically related. In addition, the similarity between the examples in (2a-b) and post-nominal RRCs in modern Romance
languages indicate that correlatives and headed RRCs are related.

4.2.1 The syntax of correlatives: The adjunction site

Now, let’s consider what the syntactic structure of a correlatives like (1a-b) might look like based on research on the syntax of CRCs in modern languages. CRCs in modern languages (i.e., Hindi and other Indo-Aryan languages (Srivastav 1991; Dayal 1996; Bhatt 2003)) have been analyzed as left adjoined to one of two possible adjunction sites: to MC-DP or to the IP that contains DP-MC (Grosu 2002: 14; Srivastav 1991; Bhatt 2003). These two options are represented schematically below (assuming SOV word order for a language like Latin):

(5)

(Based on (15) in Bhatt (2003: 495))
The structure in (5) is adopted by Srivastav (1991) and Dayal (1996), while the structure in (6) is adopted by Bhatt (2003) on the basis of correlative constructions in Hindi, which is a modern SOV language from the same Indo-European group (i.e., Indo-Aryan) as Vedic/Sanskrit. Note that in (6), the CRC is base-generated as a left-adjunct to the object DP within the MC and subsequently raises to a higher position in the MC (i.e., adjoined to IP, or perhaps some other functional projection).

In considering the syntactic structure of correlatives in older Indo-European languages, there are several options that present themselves. One is to assume that correlative constructions were originally paratactic and that the CRC and the MC were two independent sentences that were not syntactically connected in any way. This assumption is controversial (Baldi 2002: 91) and is usually associated with the broader view that (complex) hypotactic structures *in general* have evolved from (simplistic) paratactic structures, which has been criticized on a number of fronts (for discussion of the ‘parataxis...
to hypotaxis’ debate, see Harris and Campbell 1995: Chapter 10; Newmeyer 1998: 274-275; Baldi 2002: 90-91). In her discussion of Latin correlatives, Bauer (1995: 160) states that CRCs are not subordinate to MCs, but rather the two clauses are codependent on one another and notes that ‘neither clause could exist without the other’, even though CRCs and MCs frequently resemble independent clauses. The same descriptive generalization seems to hold for Hittite, Vedic and Old English correlatives. Therefore, it seems logical to assume that in these languages CRCs were in some way syntactically connected to MCs, regardless of whether at some point in the distant past such structures, or perhaps all complex structures, were truly paratactic in nature. If one accepts the assumption that CRCs were in some way syntactically connected to MCs, (5) and (6) represent two possible options regarding how the CRC was syntactically connected to the MC.

Given that modern prenominal and postnominal RCs are normally assumed to be adjoined to the MC-DP, positing a structure like (6) for CRCs is appealing because the transition from CRCs to RCs could be analyzed as a simple loss of movement (i.e., overt movement becomes covert movement). Note that if the CRC in (6) does not undergo (overt) raising, it would remain in the position in which it was base generated (i.e., left-adjoined to the DP-MC), which coincides with the position where prenominal RCs occur syntactically. Thus, the shift from CRCs to (prenominal) RCs could be accounted for in a simple and direct way, via loss of overt movement.

The alternative is to posit a structure like (5) for CRCs, which assumes that correlatives in older Indo-European languages were left-adjoined to IP. (5) is in fact that standard analysis of correlatives in modern Indo-Aryan languages such as Hindi, with (6) representing a recent alternative structure proposed by Bhatt (2003). If one assumes (5) to be correct, the transition from CRCs to prenominal RCs would involve a change in the
adjunction site from IP (for CRCs, as in (5)) to the MC-DP (i.e., the base position of the CRC in (6)).

Given the limitations of working with older languages like Latin, Hittite and Old English, it is difficult to determine whether (5) or (6) more accurately describes the position of CRCs in these languages. I assume that (5) is correct for several reasons, though the analysis in the sections that follow is generally compatible with either analysis. The primary reason for this assumption is that CRCs in Hittite and Vedic differ from their Hindi counterparts in important ways. CRCs in Hittite and Vedic may appear at either the left periphery or the right periphery of the MC (Berman 1972; Held 1957; Hettrich 1988; also see section 4.2.2 below), as shown schematically below:

(7) CRC on the left periphery: \([_{CRC} \text{CRC-DP}…]_{MC} \text{MC-DP}\]

(8) CRC on the right periphery: \([_{MC} \text{MC-DP}…]_{CRC} \text{CRC-DP}\]

In Hindi, however, CRCs always appear to the left of the MC-DP, either on the left periphery of the MC or adjoined to the left of the MC-DP (i.e., inserted within the MC), as shown below:

(9) CRC on the left periphery: \([_{CRC} \text{CRC-DP}…]_{MC} \text{MC-DP}\]

(10) CRC adjoined to MC-DP: \([_{MC} \text{MC-DP}…]_{CRC} \text{CRC-DP} \text{MC-DP}…]\]

The fact that (10) is possible, albeit according to Bhatt (2003) much less common than (9), in Hindi gives some evidence in the overt syntax that CRCs may be adjoined to the MC-DP. Bhatt claims that his proposed structure in (6) represents a single base syntactic structure that can account for the surface word orders in both (9) and (10), something that is not possible if one assumes (5) to be correct. However, since structures like (10) are not attested in Hittite or Vedic, the evidence that a structure like (6) might have been possible for CRCs in those languages is not as strong as it is for Hindi.
A second reason for assuming that (5) is the correct structure for CRCs in Hindi and Vedic is that CRCs in Hittite in Vedic may appear at either the left periphery (as in (7)) or the right periphery (as in (8)) of the MC, suggesting that they are adjoined to some peripheral projection (i.e., such as IP or CP) of the MC as opposed to a subject or object argument DP within the MC. In Hindi, however, CRCs always appear to the left of the MC-DP (Bhatt 2003), as shown in (9-10), and may appear embedded within the MC (as in (10)).

These differences suggest that (5) is a more likely structure for CRCs in older Indo-European languages such as Hittite and Vedic as compared to (6). Thus, I assume that (5) is the syntactic starting point in the transition from CRCs to modern RCs in Romance and Germanic. However, the analysis provided in the sections which follow is compatible with assuming that either (5) or (6) was the starting point in this evolution.

4.2.2 Variation in correlatives

While previous research has not shed much light on the underlying syntactic structure of CRCs in early Indo-European languages, scholars have noticed that attested correlatives in many of these languages are subject to a high degree of variability within individual languages as well as cross-linguistically. Consider Hittite as an example:
a. The CRC typically precedes the MC (Berman 1972; Bauer 1995), though some attested examples of the reverse order are found in Held (1957) (Berman 1972).

b. CRCs were frequently marked by an inflected form of the marker KU- (as in (4) above), but the presence of this marker was optional (Berman 1972).

c. The presence of the shared NP in the CRC may be represented by a full NP (with or without the KU- marker), by a pronoun (frequently the KU- form without an accompanying NP) or by a null nominal (i.e., no marker or NP is overtly present) (Berman 1972; Justus 1976; Downing 1978).

d. The presence of the shared NP in the MC may be represented by a DP (demonstrative determiner + NP compound), by a demonstrative alone (without an accompanying NP) or by a null nominal (i.e., no demonstrative or NP is overtly present) (Justus 1976; Berman 1972; Lehmann 1992; Downing 1978; Bauer 1995).

e. When present, the KU- marker in CRCs may or may not be fronted within the CRC (Berman 1972; Downing 1978). According to Berman (1972) and Luraghi (1997: 65-66), CRCs which refer to an indefinite/non-specific NP have the KU-marker (along with the CRC-DP, if present) fronted, while CRCs that refer to a definite/specific NP do not have the KU- marker fronted. According to Justus (1976), the KU- marker is best described as a type of a topic/focus marker, as opposed to a relative marker.

f. When present, the KU-marker may be placed either before the antecedent or after the antecedent within the CRC. Lehmann (1974: 63-4), citing data in Friedrich (1960: 167-9) and Held (1957), proposes that in CRCs which refer to an indefinite/non-specific antecedent (in the MC) the KU-marker precedes the head noun, while in CRCs that refer to a definite/specific antecedent (in the MC) the KU-marker is placed after the head noun.

g. The nominal element in the rightmost (second) clause (i.e., either the CRC or the MC) may be pronominalized (Berman 1972). From this, we can infer that in correlative structures where the shared noun occurs overtly only once, the overt noun tends to occur in the first (leftmost) clause, which was typically the CRC.

Hettrich (1988) notices some similar (though not identical) tendencies in Vedic/Sanskrit correlative structures, including some variability in the order of the CRC and the MC with respect to each other (i.e., CRC-MC order versus MC-CRC order) and the presence or absence of full NPs, pronouns or null nominals in the respective clauses.

Lehmann (1974: 61-68), relying on data in Delbrück (1871: 33-34), noted that in Vedic correlative structures, the head noun may appear in both the CRC and the MC, in the MC alone or in the RC alone. Importantly, as noted by Kiparsky (1995: 165, fn. 30) and Hock
Hettrich (1988) also notes a strong tendency for the head noun to be overtly present in the leftmost (first) clause, whether it be the CRC or the MC. This parallels Berman’s observation about optional pronominalization in Hittite (see (11g) above).

Variation of this type is not limited to archaic languages like Hittite and Vedic/Sanskrit. Modern verb-final languages that employ correlative also show syntactic variation in ways similar to their older Indo-European counterparts. In tensed Hindi correlatives, Mahajan (2000) explicitly states that the head NP may appear in the CRC alone, the MC alone, in both the CRC and the MC or in neither the CRC or the MC. In Hindi, tensed CRCs may precede the MC or be left-adjointed to the MC-DP (Bhatt 2003: 495-496; Srivastav 1991; Dayal 1996), with the latter option being less frequent (Bhatt 2003: 495). In some Indo-Aryan languages such as Gujarati and Marathi, the CRC-DP may be null (Bhatt 2003: 522-523; Masica 1972), giving the correlative the look of an asyndetic prenominal RC; in contrast, other Indo-Aryan languages such as Hindi and Punjabi do not allow null CRC-DPs (Bhatt 2003: 522). Hindi is typical of other Indo-Aryan languages is that it utilizes the same relative marker (‘jo’) in correlatives and headed relatives.

The variation that was characteristic of correlative structures in early Indo-European languages such as Hittite and Vedic/Sanskrit will be useful in explaining some phenomena associated with embedded relative structures found in early Romance and Germanic languages, such as case attraction and inverse case attraction.
4.3 From correlatives to relatives: Previous research

Previous research has explored the idea that RCs in modern Romance and Germanic are diachronically related to earlier correlative structures. Bauer (1995), Pittner (1995) and Bianchi (1999) offer proposals that intend to explain how CRCs evolved into RCs. These proposals are presented and critiqued in the sections which follow. Then, in section 4.4 I present my own proposal, which avoids the problems associated with earlier analyses.

4.3.1 From correlatives to relatives: Bauer (1995)

Bauer (1995: 160-165) analyzes the shift from CRCs to RCs in Latin. Unfortunately, Bauer bases her analysis on modified Latin examples so there is some question regarding the reliability of the sentences she uses to illustrate her diachronic analysis. The examples given by Bauer are provided below; the original Latin sentence that Bauer modified for her examples is provided in [brackets] immediately following each example:

(12) quam                urbem      statuo           ea               urbs             vestra         est
     What.ACC    city.ACC    I-build    that-NOM    city.NOM   yours.NOM     is
     ‘the city I build is yours’ (Bauer 1995: 160)
     [Original Latin Sentence: urbem quam statuo, vestra est (Virgil, Aeneid, 1, 573)]

(13) qui                        pulli           nascentur           eos                pullos
     What.NOM    scions.NOM    will-spring     these.ACC     scions.ACC
     press.Imperative
     ‘press down the scions that will spring’ (Bauer 1995: 160)
     [Original Latin Sentence: see (1b)]

Bianchi’s also asserts that (13) could take an alternate form, one in which the order of the first two words ‘qui’ and ‘pulli’ can be reversed. This is shown in (14):
As I trace Bauer’s analysis below, it is important to keep in mind that none of her examples in (12-14) are attested examples; rather they are modified versions of the Latin original sentences provided in [brackets] after each example.

Bauer asserts that the phenomenon of ‘inverse case attraction’ (ICA) provides evidence of an intermediate stage between CRCs and RCs. In ‘normal’ post-nominal RRCs in modern Romance languages, the head noun is marked with the Case of the matrix clause, while the relative pronoun is marked with the Case of the RC (i.e., the head noun and the relative pronoun are not marked with the same Case feature unless the Case that is assigned by the RC coincides (incidentally) with the Case that is assigned by the MC). ICA involves cases where the head noun is marked with the Case of the RC as opposed to that of the MC, and thus the head noun and the relative pronoun ‘agree’ in the sense that they are marked with the same Case. In relatives with ICA, the Case of the head noun superficially appears to be ‘attracted’ to the Case of the relative pronoun, hence the term ‘attraction’. As an example of ICA, Bauer uses the original Latin sentence that served as the basis for her example in (12):

(15) urbem quam statuo vestra est
    city.ACC which.ACC I-build yours is
    ‘The city which I build is yours’ (Virgil, Aeneid, 1, 573)
    (Bauer 1995: 164)86

Bauer uses sentences (12-15) as the basis of her analysis regarding the change from CRCs to RCs in Latin/Romance. Using (15) as an example, Bauer argues that ‘urbem’ is reanalyzed as belonging to the matrix clause (i.e., the subject of the predicate ‘vestra est’).
as opposed to the modifying clause (‘quam statuo’). For Bauer, ICA is simply an intermediate stage between the correlative in (12) and (16), which is another modified sentences created by Bauer to illustrate the steps in her analysis.

(16) urbs quam statuo vestra est  
    city-NOM which-ACC I-build yours is  
    ‘The city I build is yours’ (Bauer 1995: 164)  
    [Original Latin Sentence: urbem quam statuo, vestra est (Virgil, Aeneid, 1, 573)]

Thus, Bauer’s example in (16) would represent a normal headed relative in which the head noun (‘urbs’) is assigned case by the verb in the MC (‘est’) while the relative pronoun (‘quam’) is assigned case by the verb in the RC (‘statuo’).

One problem with Bauer’s analysis is that she relies on modified Latin sentences as the basis for the stages in her proposal (i.e., (12-14) and (16) are modified sentences that are unattested in Latin). Readers need to make a judgment regarding the reliability of Bauer’s changes to the original Latin in order to accept the stages in the development from CRCs to RCs that she proposes.

A second problem with Bauer’s analysis relates to the phenomenon of ‘case attraction’ (CA), in which a relative pronoun is overtly marked with the Case of the MC as opposed to the Case of the RC. In the following abbreviated example, the relative pronoun ‘quo’ has the ablative (ABL) case of its antecedent as opposed to the accusative (ACC) case that it would typically receive from the RC-internal verb ‘nosti’:

(17) …notante iudice quo nosti…  
    …judging judge-ABL quo-ABL you-know  
    ‘judging the judge who(m) you know’ (Horace, Satirae, 1, 6, 15)  
    (Bianchi 2000a: 58)

Given that under Bauer’s analysis the relative pronoun is always base generated within the RC, CA is not expected and she offers no explanation for it in her analysis.
Finally, a more serious problem for Bauer’s analysis relates to the nature of the reanalysis she proposes. If one looks strictly at the linear order of words and ignores hierarchical syntactic structure, Bauer’s analysis could be plausible, as (15) represents the normal word order found in post-nominal headed RCs in Germanic and Romance (i.e., the city which I build). However, from a syntactic perspective that that takes hierarchical structure and constituency into consideration, Bauer’s analysis involves a radical reanalysis across a clause boundary: an element of the CRC (‘urbem’) must be reanalyzed as belonging to the MC. If CRCs are adjuncts, along the lines of the structures provided in (5) and (6), it is difficult to see how an NP contained within the CRC can syntactically ‘jump’ over to the MC. In the case of a sentence like (12) gradually evolving into a sentence like (16), with (15) being an intermediate stage, the renalaysis of ‘urbem’ proposed by Bauer entails that ‘urbem’ would have to move from being base generated in its argument position within the CRC to being base generated in Spec,VP (i.e., subject position) of the MC. It is difficult to see how such a reanalysis can take place given the hierarchical syntactic structure of adjoined CRCs shown in (5-6). Therefore, Bauer’s analysis seems problematic from a syntactic point of view.

4.3.2 From correlatives to relatives: Pittner (1995)

Based on her analysis of Old High German (OHG), Pittner (1995: 218-221) proposes a different analysis of how correlatives evolved into headed relatives. Pittner argues that the relative pronoun in German originated in the MC as a cataphoric87 correlative pronoun whose function was ‘point forward’ to a following asyndetic relative clause. The empty argument position in the postposed asyndetic RC is filled by pro. Pittner cites Dal (1966: 198) in claiming that asyndetic relatives were very common in early Germanic (the same
claim in made in Lockwood (1968: 242). Schematically, can be represented as follows, with NP representing the head noun and the brackets ([]) indicating clausal boundaries:

(18)  $[MC \ldots NP \text{correlative}] [CRC \text{pro}\ldots]$

At this stage, both the NP and the correlative pronoun are base generated in the MC and thus Case marked within the MC. If accurate, (18) would provide a straightforward explanation for CA.

The next stage in Pittner’s analysis involves reanalyzing the relative pronoun as part of the following RC; as a result the *pro* in the CRC in (18) is deleted, as its position in the RC is now filled by the correlative pronoun:

(19)  $[MC \ldots NP] [CRC (cor)\text{relative}\ldots]$

In (19), the correlative continues to bear the case of the MC even though it has been reanalyzed as part of the RC; Pittner’s states that the stage shown in (19) provides an explanation for cases in which OHG texts indicate (through meter and punctuation) that the correlative pronoun is part of the RC while still retaining the Case marking of the MC.

In the final stage of Pittner’s analysis, the correlative pronoun becomes a relative pronoun fully integrated into the RC and thus receives its Case from the RC (and not the MC):

(20)  $[MC \ldots NP] [RC \text{relative}\ldots]$

The structure in (20) is found in modern Romance and Germanic; the head noun receives Case from the MC and the relative pronoun receives Case from the RC.

With respect to ICA, Pittner notes that in almost all cases of “inverse attraction”, there is always a pronoun in the matrix clause:
Therefore, these cases seem to be indistinguishable from the ‘normal’ correlative structures shown in (3-4), given that both the MC and the modifying clause contain a DP in argument position\textsuperscript{88}.

Pittner’s analysis provides a sharp contrast to Bauer’s approach, yet both involve reanalysis across clause boundaries (albeit of distinct elements and in different directions). Bauer’s proposal involves a reanalysis of the head noun across a clause boundary, originating in the RC and moving to the MC. In contrast, Pittner’s analysis involves a reanalysis of the relative pronoun across a clause boundary, originating in the matrix clause as a cataphoric pronoun and moving to the RC. Since both analyses involve reanalysis across a clause boundary, the same criticism that applied to Bauer analysis is applicable to Pittner’s analysis. If we assume that CRCs were adjoined to MCs in the earliest stages, as shown in (5-6), it is difficult to see how the cataphoric correlative pronoun can ‘jump’ from the CRC (in (18)) to the RC (in (19)); this criticism was also noted by Bianchi (1999: 293-294, fn. 37).

A second problem with Pittner’s proposal is acknowledged by Pittner herself and also pointed out in Bianchi (1995: 293-294, fn. 37). In (19), which is an intermediate stage in the development, the correlative pronoun has already been reanalyzed as part of the RD (presumably located in Spec,CP of the RC), but it still receives case as if it were in the MC. Pittner’s conception of how the (cor)relative pronoun is case marked in (19), which
involves Case marking across a clause boundary, is not well motivated or supported by independent evidence.

4.3.3 From correlatives to relatives: Bianchi (1999)

Of the three proposals presented here, Bianchi’s is by far the most detailed and complex. In support of a head raising analysis for RCs, Bianchi (1999: 91-92) also argues that headed RCs in Romance and Germanic have their origin in earlier correlative structures. Bianchi’s analysis is based on Haudry (1973). The first stage involves a ‘normal correlative dyptic’ like the examples in (3-4). For purposes of exposition, consider a hypothetical ‘normal’ correlative glossed in English:

\[(22) \quad \text{Which judge you know / he lives here.} \]
\[\quad \text{‘The judge who you know lives here.’} \]

In the first stage, an initial CRC (containing the head noun and a determiner) is followed by the MC (containing an anaphoric demonstrative pronoun). Bianchi considers the CRC to be an ‘adverbial adjunct’; by this, I assume she means that it is IP adjoined similar to the CRC in (5). This first stage is shown schematically, below based on (22):

\[(23) \quad [CRC \text{ who judge you know}] [MC \text{ he lives here}] \]

The second stage involves inversion of the relative head ‘judge’ and its determiner ‘who’; the MC retains an overt anaphoric demonstrative pronoun (‘he’). This gives the following structure:

\[(24) \quad [CRC \text{ judge who you know}] [MC \text{ he lives here}] \]

Once stage two has taken place, stage three involves the NP head ‘judge’ being reanalyzed as a constituent of the MC, while the CRC is transformed from an adverbial adjunct (23-24)
to a modifier of the head NP ‘judge’ (25)\textsuperscript{89}:
\begin{equation}
(25) \quad [_{\text{MC}} \text{(the) judge}_{\text{RC}} \text{ who you know}] \text{ lives here}
\end{equation}

Once the NP ‘man’ is reanalyzed as part of the MC, the demonstrative pronoun ‘he’ in (24) becomes superfluous and thus disappears by the time stage three is complete in (25).

Bianchi notes that if one wishes to accept the (23-25) as developmental stages in the transition from CRCs to RCs in the context of an adjunction analysis for Romance and Germanic RCs, two radical reanalyses are necessary. First, the head noun ‘judge’ must be reanalyzed across clause boundaries, as it begins as an argument of the CRC (23-24) and ends up as an argument of the MC (25). Recall that this is the central problem that was mentioned in connection to Bauer’s proposal in Section 4.3.2.1. Second, the modifying clause must change from an (adverbial) IP adjunct (as in (23-24)) to a DP/NP adjunct (as in (25))\textsuperscript{90}.

Given that these objections are related to standard adjunction analysis of RCs, Bianchi dispenses with the adjunct analysis and recasts Haudry’s proposal (shown in (23-25)) in the context of the HR approach to RCs (see Chapter 2). The first two stages of the original proposal, shown in (23-24), essentially remain unchanged, though Bianchi adds some detail about the exact syntactic location of certain elements. In the first stage, which corresponds to (23), the CRC contains a fronted DP (‘which man’) in Spec,CP. The CRC is IP adjoined to the MC and precedes the MC. This is shown below:
The second stage, equivalent to (24), involves inversion of the NP ‘judge’ and its determiner ‘who’. Syntactically, Bianchi raises the NP to Spec,DP, with the raised DP maintaining its position in Spec,CP, as shown below:
After stage two, which is shown in (25), Bianchi notes that the NP head (‘judge’) occupies the ‘most prominent position’ within the CP projection of the CRC. She further argues that the prominence of the head NP causes a ‘nominal functional head’, specifically a $D^\circ$ projection, to be introduced above the CP projection of the CRC, giving the structure in (28):
Note that in (28), the CRC is no longer an IP adjunct as in (26-27); instead, it is now a complement of a newly introduced $D^\circ$ projection. The introduction of this new $D^\circ$ makes the correlative pronoun ‘he’ in (25-27) superfluous, hence it is eliminated and its argument position within the MC is filled by this new $D^\circ$ projection (along with its CP complement).

Bianchi argues that her analysis can account for instances of ICA as well as CA. ICA is seen as an ‘intermediate stage’ in the development of CRCs into RCs, exemplified by the structure in (27). In (27), both the head noun ‘judge’ and the relative pronoun ‘who’ are constituents of the modifying CRC, and thus both elements are Case marked with the Case associated with the CRC. The demonstrative ‘he’ in the matrix clause in (27) is optional (i.e., may or may not appear overtly). Thus, (27) provides an account of ICA.

With respect to CA, in which the relative pronoun and the head noun both share the case associated with the MC, Bianchi’s proposal ‘rests on a particular conception of’
morphological Case.’ Recall from the discussion in Chapter 2 (see sections 2.4.2 and 2.4.3) that under the head raising analysis, the head noun in structures like (28) is within the minimal domain of the external determiner (shown as ‘the’ in (28)). In (28), both the head noun ‘judge’ and the relative pronoun ‘who’ are base generated in direct object position and would therefore receive ACC case from the verb ‘know’ in the RC. However, Bianchi argues that because ‘judge’ lies within the minimal domain of the external determiner in (28), ‘judge’ has its original ACC Case feature erased and subsequently receives NOM Case from the external determiner. Note that in (28), the determiner ‘who’ is also within the minimal domain of the external determiner. Using the same logic that applies to the Case assignment of ‘judge’, Bianchi argues that ‘who’ has its original ACC Case feature erased and subsequently receives NOM Case from the external determiner. As a result, the head noun ‘judge’ and the relative pronoun ‘who’ share the NOM Case feature associated with the MC. This is shown schematically in (29), where the notation (ACC --> NOM) indicates that ACC case was erased and replaced with NOM case.
Having covered how her proposal can account for ICA and CA, Bianchi turns to how Case is marked in ‘normal’ relatives, in which the head noun and relative pronoun do NOT agree in their Case feature (unless by accident). In order to achieve this, Bianchi is forced to posit an additional relative structure which places the head noun, but not the relative pronoun, within the minimal domain of the external determiner. In Bianchi’s analysis of wh-relatives (See chapter 2, Section 2.4.3, example (42)), she claims that the relative DP (‘who judge’) moves to the specifier position of an unnamed functional head (XP) within the C° system. Spec,XP is not within the minimal domain of the external determiner. The head noun ‘judge’ subsequently raises to Spec,CP, while the relative pronoun ‘who’ remains in Spec,XP. As a result, the head noun ‘judge’ is located within the minimal domain of the external determiner; therefore, its ACC Case feature is erased and replaced by the NOM Case feature of the external determiner. In contrast, the relative
pronoun remains outside of the minimal domain of the external determiner, and thus retains
the ACC Case feature it received from the verb ‘know’. This is shown schematically in
(30):

(30)

Note the different syntactic structures of (29) versus (30). In (29), the relative DP ‘who
judge’ moves to Spec,CP, with subsequent movement of the NP ‘judge’ to Spec,DP. In
contrast, (30) shows that the relative DP ‘who judge’ raises to Spec,XP, with subsequent
movement of the NP ‘judge’ to Spec,CP. Thus, the landing site for both the relative DP
(‘who judge’) as well as the head NP (‘judge’) is different in (29) as compared to (30). In
essence, the differences between (29) and (30) appear to be mechanisms designed to arrive
at the correct Case marking facts for both CA relatives as well as ‘normal’ relatives.

Bianchi’s analysis is highly complex and faces several problems which call into
question the validity of her proposal. Two of these problems relate to the transition from
(27) to (28). First, the contention that a nominal functional head (i.e., the external D°) is
introduced in (28) is not supported by any independent evidence; instead, it seems that introducing the external D° projection is a mechanism for adapting Haudry’s original analysis (shown in (23-25)) to the HR approach for RCs. Second, in the transition from (27) to (28) the modifying clause is transformed from an adjunct (to IP) to a complement of the newly introduced D° projection. Recall that Bianchi objected to the fact that from the perspective of the adjunct analysis, the development of (24) into (25) involved an IP adjunct (in (24)) becoming a DP/NP adjunct (in (25)). In contrast, her proposal changes the adjunct in (24) into the complement of a newly created D° and in addition places this new complex DP (i.e., the external D° together with its CP complement) in argument position within the MC. At face value, it seems that Bianchi’s proposal is at least as complex, if not more so, as compared to positing a change in adjunction site (i.e., from IP to DP/NP). A third problem relates to Bianchi’s explanation of Case assignment in CA relatives and ‘normal’ relatives; this problem was discussed above.

To summarize, Buaer (1995), Pittner (1995) and Bianchi (1999) have presented proposals concerning the manner in which earlier CRCs diachronically evolved into RCs of the type found in Romance and Germanic. The proposals by Bauer and Pittner involve reanalysis (albeit of distinct elements) across clausal boundaries. It was argued that if one considers the hierarchical syntactic structure (i.e., constituency) of CRCs and RCs, it is difficult to see how either the head noun (as in Bauer) or the relative pronoun (as in Pittner) can syntactically jump from one clause to the other. Bianchi’s proposal is in some sense similar to that of Bauer, given that both proposals posit that the head noun of RCs originated within the modifying clause as opposed to the MC. However, unlike Bauer, Bianchi’s analysis does not involve syntactic reanalysis across a clausal boundary. Bianchi’s proposal is complex and relies on a number of assumptions that are not supported
by independent evidence, such as the introduction of an external D° projection in (28) and
the radically different syntactic structures posited for RCs involving CA (as in (29)) as
compared to normal RCs (as in (30)). Given the weaknesses of these previous approaches,
the next section outlines an alternative proposal regarding the evolution from CRCs to RCs
which avoids these problems and offers a syntactically straightforward account for this
diachronic development.

4.4 From correlatives to relatives: An alternative approach

This section presents an alternative to the proposals by Bauer (1995), Pittner (1995)
and Bianchi (1999) regarding the transition from CRCs to RCs. This section presents an
alternative approach which avoids the problems of the proposals outlined in section 4.3.
The consensus of previous research, including Kiparsky (1995), Haudry (1973), Watkins
(1976), Hettrich (1988) and Bauer (1995) is that CRCs were adjoined to MCs; in section
4.2.1, I concluded that CRCs in older Indo-European languages, such as the examples in (1-4)
were syntactically adjoined to IP°, with a syntactic structure similar to the one shown in
(5). This will serve a starting point in tracing the development of CRCs into RCs.
4.4.1 From correlatives to relatives

Section 4.2.2 outlined some of the variation that was typical of correlative structures in older Indo-European languages such as Hittite and Vedic. I will focus my analysis on developments in Romance, though it may also be applied to Germanic. With respect to the structure of correlatives and relatives in Latin, Hittite is particularly relevant because the relative marker ‘ku’ is etymologically related to the Latin relativizers ‘qui, quae, quod, etc.’ (Baldi 2002: 345). Recall from (11) that in Hittite, the relative marker ‘ku-’, which could occur with or without an overt copy of the head noun in the CRC, was fronted in cases where the referent in the MC (i.e., the MC-DP) was indefinite/non-specific. Given this ability to be fronted within the RC, Justus (1976) observed that the ‘ku-’ marker was more of a focus marker than a pure relative marker. In (11), it is also noted that in Hittite the relative marker ‘ku-’ preceded that head noun in CRCs which referred to an indefinite/non-specific referent in the MC. Thus, CRCs in Hittite commonly had a fronted DP (consisting of the ‘ku-’ marker and the head noun, and possibly other lexical material). This closely resembles the Latin correlative given in (1a), which is restated below:

\[(31) \quad \text{…quibus diebus Cumae liberatae sund obsidione,} \\
\text{…on-which days Cuma released was from-the-seige,} \\
\text{isdem diebus … Tib. Sempronius … prospere pugnat} \\
\text{on-the-same days … Tib. Sempronius … victoriously fights} \\
\text{‘Tib. Sempronius won a victory in the same days in which Cuma was released} \\
\text{from the seige’ (Livius 23, 37, 10) (Bianchi 2000a: 54)} \]

Thus, the basic structure of CRCs in Latin and Hittite have a great deal in common, including the presence of an etymologically related relative marker (‘ku-’ in Hittite and ‘qui’ in Latin) in clause initial position. In both languages, the relative marker agreed in
gender and number with the head noun and was marked with the Case dictated by the role of the head noun in the CRC.

In addition to correlative structures like (31), Latin also employed post-nominal RCs which contain a copy of the head noun (i.e., head noun present in both matrix and relative clause). This is exemplified by the sentences in (2a-b), which are repeated below:

(32) a. Omnibus rebus ad profectionem comparatis diem dicunt, all things for departure having-been-provided day they-affirm,
qua die ad ripam Rhodani omnes convenient.
‘With everything for the expedition having been provided, they appoint a day on which they should all meet on the bank of the Rhone’ (Caesar, Bellum Gallicum, 1, 6)

b. …ultra eum locum, quo in loco Germani consederant, … beyond the place, which in place the-Germans had-encamped, … ‘beyond the place in which the Germans had encamped’ (Caesar, Bellum Gallicum, 1, 48) (Hale and Buck 1966: 156)

Latin also employs headed post-nominal RCs the type found in modern Romance and Germanic languages, which are introduced by an overt relativizer and right-adjointed to the head noun:

(33) ea dies [quam constituerat] venit
that-NOM day-NOM [which-ACC he-had-appointed] came
‘that day which he had appointed came’ (Caesar, Bellum Gallicum, 8, 3)

Note that the primary difference between the examples in (32) and (33) is that in (33) the modifying clause does not contain an overt copy of the head noun (i.e., ‘diem/die’ in (32a), ‘locum/loco’ in (32b) and ‘dies’ in (33)).

In Latin, correlative structures like (31) coexisted with post-nominal structures like (32a-b) and (33). Eventually, CRCs disappeared and came to be replaced by functionally equivalent RCs. Importantly, Latin employed the same relative markers (inflected forms of ‘qui’) in the RC varieties shown in (31-33). In Germanic, the relative markers had a
demonstrative origin: inflected forms of the demonstrative ‘se’ in Old English and inflected forms of ‘der’ in Old High German.

As was argued in section 4.2.1, if one assumes that CRCs in older Indo-European languages were syntactically adjoined to IP, then the transition from CRCs to RCs involves a change in adjunction site. The fact that Latin employs preposed structures like (31) and post-nominal structures like (32) provides some evidence that the adjunction site of CRCs in Latin may have changed over time. In Early Latin, CRCs like those in (31), as well as the example given in (1b), were adjoined to IP, and thus CRCs were only peripherally connected to the nominal phrase they modified, the MC-DP. The change in adjunction site from IP to the MC-DP can be viewed as part of a larger process by which peripherally connected CRCs (i.e., adjoined at the right or left periphery of the MC, in the sense of Kiparsky 1995) became fully embedded into the MC as adjuncts to the phrase they modify, the MC-DP. The modifying clause in (33) represents a fully embedded RC, adjoined to the head noun ‘dies’. In addition to the change in adjunction site, two other changes were necessary: a change from left-adjunction (for CRCs) to right-adjunction (for post-nominal RCs) and pronominalization of the copy of the head noun in the RC, which evidently has not yet occurred in the examples in (32). The next two sections address each of these changes in turn.

4.4.1.1 The transition from left-adjointed to right-adjointed relatives

Another stage in the change from CRCs to RCs involves a change in branching: left-adjointed CRCs evolved into right-adjointed postnominal RCs. This change is complex because it occurs in conjunction with another syntactic change that affected both Romance and Germanic languages, specifically a change in base word order from SOV to SVO. Latin
is a heavily inflected language that allows a considerable degree of freedom in the order of subjects, objects and verbs. Overt agreement and Case affixes made grammatical functions and relationships between nouns and verbs clear regardless of whether the order of constituents within a given clause was SOV, SVO or VSO. Despite its flexible word order, Latin is generally considered to be a predominantly SOV language (Pinskter 1990; Bauer 1995; McMahon 1994: 157; Baldi 2002: 91) with some evidence of a transition from SOV to SVO from Early Latin to Late Latin (Bauer 1995; McMahon 1994: 157). It is also generally agreed that the transition from Early Latin to western Romance languages such as Spanish, French and Italian involved a change in basic word order from SOV to SVO (Bauer 1995; Harris and Campbell 1995: 230). However, the causes of the change from OV to VO word order in Romance are unclear, though the loss of overt morphological affixes such as Case (i.e., phonological erosion) has been cited as a factor in this development (Vennemann 1973; Vennemann 1975; for an opposing view, see Harris and Campbell 1995: 216-218). Addressing the causes underlying the change from OV to VO word order in Romance or Germanic is outside the scope of the present study, however the fact that this change did occur in Romance is relatively uncontroversial and accepting this claim will suffice for the purposes of the present study.

In work on linguistic typology and syntactic change, the change from OV to VO word order is frequently associated with other syntactic changes, such as a change from postpositions (with OV) to prepositions (with VO), a change from adjective-noun order (with OV) to noun-adjective order (with VO) or a change from genitive-noun order (OV) to noun-genitive order (VO). These changes are usually associated with Greenberg’s (1963) theory of implicational universals, which argues that certain structural configurations are harmonious or compatible with one another (Baldi 2002: 91). Vennemann (1975), for
example, attempts to incorporate Greenberg’s implicational universals into a theory of syntactic change. In effect, Vennemann proposes that languages ‘drift’ (to borrow the term first used by Sapir (1921)) towards harmonious syntactic types. Studies that claim that ‘drift’ is a cause of syntactic change have been widely criticized on methodological grounds and are not widely accepted (Harris and Campbell 1995: 195; see also Lightfoot 1999). In addition, numerous exceptions to Greenberg’s implicational universals have been identified, and this in turn has had consequences for theories of syntactic drift.

Another syntactic parameter associated with basic word order is the order head NPs and the RCs that modify them. In Greenberg’s terms, RC-NP order is associated with OV word order, while NP-RC order is associated with VO word order. We have seen that CRCs, which were typically prenominal, evolved into postnominal RCs (i.e., modern Romance languages). However, the general consensus of previous research on the topic of syntactic drift indicates that it is insufficient (and probably incorrect) to state that the change from OV to VO word order in Romance caused prenominal CRCs to evolve into postnominal RCs (see, for example, Harris and Campbell 1995; Lightfoot 1999).

Fortunately, previous research has identified a likely cause of the shift from RC-N to N-RC structure: perceptual/parsing factors. Typologically, with very few exceptions97, correlatives and prenominal RCs are restricted to languages with OV word order (Carstens 2002: 8; De Vries 2002; Downing 1978: 400; Cole 1987; Srivastav 1991). This logically entails that languages with VO word order do not employ correlatives or prenominal RCs. Several researchers have suggested that this asymmetry between OV and VO languages is related to ease of on-line psycholinguistic processing. Kuno (1974) has demonstrated that center-embedded (C-E) structures create processing difficulties, and therefore languages tend to avoid center-embedding. For example, if an SOV language employed post-nominal
RCs, a large number of center-embedded structures would result; for example, all sentences in such a language where a post-nominal RC modified either the subject or the object of a sentence would result in a center-embedded structure:

(34)  
a. [Subject [RC] Verb(intransitive)] C-E  
b. [Subject [RC] Object Verb(transitive)] C-E  
c. [Subject Object [RC] Verb(transitive)] C-E

By comparison, an SOV language that employs prenominal RCs generates fewer center-embedded structures:

(35)  
a. [ [RC] Subject Verb(intransitive)]  
b. [ [RC] Subject Object Verb(transitive)]  
c. [ Subject [RC] Object Verb (transitive)] C-E

Thus, while (35) does not completely avoid center-embedded structures, it generates far fewer of them than (36).

Using the same logic, Kuno demonstrates that a VSO language with postnominal RCs (as in (36)) creates fewer center embedded structures than a VSO language with prenominal RCs (as in (37)).

(36)  
a. [ Verb(intransitive) Subject [RC] ] C-E  
b. [Verb(transitive) Subject [RC] Object ]  
c. [Verb(transitive) Subject Object [RC] ]

(37)  
a. [Verb(intransitive) [RC] Subject ] C-E  
b. [Verb(transitive) [RC] Subject Object] C-E  
c. [Verb(transitive) Subject [RC] Object] C-E

According to Kuno, the patterns in (36-37) predict the strong typological generalization that VSO languages only allow postnominal RCs (and never prenominal RCs)\(^98\).

With respect to SVO languages, Kuno points out that the preference for postnominal RCs (as in (38)) over prenominal RCs (as in (39)) is less clear from the point of view of center-embedding.
However, Kuno goes on to note that more than one NP may appear post-verbally in SVO languages, resulting in additional instances of center-embedding for prenominal RCs (as in (40)) as compared to postnominal RCs (as in (41)):

(40) a. [Tom brought Mary [RC that his mother baked] a cake ]
    b. [Tom brought Mary a cake from [RC where he works] the bakery]

(41) a. [Tom brought Mary a cake [RC that his mother baked] ]
    b. [Tom brought Mary a cake from the bakery [RC where he works]]

Given the center-embedding facts in (41-42), which involve post-verbal double object constructions ((40a) and (41a)) and PP modifiers ((40b) and (41b)), Kuno notes that more NPs appear post-verbally than pre-verbally in SVO languages. Since prenominal RC modifiers of post-verbal NPs (like those in (40)) would lead to higher rates of center-embedding, Kuno concludes that SVO languages, like VSO languages, show a preference for postnominal RCs over prenominal RCs.

While I have highlighted Kuno’s (1974) proposal, other researchers have also shed light on the role that perceptual constraints play in syntactic change over time, including Bever and Langendoen (1972), Frazier (1985), Vincent (1976) and Berwick and Weinberg (1984). Hawkins (1994) proposes a theory of Early Intermediate Constituents, which (among other things) argues that consistently left-branching or consistently right-branching structures are easier to process (Harris and Campbell 1995: 239; for a highly favorable review of Hawkins’ theory, see Newmeyer 1998: 108-114). Hawkins’ theory provides an
explanation of why VO languages prefer prepositions over postpositions (Newmeyer 1998: 110-111) and postnominal RCs over prenominal RCs. Harris and Campbell (1995: 239) assume that processing explanations of the type offered by Kuno and Hawkins are the most likely explanation for syntactic changes in the direction of greater typological harmony.

To summarize, the change from prenominal CRCs to postnominal RCs was related to, but not caused by, the change from OV to VO word order in Romance languages. Instead, previous research has identified perceptual constraints as a likely cause of a change in branching direction for a number of syntactic structures, including relatives.

4.4.1.2 Pronominalization of the head noun in RCs

As pointed out in sections 4.2.2, correlatives in older as well as modern Indo-European languages allow variation regarding whether the CRC or the MC contains an overt copy of the head NP. The head NP may appear in the CRC alone, the MC alone or in both clauses simultaneously. It was noted that while CRCs typically preceded MCs in Hittite and Vedic, it was not uncommon for CRCs to follow MCs. The Latin examples in (32) provide evidence that CRCs, which contain an overt copy of the head noun, can appear in post-nominal position in addition to being preposed (see (1a-b)). In Hittite (Berman 1972) and Vedic (Hettrich 1988), the head noun tended to be overtly present in the leftmost clause, with a pronominal copy of the head noun present in the rightmost clause, regardless of the order of the CRC and the MC. Since the CRC typically preceded the MC, the CRC normally contained an overt copy of the head noun while the MC, as the rightmost clause, contained a demonstrative pronoun which occupied the argument position associated with the head noun.
Given that CRCs are adjoined to MCs (see section 4.2.1), some variation in the
distribution of full DPs and pronominal DPs across the two clauses is not unusual.

Conditionals (as in (42)) and comparatives (as in (43)) in English as well as other languages
allow some variation with respect to pronoun usage across the two relevant clauses:

(42)  a. If the students hear that there’s a substitute, they might not show up.
     b. If they hear that there’s a substitute, the students might not show up.

(43)  a. The longer Bill had to wait, the angrier he got.
     b. The longer he had to wait, the angrier Bill got.
(from McCawley 1998: 731)

In (42-43), both clauses contain either a full DP or a pronominal DP in argument
position. It is unclear what types of factors (i.e., syntactic, pragmatic, discourse, etc.)
govern the distribution of full DPs and pronominals in conditionals and comparatives, and
the same can be said for correlatives in early Indo-European languages such as Hittite and
Vedic.

In early correlative structures, then, both the CRC and the MC contain a DP, which
I have labeled the CRC-DP and the MC-DP, respectively. The CRC-DP and MC-DP may
be realized as a full DP (i.e., ‘which man’ or ‘the man’, etc.) or as a pronominal DP (i.e.,
‘which’, ‘he’ or ‘that’, etc.), with a tendency for the DP in the rightmost clause to be
pronominalized if the leftmost clause contains an overt copy of the head NP. It seems
logical to assume that as CRCs evolved into RCs, the copy of the head noun in the RC
came to be regularly realized as a pronominal copy of the head noun (i.e., ‘which’) as
opposed to a full copy of the head noun (i.e., ‘which day’). Pronominalization of this type
was always possible in CRCs, but it came to be obligatory as RCs became more tightly
embedded into the MC and also became postnominal. For this reason, structures like (32)
were replaced by structures like (33), which reflects the structure of headed RRCs found in
modern Romance languages. Thus, relativizers etymologically related to Latin ‘qui’ have their origins as indefinite determiners in CRCs of the type shown in (31-32)\textsuperscript{101}.

### 4.4.2 Case Attraction Phenomena

In the most common case, Latin and early Germanic postnominal RCs were similar to modern German RCs: the head noun is receives Case from its position in the MC, while a clause initial relative pronoun receives Case in accordance with its role within the RC. However, some relative structures involve inverse case attraction (ICA) and case attraction (CA), which were introduced and discussed in sections 4.3.1, 4.3.2 and 4.3.3 in the context of theories put forward by Bauer (1995), Pittner (1999) and Bianchi (1999), respectively.

Syntactically, there is not good evidence to suggest that case-assigning elements like verbs and prepositions have the ability to assign Case across a clausal (CP) boundary. Thus, the term ‘attraction’ is somewhat of a misnomer. The null hypothesis is to assume that nouns and pronouns are constituents of the clause from which they receive Case, given that Case assignment across a clausal boundary is not a well motivated process.

Consider the following examples, which have been identified as examples of ICA ((44) and (45) were used earlier)\textsuperscript{102}:

(44) urbem quam statuo vestra est
    city-ACC which-ACC I-build yours is
    ‘The city which I build is yours’ (Virgil, Aeneid, 1, 573)

(45) …terra pulli qui nascentur, eos in terram deprimito
    …Earth scions which will-spring, these in Earth press
    ‘…Press into the Earth scions that will spring from (the ground)…’ (Cato, de Agricultura, 51, 1, 2)
Bianchi asserts that from the perspective of the adjunct analysis of RCs, ICA structures are ‘utterly mysterious’. However, given the correlative origins of Latin and Germanic RCs, as well as the syntactic variation that was characteristic of such correlatives (see section 4.2.2), a fairly straightforward account is available: Kiparsky (1995: 155) suggests that ICA is simply the result of omitting the MC-DP. That is, both the head noun and the so-called ‘attracted’ relative pronoun are constituents of the RC, and as such receive case from within the RC. As was mentioned earlier, Pittner notes that in Old High German there is almost always an overt pronoun in the MC. Note that the matrix clauses in (45-47) all contain overt anaphoric pronouns in the MC (i.e., ‘eos’ in (45), ‘ei’ in (46) and ‘der’ in (47)). Thus, (45-45) strongly resemble the standard correlative structures given in (3-4). (44) can be analyzed in the same way if one factors pro-drop into account; (44) is simply a correlative with a covert anaphoric pronoun (i.e., pro).

As noted by Bianchi (1999: 93), in (46-47) there appear to be two determiners associated with the head noun, as seen in the sequences ‘hunc chlamydatum quem’ in (46) and ‘den schild den’ in (47). The analysis presented here is similar to that of Bianchi and Pittner in that both determiners are analyzed as constituents of the MC. Using (46) as an example, Bianchi suggests that the determiner ‘hunc’ in (46) is an ‘internal constituent’ of a complex DP: ‘quem hunc chlamydatum’, with ‘hunc chlamydatum’ raising to Spec,DP of the determiner ‘quem’ to yield the surface structure ‘hunc chlamydatum quem’. Applying
her analysis to Latin, Pittner’s proposal argues that ‘quem’ in (46) is a cataphoric pronoun which ‘looks ahead’ to a postposed asyndetic RC (see section 4.3.2 for details). Modern Spanish commonly employs a structure which associates two determiners with one NP (Zagona 2002):

(48) los libros esos
the books those
‘those books’

(49) los libros estos
the books these
‘these books’

Zagona proposes that phrases like (48) have the following structure:\(^{103}\):

(50) 

\[
\begin{array}{c}
\text{DP} \\
D' \\
D \\
\text{NP} \\
N' \\
N \\
\text{D} \\
\text{libros} \\
\text{esos}
\end{array}
\]

The existence of (48-49) provides independent evidence that complex DP structures like ‘hunc chlamydatum quem’ in (46) and ‘den schild den’ in (47) are possible. In addition, assuming a structure like (50) for the complex DPs in (46-47) is compatible with the analysis described above for cases of ICA. ICA, then, can be analyzed as an instance of a correlative clause with a null pronominal element in the MC (i.e., an omitted MC-DP).

The same concept can be applied to instances of CA: CA is an instance of a correlative with a null pronominal element in the CRC (i.e., an omitted CRC-DP). Recall from the earlier discussion regarding variation in correlatives that in correlatives in older IE
languages as well as in modern Indo-Aryan languages, a null element may be present in either the CRC or in the MC. The head noun (antecedent) could appear in either the CRC, the MC, in both or in neither. Each clause (i.e., the CRC and the MC) independently generates a DP in the relevant argument position; the evidence on correlatives supports the idea that it is possible for the CRC-DP or the MC-DP to be realized as a null pronominal element. Thus, ICA and CA can be analyzed in a similar way by positing the existence of a null pronominal element in the MC in cases of ICA and in the CRC in cases of CA.

It is also important to remember that in Latin (as well as in OE and OHG in Germanic) ICA and CA are very rare as compared to ‘normal’ correlative and relative structures, which contain an overt nominal or pronominal in each clause. In ‘normal’ correlatives and relatives, the shared element (whether it is a pronoun or a full nominal containing the antecedent) receives Case from the clause in which it is base generated (i.e., the MC-DP receives case from the MC while the DP in a CRC or RC receives Case from the relative (modifying) clause). Given the variation found in correlatives, any analysis that attempts to account for ICA, CA as well as ‘normal’ correlatives and RCs will face some difficulties. However the analysis presented here maintains the underlying premise that DPs are constituents of the clause from which they receive Case (i.e., each clause generates and Case marks its own DP in argument position, with null categories being of the category 

pro.
4.5 Conclusion

This chapter has argued that RCs in modern Romance languages like Spanish evolved from correlative structures that existed in early Latin, which was an SOV language. CRCs that existed in early IE dialects were subject to considerable variation with respect to the position of CRCs with respect to MCs, the presence of absence of subordination markers and the presence or absence of the antecedent noun in the CRC and/or the MC. Preposed CRCs in early Latin evolved into post-nominal RCs of the type found in modern Romance languages. This change occurred in conjunction with the change from OV to VO word order, but evidently the relationship between these two distinct changes is not causal; instead, it appears that processing factors caused RCs to become embedded postnominally as opposed to pronominally. The two primary changes involved in the change from correlatives to relatives was a change in adjunction site (from IP to the MC-DP) and obligatory pronominalization of the shared noun in the relative clause. The proposal given in section 4.4 avoids the problems identified with earlier proposals by Bauer (1995), Pittner (1995) and Bianchi (1999).

Given this background, Chapter 5 will explore how this information can be useful in addressing the problem of variation in the CP area of RCs which was described in Chapter 3. Following the framework outlined by Roberts and Rousseau (2003), it will be shown that the concept of grammaticalization can be applied to the evolution of relative elements in the CP area of RCs, which crucially involves Dº elements (i.e., wh-moved pronouns in Spec,CP) evolving into Cº elements (i.e., complementizers in Cº). An understanding of this evolution can in turn be useful for analyzing the cross-linguistic variation found in the CP
area of RCs. While the focus will be on Romance, the arguments given in Chapter 5 can be modified to handle variation in the CP area of RCs in modern Germanic languages as well.
Chapter 5

Grammaticalization within the CP area of Restrictive Relatives

5.1 Introduction

Chapter 4 outlined a process via which pronominal correlatives in IE languages and subsequently in early Latin evolved into postnominal RCs of the type found in modern western Romance languages such as Spanish, Italian and French. Unlike Germanic, whose relativizers arose from demonstrative determiners, in Romance relativizers arose from inflected indefinite forms of the Latin pronoun ‘qui’. This chapter proposes that in most RRCs in Spanish (as well as Italian and French), the inflected determiner Latin ‘qui’ has been reanalyzed as a complementizer (i.e., Spanish ‘que’, Italian ‘che’, and French ‘que’\textsuperscript{104}). In some types of RRCs, however, including prepositional RRCs, genitive RRCs and adverbial RRCs, this reanalysis has not occurred. This reanalysis is placed within the framework of Roberts and Roussou (2003), who outline an approach to grammaticalization compatible with MT. Section 5.2 will describe how the reanalysis from pronouns in Spec,CP to complementizers in C° in RRCs can be accounted for within an MT framework. Section 5.3 will show how such an analysis can be applied to the problems identified with the traditional wh-movement analysis of relatives which were outlined in Chapter 3. Section 5.4 will apply the concepts described in sections 5.2 and 5.3 to various types of Spanish RRCs. Section 5.5 offers some concluding remarks.
5.2 Grammaticalization within the CP area of restrictive relatives in Romance

As the correlative forms found in early Latin dissipated and became archaic, postnominal RRCs became the norm in Latin. In fact, the standard Latin RRC structure was structurally identical to RRCs found in modern German: RRCs are introduced by an inflected clause-initial pronoun (i.e., an inflected form of Latin ‘qui’) which agrees with the antecedent (in the MC) in number and gender but receives Case from its argument position in the RC. Two examples are given below:

(1) …, pontem, qui erat ad Genavam, iubet rescindi … 
   …, the-bridge.ACC, which.NOM was near Geneva, he-orders cut-down… 
   ‘…he orders the bridge, which was near Geneva, to be cut down’ (Caesar, Bellum Gallicum, 1, 7, 2)

(2) ea dies [RC quam constituerat] venit 
   that day.NOM which.ACC he-had-appointed came 
   ‘that day which he had appointed came’ (Caesar Bellum Gallicum, 1, 8, 3)

In (1-2), the RC (indicated in [brackets]) contains a fronted relative pronoun (‘quod’ in (1) and ‘quam’ in (2). However, as was pointed out in Chapter 3, in modern Spanish RRCs like (1-2) can only be introduced by the complementizer ‘que’. This fact raises the question of how inflected relative pronouns like Latin ‘quam’ evolved into uninflected (i.e., simplified) complementizers like ‘que’ in Spanish and French and ‘che’ in Italian.

Functional literature on grammatical change\textsuperscript{105} has long suggested that pronominal elements, such as demonstrative pronouns in Germanic and indefinite pronouns in Romance, evolve into clause-initial relativizers/subordinators in relative clauses via grammaticalization (For example, Lehmann 2002: 16, 47, 102-103, 151; Diessel 1999: 120-125; Hopper and Traugott 1993: 190-198; Heine, Claudi and Hünnemeyer 1991: 183-186; Heine and Kuteva 2002: 113-115). Grammaticalization has been defined in numerous
ways, yet a precise definition is elusive. The core concept involved in grammaticalization is that some linguistic element A evolves over (some unspecified period of) time into linguistic element B, where linguistic element B is more grammatical/functional in nature than linguistic element A. Less formally, the term grammaticalization has been widely used to describe instances of syntactic (and morphological) change that involve elements changing from less-grammatical elements to more-grammatical elements. In addition to the example given above (i.e., grammaticalization of pronominal elements into subordinators/relativizers), some common examples of grammaticalization mentioned in functional (and typological) literature on the subject include (see Heine and Kuteva (2002) for a more complete list of instances of grammaticalization):

(3) a. Change from a lexical verb to an auxiliary verb
   b. Change from an auxiliary verb to an inflectional verb ending (for example, future and conditional tense endings in Romance languages)
   d. Change from verbs to complementizers
   e. Changes in general from a lexical element to a functional element or an inflectional morpheme

Until recently, the issue of how address grammaticalization within a generative framework has been largely ignored. However, recent work by Roberts and Roussou (2003) and van Gelderen (2003) analyzes syntactic change involving grammaticalization (also called grammatical reanalysis) within the context of the MT model of generative grammar.

5.2.1 From pronoun to complementizer in RRCs: An instance of grammaticalization

Roberts and Roussou’s (2003) recent work on syntactic change provides a general characterization of grammaticalization that is compatible with MT syntax. Roberts and Roussou (2003) argue that the English complementizer ‘that’ in relative clauses represents an instance of a demonstrative pronoun (in Old English) of category Dº in the Spec,CP
position of a relative clause being reanalyzed as a complementizer in the C° position of a relative clause. In Old English RCs that contained inflected demonstrative pronouns\textsuperscript{107}, such pronouns were typically fronted via wh-movement from argument position to Spec,CP (Allen 1980) in much the same way that inflected demonstrative pronouns are wh-fronted in RRCs in modern German. Roberts and Roussou (2003: 119) argue that these demonstrative pronouns were reanalyzed as complementizers in the C° position of RCs. According to the definitions given above, this change represents an instance of grammaticalization, given that one linguistic element (i.e., an inflected demonstrative pronoun in Spec,CP of a RRC) has evolved into a more grammatical linguistic element (i.e., a complementizer in C° of a RRC). This change is represented schematically in (4-5):

(4) Before grammaticalization: demonstrative pronoun in Spec,CP

\[
\begin{array}{c}
\text{CP} \\
\text{Spec} \\
\text{dem pron.} \\
\text{C} \\
\text{null complementizer} \\
\text{IP} \\
\text{C'} \\
\end{array}
\]

(5) After grammaticalization: demonstrative pronoun from Spec,CP to C°

\[
\begin{array}{c}
\text{CP} \\
\text{Spec} \\
\text{OP} \\
\text{overt complementizer} \\
\text{C} \\
\text{...trace...} \\
\text{IP} \\
\text{C'} \\
\end{array}
\]

Roberts and Roussou (2003) view the change from (5) to (6) as an instance of grammaticalization, involving a change from D° (demonstrative pronoun in Spec,CP, shown in (4)) to C° (complementizer in C°, shown in (5)). Whereas the demonstrative pronoun (in Spec,CP) in OE was inflected in the same way as relative pronouns in Latin
and in Modern German, the English complementizer is uninflected; the process of grammaticalization thus involves simplification and morphological reduction. Thus, grammaticalization is seen as a process of syntactic reanalysis which reduces grammatical complexity and can therefore be thought of as a mechanism for promoting economy in grammar.

In fact, previous work by van Gelderen (2003) ties grammaticalization in the CP area of RCs to a proposed economy condition in syntax which favors filled syntactic heads over filled specifier projections if a choice exists\(^{108}\). Specifically, van Gelderen notes instances of syntactic change where phrases (such as wh-moved pronouns in Spec,CP) are reanalyzed as heads (such as complementizers in C\(^o\)). Van Gelderen analyzed the grammaticalization of demonstrative relative pronouns in English (and in Germanic more generally). Like Roberts and Roussou (2003), van Gelderen analyzes the change from demonstrative pronouns in OE RCs to complementizers in modern English as a change from a DP phrase in Spec,CP to a complementizer in C\(^o\) and ties this to a general economy condition that favors filled heads (such as C\(^o\)) over filled specifiers (such as Spec,CP) if a choice between the two exists. While the terminology used by van Gelderen (2003) differs from that used by Roberts and Roussou (2003), both agree that syntactic change in English relative clauses introduced by ‘that’ involve reanalysis of a determiner (i.e., demonstrative pronoun) as a complementizer (in C\(^o\)).

The basic proposals given by Roberts and Roussou (2003) and van Gelderen (2003) regarding grammaticalization in the CP area of relatives can be extended to Latin/Romance. Specifically, let’s assume that the inflected Latin pronoun ‘qui’ behaves like the inflected demonstrative pronouns ‘se’ in Old English and ‘der’ in modern German (i.e., it is wh-fronted to Spec,CP of a RRC). If syntactic change in the CP area of RRCs in Latin proceeds
along the lines sketched out by Roberts and Roussou (2003) and van Gelderen (2003) for Germanic, then presence of complementizers in such as ‘que’ in Spanish and French and ‘che’ in Italian (located in Cº) is due to grammaticalization of the Latin relative pronoun (originally in Spec,CP). This distinction is shown schematically below in (6) and (7):

(6) Latin RRC with inflected form of ‘qui’ in Spec,CP

(7) Modern Romance RRC with complementizer in Cº and null operator in Spec,CP

If the type of reanalysis shown in the change from (6) to (7) is true for Romance RRCs, it is possible to address a number of the problems with the wh-movement analysis of RRCs that were identified in Chapter 3. This will be the subject of section 5.3, which will focus on RRCs in Spanish with comparisons to Italian and French when appropriate.
5.3 Grammaticalization and variation in the CP area of restrictive relatives in Romance

5.3.1 Variation in the CP area of RRCs

Chapter 3 identified variation in the CP area of RRCs as a problem associated with the standard wh-movement account of RRCs. By noting that relative pronouns in non-prepositional contexts (i.e., subject and direct object relatives\(^{109}\)) have undergone grammaticalization while relative pronouns pied-piped to a preposition have not undergone grammaticalization, a natural and fairly simple account of the distribution of relative pronouns and complementizers in the CP area of RRCs can be identified.

Let’s begin with non-prepositional RRCs in Spanish, Italian and French, where grammaticalization of the type shown in (6-7) is the norm, with the use of ‘qui’ in French subject relatives representing the only exception. This pattern is shown in the table in (8):

(8) Non-prepositional RRCs in Spanish Italian and French

<table>
<thead>
<tr>
<th>LANGUAGE</th>
<th>RRC TYPE</th>
<th>COMPLEMENTIZER (in Spec,CP) OR RELATIVE PRONOUN (in (\text{C}^0))?</th>
<th>GRAMMATICALIZATION (YES/NO)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish</td>
<td>Subject</td>
<td>Complementizer (que)</td>
<td>Yes</td>
</tr>
<tr>
<td>Italian</td>
<td>Subject</td>
<td>Complementizer (che)</td>
<td>Yes</td>
</tr>
<tr>
<td>French</td>
<td>Subject</td>
<td>Ambiguous (qui)</td>
<td>Ambiguous</td>
</tr>
<tr>
<td>Spanish</td>
<td>Direct Object (without personal ‘a’)</td>
<td>Complementizer (que)</td>
<td>Yes</td>
</tr>
<tr>
<td>Italian</td>
<td>Direct Object</td>
<td>Complementizer (che)</td>
<td>Yes</td>
</tr>
<tr>
<td>French</td>
<td>Direct Object</td>
<td>Complementizer (che)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

French ‘qui’ appears to be an exception to the paradigm in (8); if French subject relatives followed the same pattern as Spanish and Italian subject relatives, one would predict that ‘que’ would be the only allowable relativizer for French subject relatives. There is no consensus regarding why ‘qui’ (rather than ‘que’) is the only allowable relativizer in French
subject relativizers. As was noted in Chapter 3, ‘qui’ has been considered to be a complementizer (presumably filling the C° slot in the CP area of an RRC) that bears agreement features. Another view is that ‘qui’ is an archaic form preserved directly from Latin, where ‘qui’ was the nominative-inflected form of the relative pronoun; in this case, one would presume that that French ‘qui’ occupies the same syntactic position in the RRC as Latin ‘qui’, which is Spec,CP. Since the syntactic position which ‘qui’ occupies in French subject RRCs is ambiguous, it is unclear whether ‘qui’ has undergone grammaticalization or not. This question is left open here.

In spite of this exceptional case of French ‘qui’, the paradigm in (8) is robust: in non-prepositional contexts, relative pronouns in Spec,CP have undergone grammaticalization and evolved into complementizers occupying the C° position. Given that all argument positions in a clause must be filled (overtly or covertly), it is assumed that a covert relative operator substitutes for the missing relativized DP and is wh-fronted in Spec,CP.

Relativizers in non-prepositional contexts (shown in (8)) contrast sharply with relativizers in prepositional contexts, as shown in (9).
(9) Prepositional RRCs in Spanish, Italian and French

<table>
<thead>
<tr>
<th>LANGUAGE</th>
<th>RRC TYPE</th>
<th>COMPLEMENTIZER (in Spec,CP) OR RELATIVE PRONOUN (in C°)?</th>
<th>GRAMMATICALIZATION (YES/NO)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish</td>
<td>Indirect Object</td>
<td>Relative pronoun (inflected)</td>
<td>No</td>
</tr>
<tr>
<td>Italian</td>
<td>Indirect Object</td>
<td>Relative pronoun (inflected)</td>
<td>No</td>
</tr>
<tr>
<td>French</td>
<td>Indirect Object</td>
<td>Relative pronoun (inflected)</td>
<td>No</td>
</tr>
<tr>
<td>Spanish</td>
<td>Prepositional Object</td>
<td>Relative pronoun (inflected)</td>
<td>No</td>
</tr>
<tr>
<td>Italian</td>
<td>Prepositional Object</td>
<td>Relative pronoun (inflected)</td>
<td>No</td>
</tr>
<tr>
<td>French</td>
<td>Prepositional Object</td>
<td>Relative pronoun (inflected)</td>
<td>No</td>
</tr>
<tr>
<td>Spanish</td>
<td>Direct Object (with personal ‘a’; no counterpart in Italian or French)</td>
<td>Relative pronoun (inflected)</td>
<td>No</td>
</tr>
</tbody>
</table>

As is the case with English and most other languages, only relative pronouns may be used as relativizers with pied-piped prepositions. Given the syntactic structure of prepositional relatives, this is not surprising. Consider the following Spanish example and its corresponding phrase structure tree:

(10) El hombre con quien vive trabaja en el mercado
The man with whom he lives works in the market
‘The man with whom he lives works at the market.’
Example (10) is typical of relativizers in Spanish, Italian and French that occur with a pied-piped preposition. In (11), the relativized PP ‘con quien vive’ is raised to Spec,CP via wh-movement. Note that the relative pronoun ‘quien’, which may be inflected for number (i.e., quienes) but not for gender, does not directly occupy Spec,CP; rather, ‘quien’ is embedded within the PP that occupies Spec,CP. It appears that the presence of an intervening PP blocks relative pronouns from being grammaticalized into the Cº position. The pattern in
(9) holds across Spanish, Italian and French: relative pronouns that are wh-moved to Spec,CP with a pied-piped preposition are not reanalyzed as complementizers (via grammaticalization).

In Romance, then, one can apply the concept of grammatical reanalysis (grammaticalization) to the problem of variation in the CP area of RRCs. In non-prepositional contexts, Latin relative pronouns (i.e., inflected forms of ‘qui’) were reanalyzed as complementizers in Spanish, Italian and French, with the French subject relative pronoun ‘qui’ representing an exception. In prepositional contexts, reanalysis of relative pronouns was blocked by the intervening PP; therefore, modern Romance languages conserve inflected relative pronouns in these contexts.

5.3.2 The Doubly Filled Comp Filter and That-Trace effects

Chapter 3 also identified two additional issues associated with the wh-movement analysis of relatives that are associated with variation in the CP area of RRCs: the Doubly Filled Comp Filter and That-trace effects. In Chapter 3, it was noted that while the Doubly Filled Comp Filter predicts that complementizers (in Cº) and relative pronouns (in Spec,CP) cannot co-occur in non-prepositional contexts in languages like Spanish and Italian (see (8) and (9)), it does not address the question of why only complementizers are found in non-prepositional contexts while only relative pronoun are found in prepositional contexts. The analysis given above provides a partial explanation for this distribution. Complementizers in Spanish and Italian subject and direct object RRCs (i.e., ‘que’ and ‘che’ respectively) are argued to have evolved from earlier inflected forms of the Latin relative pronoun ‘qui’, which occupied Spec,CP of relatives in Latin. Relative pronouns in prepositional contexts (see (9)) also are derived from Latin ‘qui’, though no
grammaticalization has occurred. Since both complementizers (such as Spanish ‘que’) and relative pronouns (such as Spanish ‘quien/quienes’ and ‘el que/la que’) are both derived from the same set of Latin relative pronouns, co-occurrence of complementizers and relative pronouns in Romance is not expected, and in fact does not occur\textsuperscript{110}.

Another issue associated with the wh-movement analysis of RRCs identified in Chapter 3 is the that-trace effect. Unlike the that-trace paradigm in English (see (32-34) in Chapter 3), Spanish and Italian allow that-trace sequences in both subject extracted questions and RRCs:

\begin{align*}
(12) & \quad \text{a. } \text{¿Quién quieres que tú vea?} \\
& \quad \text{Who you-believe that tú comes} \\
& \quad \text{‘Who do you think is coming?’} \\
& \quad \text{(Spanish subject extracted question)} \\
& \quad \text{b. … el hombre que tú vea…} \\
& \quad \text{the man that tú comes} \\
& \quad \text{‘the man that comes’} \\
& \quad \text{(Spanish subject extracted RRC)} \\
(13) & \quad \text{a. Chi credi che tú venga?} \\
& \quad \text{Who you-think that tú comes} \\
& \quad \text{‘Who do you think is coming?’} \\
& \quad \text{(Italian subject extracted question) (Haegeman 1994: 399)} \\
& \quad \text{b. …l’uomo che tú vea…} \\
& \quad \text{the’man that tú comes} \\
& \quad \text{‘the man that is coming’} \\
& \quad \text{(Italian subject extracted RRC)}
\end{align*}

In Spanish and Italian, therefore, there is no that-trace contrast between subject extracted questions and RRCs. It is not clear that the grammaticalization analysis given above can shed any new light on that-trace effects in subject extracted questions in English and French; I leave this question for future research.

In summary, the grammaticalization framework sketched in section 5.2 provides some insight into the distribution of complementizers and relative pronouns in the CP area of RRCs in Spanish, Italian and French. It also provides an account of why doubly filled
CPs are not found in the CP area of RRCs in Spanish, Italian and French, while the reason(s) for the differences in that trace effects between subject extracted questions and RRCs in French (as well as English) remains an open question.

5.4 Restrictive relatives in Spanish

The goal of this section is to provide a more in-depth analysis of many of the RRC types found in Spanish in light of the analysis given above. The main issue that will be addressed for each of the RRC types below is how the grammaticalization analysis in Sections 5.2 and 5.3 affects the types of relativizers that appear in the CP area of RRCs in Spanish.

5.4.1 Subject Relatives

Subject RRCs in Spanish may only be introduced by the complementizer ‘que’, which occupies the C° position in the CP of the RRC.

(14)   El hombre que / *el que / *el cual / *quien vino ayer compró una casa.
       The man that / the that / the which/ who came yesterday he-bought a house
       The man that I saw yesterday bought a house.
The complementizer ‘que’ evolved from a relative pronoun in Latin via the process of grammaticalization shown in (6-7) above. A relative operator (OP) occupies the Spec,CP position where the Latin relative pronoun was located prior to grammaticalization.

5.4.2 Direct Object Relatives

The personal ‘a’ may appear before a direct object relative pronoun that has a [+human] antecedent; these types of direct object RRCs behave like prepositional RRCs and involve thus do not involve grammaticalization of the relative pronoun. The personal ‘a’ behaves as if it were a preposition with respect to the syntactic structure (i.e., a PP containing the relative pronoun is wh-moved to Spec,CP of the RRC, as shown in the phrase structure tree in (11)). When the personal ‘a’ is used before a direct object relative
pronoun, the relative pronoun will be *quien or *el que*. If the personal ‘a’ is not used, the complementizer *que*, which has been grammaticalized as shown in (6-7), is the only relativizer that may be used. The contrast in direct object RRCs is shown below:

(16) Necesito hablar con el profesor [que / *a que / *quien / a quien ] mi hermano llamó.
    I-need to-speak with the professor [that / pers-A that / who / pers-A whom] my brother called
    ‘I need to speak with the professor that my brother called.’

(17) Busco un profesor [que / *a que / *el que / al que] han nombrado miembro de la Academia.
    I-am-looking-for a professor [that / pers-A that / the that / pers-A-the that] they-have named member of the Academy
    ‘I am looking for a professor who thay have named member as a member of the Academy.’

The examples in (16) and (17) show that the complementizer *que* may not be preceded by the personal ‘a’ in direct object relatives. (16) shows that the relativizer *quien* must be preceded by the personal ‘a’ in direct object relatives where the antecedent is [+human]. (17) shows that the relativizer *el que* behaves in the same fashion as *quien* in this respect.112

In addition, two instances of the personal ‘a’ may appear in sentences containing a direct object RRC in which the antecedent of the RRC also serves as the [+human] direct object of the matrix verb, as shown in (18):

111.

112.
Sentences like (18) in fact provide another argument against HR, since under a head raising analysis one [+human] nominal element (i.e., ‘mujer’ in (18)) would be responsible for generating two instances of a personal ‘a’. The presence of two instances of the personal ‘a’ in sentences like (18) provides evidence that each clause (i.e., the MC and the RRC) generates a separate [+human] argument DP. This assumption is compatible with a wh-movement analysis of RRCs, but not with a head raising analysis.

5.4.3 Indirect Object Relatives

Indirect object RRCs are introduced by the relativizers quien or el que (or to a lesser extent, el cual), which are pied-piped to the indirect object marker ‘a’, as shown in (19).

(19) Me entrevisté con la persona [a quien / a la que / a la cual ] le diste el cargo.
Ref. I-interviewed with the person [to whom / to the that / to the that ]to-him you-gave the job
‘I interviewed the person you gave the job to.’

With [-human] antecedents, only el que (or el cual) may be used. With [+human] antecedents like persona in (26), either quien or el que is acceptable. Indirect object relatives cannot be introduced by the complementizer que. Indirect object RRCs behave like prepositional RRCs (as in (11)), and thus do not involve grammaticalization of the relative pronoun.

Two additional points regarding indirect object RRCs in Spanish are notable. First, the clitic le (or les) is generally required to appear within the RRC in dialects where indirect object clitic doubling is obligatory (Dominican Republic, etc.). In dialects where such
doubling is generally optional (i.e., peninsular Spanish, etc.), use of the clitic le in RRCs like the one in (19) is also optional. Second, two indirect object doubled clitics (le or les) may appear in sentences where the antecedent fulfills the role of indirect object with respect to both the matrix verb and the RC verb, as shown in (20):

(20) Le di los informes a la persona a la que le diste el cargo.
    To-him I-gave the reports to the person to the who to-him you-gave the job
    ‘I gave the reports to the person you gave the job to.’

5.4.4 Prepositional Relatives

Prepositional RRCs in Spanish display a number of idiosyncrasies, many of which do not appear to be strongly dependent upon syntactic structure. However, I will outline some of the more important features and contrasts associated with prepositional RRCs.

Spanish disallows preposition stranding; therefore, prepositional relatives always show pied piping of the preposition to the relative pronoun, as in (21):

(21) Es un hombre que tiene hijos con los que no tiene nada en común.
    He-is a man that has sons with the that no he-has nothing in common
    He is a man that has sons that he has nothing in common with.

As mentioned in sections 5.3, relative pronouns are conserved in Spec,CP in prepositional contexts, maintaining the structure shown in (11). However, most of the idiosyncrasies related to prepositional RRCs relate to the nature of the relativizers they are used with; this varies according to the [+human] feature of the antecedent.
5.4.4.1 Prepositional relatives with non-human antecedents

With non-human antecedents, prepositions in RC constructions are pied piped to *el que, el cual or que. Most prepositions require that the relativizer they are pied piped to carry a an article (*el que or el cual), as shown in (22-25).

(22) a. Es un proyecto para *el que les pido su colaboración.
   It is a project for the that I ask their help
   ‘It’s a project I’m asking for their help with.’
   b. *Es un proyecto para que les pido su colaboración.

(23) a. Hay una serie de circunstancias sin las que no se hubiera producido.
   There is a series of circumstances without the that itself had subj. produced
   ‘There is a series of circumstances without which it would not have happened.’
   b. *Hay una serie de circunstancias sin que no se hubiera producido.

(24) a. Ese es el balcón desde el que veía el desfile.
   That is the balcony from the that he watched the parade
   ‘That is the balcony he was watching the parade from.’
   b. *Ese es el balcón desde que veía el desfile.

(25) a. El gobierno es un enemigo contra el que tenemos que luchar.
   The government is an enemy against the that we have to fight
   ‘The government is an enemy we have to fight against.’
   b. *El gobierno es un enemigo contra que tenemos que luchar.

However, there exists a subset of mono-syllabic prepositions which do not obligatorily require that an article be used in RC constructions with non-human antecedents like those shown in (22-25): these are *a, en, de, con and to a limited extent *por. In these cases, only *que may be used. While these five prepositions always admit the use of the article in such constructions, they may be used without the article provided certain conditions are met.

Since these sentences optionally allow the use of the definite article and are thus inflected for number and gender (i.e., el, la, los, las), the relativizers in prepositional relatives are considered to be inflected relative pronouns regardless of whether the definite article is
employed or omitted. The sentences in (26) show typical contexts where articles may optionally be used or omitted (Brucart 1999; 495):

(26) a. La novela a (la) que se refiere fue escrita al comienzo de su carrera.
    The novel to (the) that refl. s/he refers was written at-the beginning of
    his/her career
    The novel s/he refers to was written at the beginning of his/her career.

b. El abrazo con (el) que me despidió fue emocionante.
    The hug with the that to-me he-said-goodbye was emotional
    ‘The hug he said goodbye with was emotional.’

c. Le dio todo la plata de (la) que disponía.
    ‘S/he gave him/her all the money s/he had.’

d. La casa en (la) que vive no es demasiado lujosa.
    ‘The house that s/he lives in is not too luxurious’

e. El ideal por (el) que luchaban era inasequible.
    ‘The ideal that they were fighting for was unattainable’

Can these contexts where article usage seems to be optional be precisely defined?

Brucart (1999) identifies two conditions that must be met in order for these prepositions (a, de, en, con and por) to be used in RC constructions without an article. First, the antecedent of the RC must be definite, as shown in (27) (Brucart 1999; 494):

(27) a. Le regalé la pluma con la que había escrito algunas de mis novelas.
    I-gave the pen with the that I-had written some of my novels
    ‘I have him/her the pen I had written some of my novels with.’
    [definite antecedent with definite article used in the relativizer]

b. Le regalé la pluma con que había escrito algunas de mis novelas.
    [definite antecedent with the definite article omitted from the relativizer]

c. Le regalé una pluma con la que había escrito algunas de mis novelas.
    [indefinite antecedent with definite article used in the relativizer]

d. *Le regalé una pluma con que había escrito algunas de mis novelas.
    [indefinite antecedent with definite article omitted from the relativizer]
The definite context in (27a-b) allow for optional inclusion or omission of the definite article *la*. However in the indefinite context in (27c-d) is only acceptable when the article is present, hence the ungrammaticality of (27d).

The second condition identified by Brucart is the polarity of the RC; that is, the verb in the RC cannot be negated, as shown in (35) (Brucart 1999):

(28)  
(a)  Mi padre me prestó el dinero del que yo no disponía.  
My father to-me lent the money of-the that I no have  
My father lent me the money I did not have.  
[definite article *el* present in relativizer]  
(b)  *Mi padre me prestó el dinero de que yo no disponía.*  
[definite article *el* omitted from relativizer]

5.4.4.2 Prepositional relatives with human antecedents

Prepositional RCs with [+human] antecedents may also be used with *el que* or *el cual* in the same fashion as described in section 2.2.4.1. However, they may also be appear with *quien* as a relativizer, as shown in (29):

(29)  
Busca a alguien de quien te puedas fiar.  
Look-for pers-A someone of who yourself.refl. you-can.subj. to trust.  
Look for someone that you can trust.

*Quien* is never preceded by an article, so it doesn’t present the type of variation one finds with respect to *article + que* relative constructions described in 5.4.4.1. Regardless of the precise form of the relativizer, relative pronouns are not grammaticalized and show a syntactic structure similar to that shown in (11).

5.4.5 Genitive Relatives

Genetive relatives in Spanish are introduced by the relative pronoun *cuyo* (and its variants *cuya, cuyos, cuyas*). *Cuyo* is unique among relativizers that show agreement morphology in that it does not agree in number and gender features with the RC antecedent;
rather, it agrees with the possessed item, which appears within the RC itself, as shown in 

(30):

(30)  

a. Las mujeres cuyo marido las ayuda en casa son afortunadas.  
   The women whose husband them he-helps in house are lucky  
   Women whose husbands help them at home are lucky.

b. Vino el muchacho cuya madre es directora del banco.  
   Came the boy whose mother is director of-the bank  
   The boy came whose mother is director of the bank.

Given that the forms of 'cuyo' are inflected for gender and number, it is clear that they are not grammaticalized into Cº, but rather maintain their position as determiners in Spec,CP as shown schematically in (31):
Unlike relative pronouns in subject and direct objects that evolved into complementizers via grammaticalization, the determiner ‘cuya’ in (31) only represents part of the wh-raised element (DP). Stated another way, genitive relative pronouns like ‘cuya’ in (31) has a complement (‘madre’), while the relative pronouns in subject and direct object relatives do not take nominal complements, but rather represent full relativized DPs in their own right. It must be assumed that since genitive relative pronouns in Spanish represent only part of a
DP (i.e., not a full DP), they may not be grammaticalized into complementizers in the same
fashion as subject and direct object relative pronouns.

5.4.6 Adverbial Relatives

I define adverbial relatives as those introduced by the relativizers *dónde*, *cuando* or
*como*. Like the complementizer ‘que’, adverbial relativizers are invariable in form (i.e.,
they are not inflected for gender or number). One interesting fact about adverbial relatives
is that they often appear to be in free variation with prepositional relatives, as shown in (32-
36):

(32) Ella va a visitar el pueblo [en el que / dónde] hemos estado.
She goes to visit the town [in the that / where] we-have been
‘She is going to visit the town that we were in.’

(33) Ese fue el barro [del que / de dónde] sacó Cervantes la creación
literaria más original de todos los tiempos.
That was the muck [from-the that / from where] took Cervantes the creation literary
most original of all the times
‘That was the muck/mud from which Cervantes created the most original literary
creation of all time.’

(34) ¿Te acuerdas del año [en que / cuando] fuimos a la playa en septiembre?
Yourself.refl. you-remember of-the year [in that / when] we-went to the beach in September
‘Do you remember the year when we went to the beach in September?’

(35) Ser mala no será sino la forma [en que / como] los otros apreciarán la diferencia.
To-be bad no will-be but the form [in that / how] the others will-appreciate the
difference
‘Being bad will be nothing other than the way that others will appreciate the
difference.’
Reflexionaba sobre el modo [con que / como] había conducido yo mi existencia. I reflected about the way [with that / how] had guided my existence. ‘I reflected about the way I had guided my own existence.’

Among adverbial relatives, *dónde* displays a more varied usage than *cuando* or *como* with respect to the types of antecedents with which it may appear. *Cuando* usually only takes antecedents related to the concept of time, while *como* usually only takes those related to the concept of manner. *Donde*, however, accepts many different semantic types of antecedents, including those related to people, things, concepts and places.

With these facts in mind, the exact status of adverbial relativizers in Spanish is unclear. Given their ability to follow pied-piped prepositions, they behave like the relative pronouns ‘quien’ or ‘el que’. However, when adverbial relativizers appear alone (i.e., without a pied-piped preposition) they resemble the complementizer ‘que’ in that they are uninflected. Since adverbial relativizers are not derived from Latin relative pronouns (i.e., forms of ‘qui’), I tentatively assume that they are wh-elements that occupy Spec,CP. Further research is needed to bolster this hypothesis.

To summarize, the distribution of complementizers (‘que’) and relative pronouns (‘quien’, ‘el que’, ‘el cual’) is strongly related to the presence of a pied-piped preposition in RRCs in Spanish. In non-prepositional contexts, Latin relative pronouns have been grammaticalized into the complementizer ‘que’ and thus occupy the C° position in the CP of an RRC. In prepositional contexts, grammaticalization is blocked by the intervening PP category (see (11)) and thus relative pronouns have not undergone reanalysis and continue to be occupy Spec,CP. Genitive RRCs and adverbial RRCs appear to resist grammaticalization and continue to behave as relative pronouns in Spec,CP.
5.5 Concluding Remarks

This dissertation reached two main conclusions. First, the HR approaches to RRCs (and therefore to other types of relatives as well) is untenable relies on numerous stipulations and ad hoc mechanisms to achieve observational adequacy (Chapter 2). In contrast, a wh-dependency analysis is well motivated (Chapter 3) and able to avoid the primary problems associated with the HR approach to RRCs (Chapter 2). Some well known problems associated with the standard wh-movement approach to RRCs (Chapter 3) can be handled if the diachronic development of RRCs is taken into account (Chapters 4 and 5). Using a paraphrased English example in which ‘who’ represents a declinable relative pronoun in Spec,CP while ‘that’ represents a grammaticalized complementizer in Cº, the stages in the development of RRCs can be traced as follows:

(37) Stages in the evolution from correlative clause to relative clause
- Full correlative (Indo-European, Early Latin) 
  [ who man I saw] [the man robbed a bank]
- Pronominalized correlative (Indo-European, Early Latin):
  [ who I saw ] [the man robbed a bank]
- Embedded post-nominal RRC
  [ the man [ who I saw ] robbed a bank]
- Grammaticalization of relative pronouns in non-prepositional contexts (Romance)
  [ the man [ that I saw] robbed a bank]

As indicated in (37), the last stage involves grammatical reanalysis of relative pronouns into complementizers. This last stage only occurred in non-prepositional contexts in Romance, which provides a preliminary basis for attempting to account for the distribution of indeclinable complementizers and declinable relative pronouns in modern Romance languages. With modifications, the analysis presented here is also extensible to Germanic languages, including English. This task is left for future research.
REFERENCES


ENDNOTES

1 The topic of coordination under the HR approach to RCs will be revisited in Chapter 2, including an analysis of Bianchi’s (1999; 2000b) proposal concerning this phenomenon.

2 Interested readers are referred to Kayne (1994). Culicover (1997; pages 373-384) and Epstein, Thráinsson and Zwart (1996; pages 23-27) provide a concise introduction to the basic concepts that underlie AST. Chametzky (2000; Chapter 3) offers a detailed description and critical review of AST. Chomsky (1995; pages 413-420) gives a brief overview of AST and discusses some of its consequences.

3 In his presentation of AST, Kayne asserts that there exists a typological generalization that specifier-head-complement order predominates in natural languages; on the basis of this generalization, AST assumes that all languages are underlyingly SVO. However, Newmeyer 1998: 359-360) notes that the literature on language typology does not support Kayne’s conclusion, which Newmeyer characterizes as “a sweeping typological claim that has been put forward on the basis of meager evidence” (Newmeyer 1998: 359).

4 As the title of the dissertation suggests, the focus will be on RRCs. Unless otherwise indicated, any discussion of relative clauses will be in reference to RRCs.

5 Bianchi (1999) is a published book that is based on Bianchi (1995), which is Bianchi’s original dissertation. Several portions of Bianchi (1995) are not present in Bianchi (1999), including Chapter 6 of Bianchi (1995) which deals with pied-piping. Working with copies of both Bianchi (1999) and Bianchi (1995), I have tried to refer to Bianchi (1999) wherever possible, but some relevant material is only addressed in Bianchi (1995). In those cases, I use Bianchi (1995) as the relevant reference as opposed to Bianchi (1999). In general, the reader should be aware that Bianchi (1999) is a revised and edited version of Bianchi (1995), and that references to both works appear in this chapter.

6 Vergnaud (1974) is generally credited with providing the first detailed proposal that RCs are derived via HR.

7 For the time being, I will use the generic term ‘relativizer’ to refer to elements like ‘that’ and ‘who’ that introduce RCs. This is done to avoid (for the moment) using the terms ‘relative pronoun’ and ‘complementizer’. The proper classification of ‘relativizers’ such as English ‘who’ and ‘that’ will be addressed in Chapter 3.

8 For the moment, functional projections in the relative clause CP (i.e., IP, TP, AgrSP, AgrOP, etc.) are omitted for the sake of clarity and simplicity. The structure, order and function of these projections is not relevant to the presentation of Kayne’s Head raising analysis of RCs. I assume the VP-internal subject hypothesis, whereby subjects of tensed verbs are base generated in Spec,VP.

9 In Kayne (1994), page 87, example (10), the following structure is given for a ‘that’ relative: the [[NP picture] [that [Bill saw [e]]]]. This structure appears to indicate the moved element ‘picture’ is an NP, rather than a DP. Also on page 87, example (9) is given as [the [picture of himself [that [Bill saw [e]]]]]. Kayne goes on to note that “Picture of himself here is a phrase probably of category NP.”

10 Some of these issues are addressed by Bianchi (1999;2000b) and De Vries (2002). Their responses to Borsley’s (1997) criticisms will be addressed in the sections which follow.

11 See fn. 6.

12 In both examples, ‘who’ may be replaced by ‘that’ without any change in grammaticality or semantic interpretation.

13 Specifically, Kayne (1994: 117) objects to the analysis that the extraposed constituent is right-moving and subsequently right-adjoined to some maximal projection such as VP or IP.

14 Based on (27), many similar examples can be created:
   a. He bought that car yesterday that he has been talking about for weeks.
   b. That waiter came over who doesn’t speak English.

15 It is also unclear from this analysis what would serve as the triggers for movement of the constituents that must move to the left of extraposed RCs in order to strand them in sentence-final position.

16 Bianchi (1999: 39) also gives a Greek example which is very similar to the Spanish example.

17 The determiner in the similar Greek example ((18a) in Bianchi 1999: 39) is also optional.

18 A parallel English example is ‘The fact that he came’; the standard analysis of this phrase is that the CP ‘that he came’ is a complement (sister) of the N ‘fact’.
To support this structure, Bruchert cites Grimshaw (1991) and Olsen (1987). In addition, Bruchert notes that Zaring’s (1992) analysis predicts that a preposition cannot be immediately followed by a CP; yet such structures occur in Spanish, a fact conceded by Zaring (1992):

He obligado a los estudiantes a que vayan al laboratorio.
I-have required to the students prep. that they-go to-the laboratory.

I required the students to go to the laboratory.

Borsley (1997: 630-631) also doubts the background motivation given in Kayne (1994) for the ‘D+CP’ complementation structure based on data from Italian and Polish.

20 I saw [DP the [NP man]] versus *I saw [DP e [man]].

In fact, this question and the answer to it given below applies to both non-wh-relatives and wh-relatives. Borsley’s revision of Kayne’s analysis of wh-relatives is the topic of section 2.4.3.

In simplified terms, the Doubly Filled COMP Filter (Chomsky and Lasnik 1977: 450) states that a single CP projection may not contain both an overt wh-element and an overt complementizer.

24 Presumably, the determiners in (30-32) would be examples of clausal determiners based on Bianchi’s analysis of their structure, which involves a ‘D + CP’ complementation structure.

25 To cover terms like ‘local relation’ and ‘local domain’, Bianchi adopts Manzini’s (1994) definition of minimal domain:

a. The minimal domain of a head X includes all categories that are immediately dominated by , and do not immediately dominate, a projection of X.

This means that Spec,CP does not fall within the minimal domain of C, but rather Spec,CP falls in the minimal domain of the immediately higher head. In the case of the HR proposal for RCs, the immediately higher head above RC CPs is the external determiner (Dx).

26 See section 2.4.1 for other structures that Bianchi analyzes as involving clausal determiners selecting a CP complement.

27 For example, the determiners that Bianchi calls clausal determiners in (30-32).

Since I agree with Bianchi on this point, I will not summarize her arguments on this point. For details, see Bianchi (1999).

Bianchi (2000b: 130) follows Rizzi’s (1997) Split CP Hypothesis as a basis for positing the existence of additional functional heads in the C° system. Based on his analysis of the linear distribution of elements that occur in the C° system (i.e., topics, focus, complementizers, relative and interrogative pronouns, etc.), Rizzi gives the following structure for the C° system:

![Diagram of C° System](image)

Based on distributional evidence, Rizzi claims that relative pronouns (like ‘who’ or ‘which’) occupy Spec,Force, while complementizers (like English ‘that’) are in Force°. Note that these projections combined make up Rizzi’s C° system, and there is no separate CP projection which dominates the five layers in Rizzi’s system. Bianchi’s proposal about the position or relative elements in the C° system does not coincide exactly with Rizzi’s, since Bianchi has a relativized DP moving to the Specifier position of some unnamed functional projection, and then has the head noun moving to Spec,CP. Under Rizzi’s analysis, relativized elements (wh-pronouns) are in Spec,Force, which is the highest Specifier projection available in the C° system. Therefore, if Rizzi’s (1997) proposal is correct, there is no available Specifier projection higher up in the C° system for the RC head noun to move to in order to linearly precede the relative determiner ‘who’ in a sentence like (42). It
is unclear if Bianchi would propose inserting XP above the ForceP layer and if so what ramifications that would have for the rest of Rizzi’s split CP system. So, while Bianchi follows Rizzi in assuming that the C° system is divided into several projections, her proposal for wh-relatives does not follow him on the details of the order of projections in the C° system and which elements the functional projections that make up the C° system can host.

30 Even if one assumes a split CP projection as shown in the diagram in footnote 26, the complementizer would still precede relative pronoun, given that under Rizzi’s proposal complementizers occupy the Force° position. Generating the correct word order in relatives that involve ‘relative pronoun + complementizer’ RC constructions would require modifications to Rizzi’s split-CP proposal.

31 Borsley’s (1997: 636-637) suggestion is that the trace in the rightmost RC in (10) must be a DP as opposed to a CP.

32 There are, of course, exceptions to this generalization, such as gapping and right node raising, but RCs do not seem to clearly fit into any of these cases.

33 Bianchi (1995: 106) concludes that “with respect to the problem of coordination, the raising analysis does not offer any advantage over the adjunct analysis.”

34 To my knowledge, no one has attempted to show how split antecedent RCs like those in (47) might be analyzed under an HR approach to RCs.

35 One could also argue that PPs may modify split antecedents based on an example like the following:
   a. John married a woman and Lisa married a man from the same hometown.
   b. John married a woman and Lisa married a man from France.

   However, examples like this seem to be highly restricted. Note that (a) is improved if the modifier is a RC as opposed to a PP:
   c. John married a woman and Lisa married a man who were from the same hometown.

   It appears that the conjugated verb ‘were’ indicates a plural subject, ‘a woman’ and ‘a man’, which clarifies the relationship of the modifier to the NPs which precede it.

36 De Vries (2002: 242 fn. 11) is more direct, stating that “Kayne’s (1994: 124) assumption that extraposition from a definite phrase is impossible, is simply incorrect.” For examples in English, refer back to (25-27) in Section 2.3.4.

37 Guéron (1980: 638) notes that PP extraposition is more restricted than extraposition of other constructions such as RCs and comparatives. Guéron suggests that various syntactic, semantic and pragmatic factors play a role in restrictions on PP extraposition. For example, some questionable cases of extraposition can be overcome if a proper discourse context is provided.
   a. ?? A man died from India. ((56e) in Guéron (1980))
   b. Several visitors from foreign countries died in the terrible accident. A woman died from Peru and a man died from India. ((58) in Guéron (1980))

   See Guéron (1980) for more details on the restrictions that affect PP extraposition. Regarding the present discussion of RC extraposition, the key fact is that nominal PP modifiers can be extraposed from the NPs they modify.

38 Here, the focus will be on post-nominal relatives.

39 This issue will be discussed in detail in Chapter 3, where a wh-dependency approach to post-nominal RCs is elaborated.

40 ‘Relative pronoun’ refers to the same element as Bianchi’s ‘relative determiner’. For the moment, the discussion will focus on wh-relatives only.

41 This contradicts Bianchi’s (2000b) assertion that NPs have Case only by virtue of being governed by a DP that assigns it to them (De Vries 2002: 119)

42 This contradicts the normal (though not universally accepted) assumption under MT that only functional heads (such as TP and CP) and not lexical heads (such as NP or VP) have formal features that must be checked via feature-checking mechanism (Chomsky 1993; 1995). De Vries (2002: 122 fn. 18) explicitly rejects this assumption, and asserts that both lexical and functional categories have formal features that need to be checked. Stated another way, De Vries assumes that the checking relationship is bi-directional: If XP (containing formal feature K) moves to YP (also containing feature K) then the K feature of XP checks the K feature of YP, and at the same time the K feature of YP checks the K feature of XP.

43 Presumably, here ‘features’ refers to both phi-features and Case-features, since if either one or the other were strong, overt movement would result.
Actually, it is impossible to tell from the surface word order whether the moved N in (52b) has moved to Spec,DP or to D° itself, since according to De Vries’ definitions feature checking can occur from either position (see (51e)).

According to De Vries (2002: 120), this same process can be seen in other languages including Bulgarian and Basque.

Bianchi (1999) argues extensively that movement of the head NP to Spec,DP is impossible. This is one of many differences between the HR accounts of Bianchi (1999; 2000b) and De Vries (2002).

For convenience, the derivation of items in the matrix clause is ignored. The only fact from the matrix that is relevant is that the external determiner (Dx) has NOM case due to its role in the matrix clause (as the subject of ‘entered’).

The phrase structure tree encompasses the external determiner + RC complex, ignoring the remainder of the matrix clause (“entered the room”). As before, functional projections (aside from CP) in the RC are left out for clarity and convenience. Not shown in the tree but relevant for De Vries derivation is that the D ‘who’ has its ACC Case feature checked when the DP ‘who man’ moves to Spec,AgroP in the RC. In English, Case features are not morphologically realized, so they are labeled ACC and NOM to show their abstract Case.

The phenomenon of inverse Case attraction, under which relative pronouns appear to assume the Case of the matrix clause as opposed to the RC will be taken up in Chapter 4.

De Vries (2002: 125) notes this problem and assumes that the nominal head still must move to Spec,DP of the Dr ‘who’, though he gives no explanation of why this movement, which contradicts his earlier assumptions about head incorporation, would occur. One of these assumptions is that “Covert movement is more economical than overt movement” (51i). If this were true, it would prevent (overt) movement of the nominal head to Spec,DP of the Dr, given that head to head covert movement (N° to D°) is possible given that N° and Dr agree with respect to phi-features and Case features.

De Vries (2002: 125) notes this problem and assumes that the nominal head still must move to Spec,DP of the Dr ‘who’, though he gives no explanation of why this movement, which contradicts his earlier assumptions about head incorporation, would occur. One of these assumptions is that “Covert movement is more economical than overt movement” (51i). If this were true, it would prevent (overt) movement of the nominal head to Spec,DP of the Dr, given that head to head covert movement (N° to D°) is possible given that N° and Dr agree with respect to phi-features and Case features.

For more on the classification of idioms, see Makkai (1972) and Jackendoff (1995) and Jackendoff (1977). I limit myself here to idioms of the type ‘verb + object’, though many other types exist.

Another process that can be applied to idiom chunks is topicalization:

a. *The bucket, my Dad kicked. (opaque idiom)
   b. ?Headway, we made. (transparent idiom)

Chomsky (1993) also used ‘to take a picture’ as an example of an idiomatic expression. ‘To take a picture’ is a transparent idiom using the terminology introduced in Section 2.6.1, and may be relativized, passivized or topicalized:

a. I lost the picture he took of Maccu Pichu. (Compare to “He took a picture of Maccu Piccu that I framed.”) (Relative)
   b. The picture was taken during the ceremony. (Passive)
   c. The picture, he took. (Topic)

For example, sentences like the following are preferred to (64):

a. The portrait that John painted of himself is extremely flattering.
   b. The interest that John and Mary showed in each other was fleeting.

By RRC, I refer to restrictive relative clauses that have an overt external (nominal) antecedent and contain a tensed verb (i.e., The man [who I saw] robbed a bank.

The term ‘relative elements’ is borrowed from De Vries (2002). Relative elements refers to relativizers of all types (wh-pronouns, complementizers, null relativizers, relative particles/markers) as well as nominals or pronominals (including resumptive pronouns) that are co-indexed with the (external) nominal antecedent.

The CNPC applies to two types of complex NP structures: CP complements of an NP (i.e., the claim that John made) and Relative Clause CP adjuncts to an NP (i.e., the man who John saw). (2) shows a CP complement of the NP ‘claim’.

For evidence that ‘whether’ occupies [Spec,CP] as opposed to [C], see Haegeman and Guéron (1999: 175-176).

The definition of ‘bounding node’ has varied over time. Originally bounding nodes were defined as S and NP (Chomsky 1973). Later, Haegeman (1994: 402) and Culicover (1997: 196) define bounding nodes as IP and NP. As the IP layer was deconstructed and separated into tense (TP) and agreement (AGRSP, AGROP) layers, bounding nodes were redefined as NP and TP. In addition, bounding nodes were viewed as a parameter that could differ from language to language (see Rizzi (1982) and Torrego (1984) for parametric variation in bounding nodes in Italian and Spanish respectively). Chomsky (1986) deals extensively with the concept of bounding nodes within the framework of Barriers. Rizzi (1990) later attempted to account for
Subjacency within the framework of Relativized Minimality, which uses Government and the ECP to account for Subjacency facts. Government, however, has been abandoned in MT, leading to a reanalysis of subjacency facts in terms of MT constraints such as Greed and the Shortest Move Condition (Hornstein 2001: 217-218).

Non-Restrictive Relatives were typically analyzed as being adjoined higher than RRCs, to DP. See Jackendoff (1977), Demirdache (1991), Toribio (1992) and Alexiadou et. al. (2000). Attaching non-restrictives to DP syntactically placed them in a position outside the scope of the external determiner, whereas restrictives adjoined to NP were syntactically within the scope of the external determiner.

As in Chapter 2, the functional projections within the RC (i.e., IP, TP, AgrSP, AgrOP) are omitted as they are not relevant for the present discussion of wh-movement of relative pronouns to [Spec,CP].

Other languages, such as Spanish, do not show the same patterns as English with respect to the distribution of complementizers and wh-pronouns in the COMP area of RRCs. This issue is the topic of section 3.3.1. McCawley (1998: 433-434) identified two syntactic differences between English null relatives and relatives with overt relativizers. First, when RRCs are stacked, only the innermost RRC can have a null relativizer, while all subsequent stacked RRCs must have an overt relativizer:

- The book that I bought that Ann had recommended was boring. (14) in McCawley 1998
- The book I bought that Ann had recommended was boring.
- The book that I bought Ann had recommended was boring.

Second, null relatives are much more restrictive in terms of their ability to be extraposed, while RRCs with overt relativizers are more receptive to extraposition. McCawley tentatively suggests that these differences may be related to psycholinguistic “processing difficulties”, and concludes that null relatives have the same underlying syntactic structure as RCs with overt relativizers.

Kayne (1977: 267) notes that if the relativizer ‘qui’ in French subject RRCs is analyzed as a complementizer (in $C^\circ$), then it must be considered to be a distinct element than the relativizer ‘qui’ that occurs in prepositional relatives:

- La fille a qui tu parlais
  - the girl to whom you spoke
  - ‘the girl to whom you spoke’

The ‘qui’ that occurs in prepositional relatives (when the antecedent is [+human]) is typically analyzed as a wh-pronoun in Spec,CP as opposed to a complementizer occupying $C^\circ$. Thus, the two distinct ‘qui’ relativizers are thought to occupy different syntactic positions.

For example:

- The man [who I talked to] robbed a bank.
- The man [that I talked to] robbed a bank.
- The man [I talked to] robbed a bank.

This particular formulation of the Doubly Filled COMP filter was taken from Haegeman (1994: 383).

Deletion of the wh-pronoun is blocked by the recoverability condition (Bianchi 1999: 159).

(36) gives a disjunctive formulation of the ECP. During the 1980s, the disjunctive formulation of the ECP gradually gave way to a conjunctive formulation of the ECP, which requires that a non-pronominal empty category be both lexically and antecedent governed (Rizzi 1990: 30). The developments that led to this change in the ECP will not be reviewed here, but the reader is referred to Chapter 2 of Rizzi (1990) for discussion. Rizzi (1990: 32) gave the following conjunctive definition of the ECP:

(i) Empty Category Principle

A nonpronominal empty category must be:

a. properly head governed (Formal Licensing)

b. antecedent governed or Theta-governed (Identification)

Hornstein and Weinberg (1995) state that “Many believe that the original disjunctive 1981 version of the (ECP) theory should be abandoned and replaced with a conjunctive version.” See also Aoun, Hornstein, Lightfoot and Weinberg (1987) for a different version of a conjunctively formulated ECP.

As was the case with the ECP, various definitions of Government were proposed within the GB framework. A representative definition of Government is given here (Haegeman 1994: 442):

- A governs B if:
  A is a governor;
  A m-commands B;
  No barrier (Chomsky 1986) intervenes between A and B;
  Minimality is respected
Governors are heads and coindexed XPs.

Even if the complementizer was able to be licensed via spec-head agreement, remember that the null operator (‘OP’) in Spec,CP is incapable of licensing C° as a governor, as was demonstrated with respect to (39c).

In addition, Toribio (1992: 293-294) gives a brief summary of how Rizzi’s proposal may be applied to the qui/que distinction in French RRCs.

The role of the ECP and of government are unclear within MT. Baltin (2001: 247) states that “The ECP is not viewed to be a primitive in the theory of grammar in the Minimalist view.” As part of his argument to eliminate Quantifier Raising, Hornstein (1999: 46) states that antecedent government, a key component of most definitions of the ECP, “does not fit well into Minimalism.”

This full example from the original Latin text is: “Quibus diebus Cumae liberatae sunt obsidione, isdem diebus et in Lucanis ad Grumentum Ti. Sempronius, cui Longo cognomen erat, cum Hannone Poeno prospere pugnat.” The elided parts in (1) are not relevant to the basic correlative structure exemplified in (1).

For example, Bianchi (1999: 91) and Bhatt (2003): 486 refer to CRCs as ‘correlative clauses’ while Hock (1990: 608) refers to the MC as a ‘correlative (main) clause’. Keenan (1985: 163-168) uses the notation ‘Srel’ to refer to CRCs and ‘Smain’ to refer to MCs. CRCs are frequently referred to as ‘dependent clauses’ and ‘relative clauses’, but this usage is not uniform. To avoid confusion with the use of the abbreviation RC to refer to relative clauses throughout the rest of this paper, I use the term CRC to refer to the ancestor of modern relative clauses that existed in earlier correlative structures. The terms I use (CRC, MC, CRC-DP and MC-DP) were inspired by the terminology in Bhatt (2003), though the labels are not the same.

This full example from the original Latin text is: “Ubi eum castris se tenere Caesar intellexit, ne diutius commeatu prohiberetur, ultra eum locum, quo in loco Germani consederant, circiter passus DC ab his, castris idoneum locum delegit acieque triplici instructa ad eum locum venit.”

Examples of Hittite correlative structures in which both the CRC and the MC simultaneously contain the head noun can be found in Berman (1972: 1) and Justus (1976: 233). The Hittite example used by Justus (1976: 233) is also used by Lehmann (1979: 133).

One example is given in (1b), but see Allen and Greenough (1979: 184-189) for additional examples of this configuration.

Some of the relevant languages with correlatives of this type are:

- Early Latin (Haudry 1973; Bianchi 1999)
- Ancient Greek (De Vries 2002)
- Old English (Curme 1912; Bianchi 1999)
- Lydian (Berman 1972)
- Medieval Russian (Keenan 1985; De Vries 2002)

As a heavily inflected language, the word order of Latin was relatively free compared to languages like English; therefore, postulating a basic SOV word order for Latin is controversial. However, the general consensus in the literature on this topic is that Latin is predominantly SOV (Baldi 2002: 81). In addition, since Latin is an SOV language it is difficult to tell whether the verb overtly moves to I° or remains in V°, given that placing the verb in either position would not affect the surface position of the verb; therefore, I (arbitrarily) chose to leave the verb in V°.

I limit the discussion here to analyses of simple correlatives, in which there is only one shared DP/NP (i.e., exactly one CRC-DP in the CRC which is coreferent with exactly one MC-DP in the MC). Simple correlatives are contrasted with ‘multiple-head correlatives’ (Bhatt 2003), in which there is more than one CRC-DP is present in a single CRC, and each CRC-DP in the CRC is coreferent with an MC-DP in the MC. Bhatt (2003: 498) gives the following English paraphrase of a Hindi multiple head correlative: ‘Which girl heard which CD, that girl bought that CD.’ In this example, the CRC is ‘which girl heard which CD’ and the MC is ‘that girl bought that CD’ is the MC. There are two CRC-DPs in the CRC (i.e., ‘which girl’ and ‘which CD’) and two corresponding MC-DPs in the MC (i.e., ‘that girl’ and ‘that CD’). For multiple head correlative structures, Bhatt (2003: 497) also adopts an IP adjoined structure like the one shown in (5).

If one were to (hypothetically) posit that relative clauses, and possibly all complex sentences, were originally paratactic at some point in the distant past, it is unclear how far back in the history of language one would have to go to find such a state of affairs. For example, there is no consensus on whether Proto-Indo-European had relative clauses at all or simply juxtaposed simple sentences (see Harris and Campbell 1995:
26. Since no existing languages lack subordinated clauses, many scholars have argued that there is no reason to suppose the Proto-Indo-European would have been any different (Baldi 2002: 91).

This does not rule out the possibility of a parastic predecessor for structures like (5) or (6) that may have existed at some point in the distant past which predates any of the languages mentioned in this paper.

For attested sentences that illustrate the phenomena in (5), readers are directed to the references provided.

Majahan (2000: 226, fn. 3) mentions this last option, in which neither the CRC nor the MC contains the NP, in the following way: “It is also possible for the head noun to be missing from both the main clause as well as the relative clause. I do not discuss this possibility here.”

By asyndetic, I mean a (relative or correlative) clause with a gap in an argument position that is unmarked by a subordinator or relativizer of any sort. For example, the English example ‘The man [I saw] robbed a bank’ contains a postnominal asyndetic RC (‘I saw’).

This same example is used by Bianchi (1999: 93). Interestingly, Bauer translates ‘statuo’ as ‘I-build’ while Bianchi translates it as ‘I found’. This difference has no consequences for the present discussion, however.

Crystal (1997:55) defines cataphoric reference as a way of marking the identity between what is being expressed and what is about to be expressed. In the case of Pittner’s analysis, a cataphoric demonstrative pronoun in the matrix clause is ‘what it being expressed’ and a post-posed asyndetic relative clause is ‘what is about to be expressed’.

Harris and Campbell (1995: 68-70) make a similar observation about Old Georgian, a South Caucasian language (i.e., not Indo-European). After noting that ICA occurs in Georigan, they state that ‘in some examples’ a resumptive pronoun appears in the MC which fulfills the same grammatical role as the head noun and is marked in the Case determined by the MC.

Note that the possibility of a change in adjunction site from the IP of the MC to the MC-DP was mentioned in Section 3.4.1.

Section 3.4.1 argues that this assumption is not necessarily true; it is also possible to assume that CRCs were adjoined to the MC-DP and underwent raising to a fronted position. Under this scenario, the change from CRCs to prenominal and postnominal RCs involves a loss of movement rather than a change in adjunction site.

Kiparsky (1995: 155-158) gives additional arguments for assuming that CRCs were adjoined to MCs. Kiparsky does not specifically identify IP as the adjunction site for CRCs, but more generally argues that adjoined subordinate clauses (including CRCs) were positioned at the right or left periphery of MCs.

It is difficult to establish a precise timeline associated with the transition from CRCs in early Latin to postnominal RCs in later varieties of Latin, but for one attempt see Bauer (1995: 160-161).

The coexistence of CRCs and RCs is not limited to Latin. In Hindi, preposed CRCs and post-nominal RCs also coexist (Bhatt 2003).

The status of right-adjunction is controversial in current syntactic theory. For example, Kayne (1994) argues that all adjunction is to the left. I do not attempt to resolve this question here, but I assume that right-adjunction is possible and direct readers to some recent research that argues in favor of allowing right-adjoined structures. Ernst (2002) makes a strong case that adverbials may be right or left adjoined (for a review of Ernst (2002), see Potsdam (2004)). Laenzlinger (1998) also concludes that adverbial adjuncts may be either right-adjoined or left adjoined.

For example, the sentence “The man loves the woman” in English could be rendered in a number of ways in Latin:

- The man loves the woman.
- The man the woman loves.
- Loves the man the woman.

Such variation was possible because Latin overtly marked the Case of the NPs in a sentence, such that ‘the man’ would be overtly marked for NOM case and ‘the woman’ would be overtly marked for ACC case, thus making their grammatical function in the sentence clear regardless of the linear order in which they appeared.

Exceptions to these generalizations are common, however. For example, English is an SVO language but exhibits adjective-noun order (which is typical of OV word order) rather than noun-adjective order (which is typical of VO word order, as seen in SVO Romance languages such as Spanish, French and Italian).

De Vries (2002) includes some typological data in Appendix II of his book. He identifies 23 languages in his sample that use correlative structures (Table 4 of Appendix II, page 388), and of these 21 have SOV as their basic (unmarked) word order. Ancient Greek (SVO) and Medieval Russian (SVO?) are the exceptions.

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With respect to prenominal RCs, 32 of the 35 languages in his sample (Table 5 of Appendix II, pages 389-390) are SOV, with Chinese, Finnish and Palauan being the exceptions.

De Vries (2002) includes 20 VSO languages in his sample (see Table 2 of Appendix II), and all 20 employ postnominal RCs. In Greenberg’s (1963) sample, which covered 30 total languages, 5 of these were VSO and all 5 of these employ postnominal RCs.

Harmony in the sense of conforming the Greenberg’s (1963) implicational universals.

In (42-43), the coindexation indicates that the relevant DPs corefer. Ignore the other available interpretation, where the pronoun and NP do not corefer.

In contrast with Romance relativizers, Germanic relativizers have their origin as demonstrative determiners.

These examples were the same ones referenced by Bianchi (1999: 93) in her discussion of ICA; see section 4.3.3.

Zagona (2002: 99) suggests that ‘esos’ in (50) is ‘perhaps an adjunct’ to the main DP (‘los libros’), but no definitive position is stated. If the DP ‘esos’ is viewed as an adjunct, then the structure in (50) suggests that right-adjunction is possible in Spanish. Zagona (2002: 131-135) also argues that verbal adjuncts are right adjoined as part of a larger discussion of the difference between verbal complements (which are analyzed as sisters of Vº) and verbal adjuncts (which are analyzed as sisters of V’).

French ‘qui’ in subject RRCs is an exceptional case which will be addressed below in section 5.3.


For a comprehensive overview of the various uses and definitions of the term ‘grammaticalization’, see Campbell and Janda 2001: 94-107).

It should be noted that not all Old English relatives were introduced by inflected demonstrative pronouns in Spec,CP. Old English relatives were introduced in one of three ways (see Fischer, van Kemenade, Koopman and van der Wurff 2000: 58-61):

- With an inflected form of the demonstrative pronoun ‘se’ (i.e., se, seo, pæt)
- With the indeclinable relative marker ‘pe’
- With a combination of a form of ‘se’ and ‘pe’ (i.e., se pe, seo pe, etc.)

It is only the first type, introduced by an inflected form of ‘se’, that directly parallels RRCs in modern German.

Van Gelderen’s (1997: 2) economy condition is stated in simple terms as “if possible, be a head”.

Excluding direct object relatives in Spanish that involve a relative pronoun preceded by the personal ‘a’; the personal ‘a’ behaves like a preposition, as will be discussed shortly.

In Germanic the picture is more complex, as one finds doubly filled CPs in relatives in languages like Old English and modern Bavarian German. The basic analysis given here can be extended to Germanic, but the origin of uninflected subordination markers like ‘pe’ in Old English and ‘wo’ in Bavarian, which co-occur with inflected demonstrative pronouns in doubly filled CPs in relative clauses in these languages, would have to be taken into consideration and accounted for. This issue will not be addressed here.

El cual may also be used, though its use in RRCs is highly unusual and may sound stilted; in any case, its syntactic properties are the same as those of el que in direct object RRCs.

The Personal ‘a’ is more likely to be omitted with el que than with quien.

Some authors note that at times sobre (Martínez 1989 and Alarcos 1994) may sometimes appear with pied-piped relatives without an article (Brucart 1999). Ramírez (1951) also identified an example of the preposition ante pied-piped to a relativizer without an article. However, in general these two prepositions tend to behave like all other multi-syllabic prepositions are require the use of the definite article in such constructions (Brucart 1999).
Vita

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