

# Two Types of Relative Clauses in Germanic and Romance Languages\*

Shun'ichiro Inada  
University of Tokyo

shun\_inada@yahoo.co.jp

## Abstract

*This paper makes clear an important distinction in relative clauses in Germanic and Romance languages based on morphological forms of relative pronouns and structural positions of relative clauses within DP. I claim that there are two types of relative clauses: (i) a relative clause which allows an overt relative pronoun only when it is accompanied by a pied-piped preposition; and (ii) a relative clause with an overt relative pronoun, allowing larger constituents to be pied-piped. In the second type of the relative clause only a d-pronoun or a complex pronoun with the form of a determiner and a wh-word is used. Under this typology of relative clauses, two points are shown. The first is that English infinitival relatives, which do not allow an occurrence of an overt relative pronoun without a pied-piped preposition, constitute the first type of relative clauses. The second is that English finite relatives are peculiar from a cross-linguistic perspective. Only a d-pronoun or a complex pronoun can be bare in Germanic and Romance languages whereas in English, a wh-pronoun can be "bare" (i.e. without pied-piped constituents). Concerning the peculiarity of English wh-pronouns, investigation of a historical change of relative clauses in English suggests the reason why they have such a property.*

*Keywords: (Infinitival) Relative Clause, Wh-pronoun, D-pronoun, Null-operator*

## 1. Introduction

This paper considers a restriction on the occurrence of relative pronouns in Infinitival Relative Clauses (IRCs) and Finite Relative Clauses (FinRCs) in Germanic and Romance languages, and presents a new typology of relative clauses. Unlike in FinRCs, the occurrence of relative pronouns is restricted in IRCs. In this section, I briefly look at a restriction imposed on relative clauses in several languages.

### 1.1. Restriction on Infinitival Relative Clauses

IRCs in English (1) have a peculiar syntactic property that is not observed in FinRCs (2): wh-pronouns cannot appear unless they are accompanied by a pied-piped element as shown below:

---

\* I would like to thank Noriko Imanishi, Akira Watanabe for their helpful comments and discussions on earlier versions of this paper. Needless to say, all remaining errors are my own.

- (1) a. John found a topic (*\*which*) to work on.  
 b. John found a topic *on which* to work.
- (2) a. John found a topic (*which*) you should work on.  
 b. John found a topic *on which* you should work.

The relative pronoun *which* cannot occur in IRCs unless it is accompanied by the pied-piped preposition as in (1b). In English FinRCs, no restriction on pied-piping is observed as in (2a).

The same restriction is observed to hold in French IRCs and Italian IRCs.

*French*

- (3) a. J'ai trouvé un livre (*\*lequel*) à lire.  
 'I have found a book which to read.'
- b. Elle cherche quelqu'un *avec qui* parler.  
 'She's looking for someone with whom (to) talk.' (Kayne (1984: 104))

*Italian*

- (4) a. Ho dei calcoli (*\*cui*) da fare.  
 'I've some calculations to do (which I must do).'
- b. Aveva portato un cacciavite *con cui* aprirli.  
 'He had brought a screwdriver with which to open them.'
- (Maiden & Robustelli (2000: 141-142))

Let us call a relative pronoun without a pied-piped element "a bare relative pronoun." Suppose that both the bare relative pronoun in (1a), (3a) and (4a) and the relative pronoun with the preposition in (1b), (3b) and (4b) occupy [Spec,CP]. Then, we can state the restriction above as in (5):

- (5) In IRCs, a bare relative pronoun is not allowed in [Spec,CP].

Why are bare relative pronouns not allowed to occur in IRCs? One might argue that the peculiarity of IRCs is due to the non-finiteness.<sup>1</sup> However, a cross-linguistic investigation of FinRCs reveals that this restriction is not peculiar to IRCs.

1.2. *Restriction on Romance Finite Relatives*

The restriction that appears to apply only to IRCs is also observed to hold in Italian and

---

<sup>1</sup> It has often been claimed that the phrase in [Spec,CP] involving the relative pronoun is deleted when it is non-distinct (in the sense of Chomsky (1965: chap.4)) from the head of the relative clause. Then (5) can be reduced to more general restriction on deletion.

French FinRCs as in (6)-(9):

*French*

- (6) a. Le garçon {que / \*qui} tu as invité est arrivé.  
'The boy {that / who} you have invited has arrived.'  
b. Le garçon {\*que / à qui} tu as parlé est mon frère.  
'The boy {that / to whom} you have talked is my brother.'
- (7) a. Le garçon {que / (\*)lequel} tu as invité est arrivé.  
'The boy {that / who} you have invited has arrived.'  
b. Le garçon {\*que / auquel} tu as parlé est mon frère.  
'The boy {that / to whom} you have talked is my brother.'

*Italian*

- (8) a. L'uomo {che / \*cui} vedu è suo zio.  
'The man {that / \*whom} you see is her uncle.'  
b. L'uomo {\*che/ a cui} parlavi è cieco.  
'The man {\*that / to whom} you were speaking is blind.'
- (9) a. L'uomo {che / \*il quale } vedu è suo zio.  
'The man {that / \*whom} you see is her uncle.'  
b. L'uomo {\*che/ al quale } parlavi è cieco.  
'The man {\*that / to whom} you were speaking is blind.'

(Cinque (1982: 248-249))

In these languages, we find two forms of relative pronouns: the simple relative pronouns *qui* and *cui*, and the complex relative pronouns *lequel* and *il-quale*.<sup>2</sup> The simple form is a wh-pronoun, which is a homonym of a wh-word, and the complex pronoun consists of a determiner *le* and *il*, and a wh-word *quel* and *quale*. As exemplified above, none of these relative pronouns can appear without pied-piping in Romance FinRCs. This is exactly the case with IRCs.

Previous approaches to IRCs are construction-specific and miss important cross-linguistic generalizations concerning the relative clauses. The surface filter proposed by Chomsky and Lasnik (1977) or "defectiveness" of functional category in IRCs pointed out by Law (2000) or Bianchi (1999, 2004) cannot explain the fact that the same restriction holds in FinRCs.<sup>3</sup> Thus,

<sup>2</sup> *Que* in French FinRCs and *che* in Italian FinRCs are complementizers used in both relative clauses and subordinate clauses. In this paper, I gloss *quel/che* as 'that.'

<sup>3</sup> To restrict the options for transformational grammar, Chomsky and Lasnik (1977) formulate a filter specific to English infinitival clauses and claim that (1a) with the overt relative pronoun *which* is ungrammatical because it is ruled out by this filter:

the restriction in (5) is revised as a more general one:

(10) A bare relative pronoun is not allowed in [Spec,CP].

However, one can easily find counterexamples to this general restriction (10). In English FinRCs, there is no restriction on the occurrence of bare relative pronouns as in (2a). In addition, the restriction does not hold in the Romance non-restrictive FinRCs with complex pronouns. In these non-restrictive relatives, bare complex pronouns are allowed to occur:

*French*

- (11) a. Ma soeur, {qui/\*qui/laquelle} est arrivée justement hier...,  
'My sister, who has just arrived yesterday ...'  
b. Ma soeur, {que/\*qui/laquelle} le magistrat avait convoquée pour le lendemain...,  
'My sister, who the magistrate had summoned for the next day ...'  
c. Ma soeur, {\*que/à qui/à laquelle} tu as parlé hier...  
'My sister, to whom you have talked yesterday...'

*Italian*

- (12) a. Giorgio, {che/\*cui/il quale} ti vuole, è là.  
'Giorgio, {that/who} wants you, is there.'  
b. Giorgio, {che/\*cui /?il quale} stimi, l'ha fatto.  
'Giorgio, that you esteem, has done it.'  
c. Giorgio, {\*che/a cui/al quale} tieni, ti odia.  
'Giorgio, of whom you are fond of hates you.' (Cinque (1982: 249))

Here, we have two types of relative clauses: the relative clause in which the restriction (10) holds and the relative clause in which it does not. Furthermore, the distinction between these two types of relatives is independent of the finiteness of relative clauses or the distinction between restrictive and non-restrictive relatives. Henceforth, the relative clauses which belong to the former type will be referred to as Type1 and the latter as Type2. IRCs in English, French, and Italian, and Romance restrictive FinRCs belong to Type1 relatives. English restrictive FinRCs and Romance non-restrictive FinRCs are Type2 relatives.

Before proposing an analysis of two types of relative clauses, in section 2, I will argue that IRCs are, in fact, relative clauses projecting CP with a null-operator Op or a relative pronoun with a preposition in the [Spec,CP] position, counter to arguments which claim that IRCs are not CPs.

---

(i)  $*[\alpha\text{NP to VP}]$ , unless  $\alpha$  is adjacent to and in the domain of [-N]  
(Chomsky and Lasnik (1977: 460))

### 1.3. IRCs are CPs

I claim that IRCs are indeed CPs although they frequently lack an overt subject or a complementizer in English. Law (2000) claims that IRCs are VPs and suggests that the restriction observed in IRCs can be explained by the base-position of DPs (in this case, bare relative pronouns) and PPs (relative pronouns accompanied by prepositions) under the Structure Preserving Hypothesis.<sup>4</sup> However, contra Law (2000), IRCs involve the projection of T because they allow covert modality as shown below:

- (13) a. The man [to help you] is Mr. Johnson. ['who can help you']  
b. The man [to see] is Mr. Johnson. ['whom you should see']  
(Quirk et al. (1985: 1266))

In (13a,b), IRCs are interpreted as having modal readings which are glossed as *can* or *should*.

Furthermore, in French and Italian, the occurrence of the overt “prepositional” complementizer is obligatory in IRCs, in marked contrast to a English complementizer *for* (+NP):

- (14) a. John found a topic (*for* him) to work on.  
b. J'ai trouvé un livre \*(à) lire.  
'I have found a book “à” to-read' (cf. Kayne (1984))  
c. Ho dei calcoli \*(*da*) fare.  
'I've some calculations “da” to do (which I must do).'

(cf. Maiden & Robustelli (2000))

In examples (14b-c), the prepositional complementizers cannot be omitted despite the lack of an overt subject. One might argue that French *à* and Italian *da* are counterparts to the infinitival marker “to” in English. However, In French and Italian, the co-occurrence of the relative pronoun and the prepositional element is not allowed as in English.

- (15) a. John found a topic on which (\*[*for* him]) to work.  
b. Elle cherche quelqu'un avec qui (\*à) parler.  
'She's looking for someone with whom to talk.'

---

<sup>4</sup> He claims that the difference between the occurrence of DP (*which*) and PP (*with which*) is subject to the Structure Preserving Hypothesis. IRCs are claimed to be VPs and do not have a position to substitute DP as illustrated in the examples of normal VPs below.

(i) a. \*We had, all the diplomats, put in the next room. (\*DP + VP)  
b. We had, in the other room, put all the diplomats. (PP + VP)

The paradigm of the proposed DP/PP is similar to the patterns in IRCs.

- c. Aveva portato un cacciavite con cui (*\*da*) aprirli.  
 ‘He had brought a screwdriver with which to open them.’

The fact that the occurrence of these prepositional elements is constrained by the Doubly Filled Comp Filter, as shown in (15), indicates that they function as complementizers in IRCs. These prepositional complementizers *à* and *da* are true complementizers which occupy  $C^0$ .

Canac Marquis (1996) observes that French has two types of prepositional complementizer, *de* and *à*, and only infinitival clauses with *à* allow an object gap in so-called *tough*-constructions:

- (16) a. Il est facile *de*/*\*à* convaincre Pierre.  
 it is easy *de/à* to-convince Peter  
 ‘It is easy to convince Peter.’  
 b. Pierre est facile *à*/*\*de* convaincre *t*.  
 ‘Peter is easy to convince.’ (Canac Marquis (1996: 35))

It is also observed that only *à*-marked infinitival clauses can license a parasitic gap:

- (17) a. \* Il est facile *de* voir ces bibelots [lorsqu’*on* dispose sur la table].  
 ‘It is easy to see these trinkets when one puts (them) on the table.’  
 b. ? Ces bibelots sont faciles *à* voir *t* [lorsqu’*on* dispose *e* sur la table].  
 ‘These trinkets are easy to see when one displays on the table.’  
 c. ? Voilà de beaux bibelots *à* voir *t* [lorsqu’*on* dispose *e* sur la table].  
 ‘These are nice trinkets to see when one displays on the table.’ (Canac Marquis (1996: 36))

In *tough*-clauses, a null-Operator *Op* originating in object position moves to [Spec,CP] position, and establish co-indexing between a matrix subject and an embedded object as required by a rule of predication. (18) exemplifies a long distance co-indexation (cf. Chomsky (1977: 103)):

- (18) John<sub>*i*</sub> is easy [*Op*<sub>*i*</sub> [to convince Bill to arrange for Mary to meet *t*<sub>*i*</sub>]].

Unlike *wh*-movement, NP-movement does not license a parasitic gap (cf. Lasnik and Uriagereka (1988: 72-73)):

- (19) a. Which report<sub>*t*</sub> did you file *t*<sub>*i*</sub> [without reading *e*<sub>*i*</sub>]?  
 b. \* The report<sub>*t*</sub> was filed *t*<sub>*i*</sub> [without reading *e*<sub>*i*</sub>].

The fact that only  $\bar{a}$ -marked infinitival clauses allow the application of *tough*-movement and licenses a parasitic gap indicates that  $\bar{a}$  is an infinitival complementizer occupying  $C^0$  with Op in the [Spec,CP] position. Thus, the French IRCs, which are marked by  $\bar{a}$ , are indeed CPs containing Ops. We have seen in (14c) that in Italian, *da* is used as a complementizer of IRCs. As exemplified by (20), Italian *tough* clauses are marked by *da*.

(20) Il problema non e' facile [*da* risolvere e subito].

'The problem is not easy to solve immediately.'

(Cinque (1990: 85))

Cross-linguistically, it is clear that IRCs are CPs with Op in the [Spec,CP] position for predication.

The goal of this paper is to show that there are two types of relative clauses. In sections 2 and 3, I will present some empirical data to show the differences between Type1 and Type2. I briefly look at the analysis of Cinque (1982), which examines the Romance relatives and English relatives from a cross-linguistic viewpoint. Based largely on the Cinque's (1982) analysis, I will discuss a general restriction on the occurrence of overt relative pronouns. Then, I will reexamine the typology of relative clauses with respect to morphological differences of relative pronouns: d-pronouns and complex pronouns vs. wh-pronouns. In section 4, I will consider the historical development of relative pronouns in English to provide an explanation for the peculiarity of English wh-pronouns which behave like d-pronouns. I will also look at the historical change of IRCs. In section 5, I present a mechanism from which a typology of relative clauses can be derived based on the generalizations I made. Section 6 concludes this paper.

## 2. Types of Relatives and Relative pronouns

### 2.1. Difference between Pied-Piping Phenomena in Relative Clauses

In Type1 relatives, relative pronouns cannot be bare and must be accompanied by some pied-piped elements. In Type2 relatives, relative pronouns can be bare. In this section, I will consider the size of a constituent pied-piped with bare relative pronouns in Type1 and Type2 in three languages, and demonstrate there is a clear difference with respect to the possibility of pied-piping between Type1 relatives and Type2 relatives.

As shown in the examples (21), the possible size of a pied-piped element is limited in English FinRCs:

(21) a. This is the box [*in which* the money was hidden]

- b. The plane, [*pieces of which* were scattered around the field], had crashed during the thunder storm.
- c. That woman, [*compared to whom* Attila the Hun was an angel], is unfortunately my husband's favorite aunt.
- d. The tree, [*seated next to which* they found themselves], had been planted on the highest point in the park.
- e. The elegant parties, [*to be admitted to one of which* was a privilege], had usually been held at Delmonico's.
- f. \* The elegant parties, [*for us to be admitted to one of which* was a privilege], had usually been held at Delmonico's.
- g. \* They bought a car, [(*the idea*) that *their son might drive which* was a surprise to them].

(Nanni & Stillings (1978: 310))

The relative pronoun *which* is accompanied by a pied-piped infinitival clause with its overt subject as in (21f) and one accompanied by a pied-piped finite clause as in (21g) are ungrammatical, while examples of pied-piping of smaller constituents are all grammatical (21a-e). In contrast to FinRCs, however, pied-piping in IRCs is restricted and only a preposition is allowed to be pied-piped as shown in (22):

- (22) a. I found a topic [*on which* to work].
- b. \* I found a book [*the content of which* to discuss with Mary]. (Ishii (1985))
- c. % Rudy is a good person [*whose brain* to pick]. (McCawley (1988))
- d. \* I was looking for someone [*with whose help* to repair my bicycle]. (Cinque (1982))

Unlike in (21b), a relative pronoun in IRCs as shown in (22b) is not allowed to be with a noun phrase, i. e., *the content of which*.

These observations in English lead us to the generalization (23):

- (23) a. In FinRCs, pied-piping of elements smaller than CP is possible.
- b. In IRCs, only minimal pied-piping (pied-piping of a preposition) is possible.

However, in Italian and French restrictive FinRCs, the same restriction (23b) is observed to hold. In Italian restrictive FinRCs with a wh-pronoun *cui* as in (24), only minimal pied-piping is possible (cf. Cinque (1982))<sup>5</sup>:

---

<sup>5</sup> Italian lacks genitive relative pronouns.



- (24) a. L'uomo [*a cui* parlavi] è cieco.  
 the-man with whom you-were-speaking is blind
- b. \* L'uomo [*la figlia di cui* fuma] è generalmente contrario.  
 the-man the daughter of whom smokes is generally against-it
- c. \* L'uomo [*alla figlia di cui* hai scritto] è in collera.  
 the-man to-the daughter of whom you-have written is in anger
- d. \* L'uomo [*fuggire da cui* non osava] è morto.  
 the-man to-fly from whom not he-dared has died

The same restriction is observed when a wh-pronoun *cui* is replaced by a complex pronoun *il-quale*.<sup>6</sup> However, Italian non-restrictive FinRCs with a complex pronoun as in (25) allow pied-piping of larger elements than restrictive FinRCs as shown in (24):

- (25) a. Giorgio, [*al quale* tieni], ti odia.  
 George to which you-are-fond-of you hates
- b. Giorgio, [*la figlia del quale* fuma], è contrario.
- c. Giorgio, [*alla figlia del quale* hai scritto], è in collera.
- d. Giorgio, [*fuggire dal quale* non o sava], è morto.
- e. \* Giorgio, [*che voi abbiate scritto al quale* credo sia stato un errore], ...  
 Giorgio that you have written to whom I-think it-is stated an error

In French relatives, which also have two types of relative pronoun as shown above, the same difference is observed between restrictive FinRCs and non-restrictive FinRCs.<sup>7</sup>

Thus, the generalization (23) is revised as below:

- (26) a. In Type2 relatives, pied-piping of elements smaller than CP is possible.
- b. In Type1 relatives, only minimal pied-piping (with a preposition) is possible.

This descriptive generalization captures some difference between Type1 and Type2, which needs a principled explanation. Thus, the question is from what kinds of general principles these two types of relative clauses follow.

<sup>6</sup> In Italian restrictive FinRCs with *il-quale*, only minimal pied-piping is possible.

<sup>7</sup> French restrictive and non-restrictive FinRCs show the same paradigm of pied-piping. In restrictive FinRCs with both types of relative pronoun and in non-restrictive FinRCs with a wh-pronoun *qui*, only minimal pied-piping is possible. On the other hand, in non-restrictive FinRCs with a complex pronoun *lequel*, larger pied-piping is possible. See Cinque (1982) for the more detailed discussion.

## 2.2. Cinque's (1982) Analysis

Cinque (1982) claims that there are two types of structures for relative clauses, and that languages differ as to which type of structures in (27) is available to what kind of relative clauses and which type of structures is either unmarked or marked (Cinque (1982: 250, 260)).

- (27) a. The relativization structure is: [NP NP S'].  
b. The relative clause is a juxtaposed clause as: NP..., S', ...

For IRCs, the structure (27a) is available. For Romance restrictive FinRCs, the structure (27a) is available and is unmarked. For English FinRCs and Romance non-restrictive FinRCs, the structure (27b) is available. It is unmarked in English and is marked in Romance.

In Cinque's analysis, the obligatory deletion in COMP in (27a) and the condition on deletion as in (28) are proposed. He claims that the requirement for the deletion of a category is that it is non-distinct (in the sense of Chomsky (1995: chap.4)) from the controller of the deletion and that it satisfies the c-command condition:

- (28) A category  $\beta$  counts as recoverable iff  
(i) it is non-distinct from a category  $\gamma$  (the controller); and  
(ii) it is c-commanded by the controller.

In the structure (27a), the relative pronoun must be deleted when it is non-distinct from the head of the relative clause. In Romance relative clauses, whose unmarked structure is (27a), a bare relative pronoun is deleted obligatorily, while the relative pronoun with a pied-piped preposition, which is not non-distinct from the head, cannot be deleted. However, this condition on the obligatory deletion does not explain the optional deletion of the relative pronoun in Romance non-restrictive relatives or English FinRCs.

Cinque's assumption discussed so far appears to make an obviously false prediction about the paradigm of *il-quale* and *che* in Italian non-restrictive FinRCs repeated in (29):

- (29) a. Giorgio, {*il quale* / *che*} ti vuole, è là.  
'Giorgio, {who / that} wants you, is there.'  
b. ?Giorgio, {*il quale* / *che*} stimi, l'ha fatto.  
'Giorgio, {whom / that} you esteem, has done it.' (cf. Cinque (1982: 249))

As I have discussed above, the paradigm of *il-quale* in non-restrictive FinRCs differs from the (non-)restrictive paradigm of *cui* and from the restrictive paradigm of *il-quale*. In (29), the subject or the object is relativized by both Op with *che* and bare relative pronoun *il-quale*.

Cinque argues that the paradigm (29) is “not a coherent or genuine paradigm, but is rather the conflation of two quite distinct paradigms.” He claims that the bare relative pronouns do not belong properly to the paradigm but rather that they form a separate paradigm. The result of dissociating the non-restrictive FinRCs with the bare relative pronouns in (29) from the Op (with *che*) relatives is represented by the following two paradigms (30) and (31)<sup>8</sup>:

- (30) a. Giorgio, {(\*il quale) / che} ti vuole, è là.  
 ‘Giorgio, {\*who / that} wants you, is there.’  
 b. Giorgio, {(\*il quale) / che} stimi, l’ha fatto.  
 ‘Giorgio, {\*whom / that} you esteem, has done it.’  
 c. Giorgio, {al quale / (\*che)} tieni, ti odia.  
 ‘Giorgio, {(of) whom / \*that} you are fond of, hates you.’
- (31) a. Giorgio, {il quale / (\*che)} ti vuole, è là.  
 ‘Giorgio, {who / \*that} wants you, is there.’  
 b. Giorgio, {?il quale / (\*che)} stimi, l’ha fatto.  
 ‘Giorgio, {whom / \*that} you esteem, has done it.’  
 c. Giorgio, {al quale / (\*che)} tieni, ti odia.  
 ‘Giorgio, {(of) whom / \*that} you are fond of, hates you.’

Cinque argues that the Italian non-restrictive FinRCs can have the marked structure (27b). In the case of the Italian non-restrictive FinRCs, the relative clauses in the paradigm (30) have the structure (27a), where the relative pronoun is deleted obligatorily, while the relative clauses in the paradigm (31) have the marked structure (27b), where the relative pronoun cannot be deleted. The same pattern is observed in French non-restrictive FinRCs and English FinRCs. The consequence of this dual analysis of Italian non-restrictive relatives is that what appears to be an optional deletion of a relative pronoun in relative clauses is now reduced to the choice between the following two: obligatory deletion in (27a) or impossibility of deletion in (27b).

In Cinque’s (1982) argument, there are two tacit assumptions. The first assumption is that the kind of relative clauses allowed to have the unmarked structure is determined in each language. The second is that, in relative clauses without an overt relative pronoun, the relative pronoun is deleted. I argue that both assumptions are problematic in the current P & P approach. The problem of the first assumption is that a single parameter discussed above cannot explain the variation of relative clauses adequately, because there is a third type of relative clause, in addition to a first type with (27a) (i.e. IRCs and Romance restrictive FinRCs) and a second type with either (27a) or (27b) (i.e. Romance non-restrictive FinRCs

---

<sup>8</sup> The bare relative pronouns in (29) are said to belong to a slightly more formal style.

and English restrictive FinRCs). This third type is non-restrictive FinRCs in English, which only has the structure (27b)<sup>9</sup>:

(32) the man, {who / \*that} you saw yesterday...

His second assumption should be slightly revised. Chomsky (1977), along with many others, claims that relative clauses are formed in much the same way as wh-interrogatives. They both involve operator phrases and gaps. In addition to wh-operators, which are morphologically identical to wh-interrogatives, relative clauses allow null-operator Ops and both of these operators are moved to [Spec,CP], leaving a trace that functions as a variable, as illustrated in (33):

- (33) a. the people [<sub>CP</sub> who John expected to meet *t*]  
b. the people [<sub>CP</sub> Op (that) John expected to meet *t*] (Chomsky (1995: 70))

Given the analysis above, the “covert relative pronouns” are treated not as phonologically deleted overt relative pronouns but as Ops.

Here the generalization (26) is revised as in (34):

- (34) a. In Type1 relatives, a relative pronoun must be Op, except in the case of minimal pied-piping.  
b. In Type2 relatives, a relative pronoun must be overt, and pied-piping of a larger constituent (smaller than CP) is possible.

### 2.3. Type1 vs. Type 2 Relatives

We have so far observed various types of relative clauses in English, French and Italian and made some generalizations from the following points of view: (i) the restriction on the occurrence of bare relative pronouns and (ii) the restriction on the size of pied-piping. The relative clauses are classified into two types, Type1 relatives, which allow only minimal pied-piping and do not allow the occurrence of bare relative pronouns, and Type2 relatives, which allow the occurrence of bare relative pronouns and pied-piping of the larger constituents than PP.

Why are there two types of relatives in these languages? What is a decisive factor which leads to two types? Romance relatives have two types of morphologically distinct relative pronouns, which are wh-pronouns *qui/cui* and complex pronouns *lequell/ilquale*, and only the

---

<sup>9</sup> German FinRCs belong to this type of relatives. I discuss German relatives later.

latter relative pronouns are allowed to occur in Type2 relatives. The difference between the wh-pronouns and complex pronouns is the following. The complex pronouns have a prefixal determiner *le-/il-* which agrees with the head noun in number and gender but wh-pronouns are simple and have an indeclinable form. Two types of relatives correlate with these properties of the relative pronouns.

It is worth noting that German FinRCs, which use d(emonstrative)-pronouns (i.e. *der*) as a relative pronoun, show the properties of Type2 relatives. German FinRCs allow the occurrence of bare relative pronouns.

- (35) a. Der Mann, [{*der* / \*Op *dass*}dort steht], ist mein Vater.  
 the man {who / \*Op that}there stand is my father  
 ‘The man who is standing there is my father.’
- b. Ich fand ein Buch, [{*das* / \*Op *dass*}ich lesen soll].  
 I found a book {which / \*Op that} I read should  
 ‘I found a book I should read.’
- c. Der Mann, [{mit *der* / \*Op *dass*}ich gesprochen habe], ist mein Freund.  
 the man {with whom / \*Op that} I spoken have is my friend  
 ‘The man I have talked with is my friend.’

Moreover, German FinRCs allow almost all the possibilities of pied-piping of the larger constituents (cf. Riemsdijk (1984)).

- (36) a. Das ist der Mann, *dessen* Vater ich kenne.  
 that is the man whose father I know  
 ‘That is the man whose father know.’
- b. Das ist der Mann, *mit dessen Wagen* ich gefahren bin.  
 that is the man with whose car I driven is  
 ‘That is the man whose car I drove.’
- c. \* Das ist der Mann, *den Freund von dem* er kannte.  
 that is the man the friend of whom he knew  
 ‘That is the man the friend of whom he knew.’
- d. Die Lotte ist ein Mädchen, *mit der unseren Sohn ausgehen zu lassen* mir  
 the Lotte is a girl with whom our son go-out to let-to-me  
 nun doch etwas unratsam erscheint.  
 emph.particles somewhat unrecommendable seems  
 ‘Lotte is a girl, to let our son go out with whom really does not seem  
 recommendable to me.’

The German d-pronoun is homonymous with a determiner and agrees with the head noun of the relative clause in number and gender.<sup>10,11</sup>

On the other hand, even in the case of minimal pied-piping, German d-pronouns cannot occur in IRCs, which appear to fall into Type1 relatives as in the other languages:

- (37) a. Ich fand ein Buch {\*das / Op} *t* zu lesen.  
 I found a book {the / Op} to read
- b. \* Köln ist eine Stadt, in der *t* zu wohnen.  
 Köln is a city in which to live  
 'Köln is a city in which to live.'
- c. \* Köln ist eine Stadt, {der / Op} in *t* zu wohnen.

As shown in (37b), even with a pied-piped preposition, d-pronouns are not allowed to occur in German IRCs. The example (37c) shows that preposition-stranding is not allowed in German. In German IRCs, only Op is allowed as a relative pronoun.

Based on the discussion above, the traditional typology of relative clauses should be modified as in table (38):

<sup>10</sup> Here I ignore another relative pronoun *welcher*, which is rarely used in modern German.

<sup>11</sup> Dutch is said to be another kind of languages that use a d-pronoun as its relative pronoun. de Vries (2002, 2006) observes that the regular non-neuter relative pronoun is *die*, but it changes into *wie* in the vicinity of a preposition.

- (i) a. de man {die/\*wie} ik zie/bewonder/sla.  
 the man {"die"/\*whom} I see/ admire/hit
- b. de man {met wie/\*met die} ik praat  
 the man {with whom} I talk

The bare wh-pronoun *wie* is not allowed in (ia) but it is allowed to occur with the pied-piped preposition in (ib). On the other hand, *die* can be bare as in (ia). These observations meet the prediction. However, the fact that *die* cannot occur with the pied-piped preposition contradicts the prediction, since every type of relative pronouns are allowed to occur when they are accompanied by a preposition as I have shown above.

I assume that *die* in Dutch is a complementizer occupying C<sup>0</sup> in Type1 relatives. Thus, the example (ia) with *die* exemplifies Type1 relatives with Op, and the example (ib) with (*met*) *die* is ruled out by the impossibility of pied-piping with Op. From another perspective, Pesetsky suggests at 7th annual Tokyo Conference on Psycholinguistics (2006) that not only *die* but also every type of bare relative pronouns occupies C<sup>0</sup>.

(38) Two Types of Relative Clauses

		Possible Types of Relative Pronouns	Languages	Possible Constituents with RPs in [Spec,CP]			
Type1	IRCs			Bare (DP)	minimal Pied-Piping (PP)	larger Pied-Piping (larger Phrase)	
Type1	IRCs	Op	English French/Italian German	ok	*	*	
		WH	English French/Italian	*	ok	*	
		D+WH	French/Italian	*	ok	*	
	FinRCs (restrictive)	Op	English French/Italian	ok	*	*	
		WH	French/Italian	*	ok	*	
		D+WH	French/Italian	*	ok	*	
		Op	French/Italian	ok	*	*	
	Type2	FinRCs (non-restrictive)	WH	French/Italian	*	ok	*
			WH	English	ok	ok	ok
		FinRCs (restrictive)	D+WH	German	ok	ok	--
WH			English	ok	ok	ok	
FinRCs (non-restrictive)		D+WH	French/Italian	ok	ok	ok	
	D	German	ok	ok	--		

WH = wh-pronoun: which (English), qui (French), cui (Italian)

D+WH = d+wh-pronoun: le-quel (French), il-quale (French)

D = d-pronoun: der (German)

If we put aside the English wh-pronoun for the moment, it can be said based on table (38) that there are three types of relative pronouns: (i) a wh-pronoun which can only occur in Type1 relatives, (ii) a complex pronoun (determiner+wh-word) which can occur in both types of relatives, and (iii) a d-pronoun which can only occur in Type2 relatives.

As for the wh-pronoun in English, however, it is difficult to explain within the approach presented so far the fact that the English wh-pronoun also occurs in Type2 relatives: the English wh-pronouns cannot be treated morphologically as a d-pronoun because it is indefinite and does not agree with the head noun in number and gender.<sup>12</sup>

Here three questions arise. The first question is whether the FinRCs with Op and those with a wh-pronoun are different types. The second question is why the English wh-pronoun has an exceptional property. The third question is why IRCs always fall into Type1 relatives even in languages with various types of relative pronouns. In the following sections, I will argue that English restrictive FinRCs are divided into two different types of relatives as we have seen in Italian non-restrictive FinRCs with complex pronouns. Furthermore, I will argue that the exceptional property of English wh-pronouns is attributable to a historical change in ME.

### 3. On Wh-pronouns in English: Two Types of Restrictive FinRCs

In the previous section, I have made a distinction between Type1 and Type2 based on the morphological property of relative pronouns. It is true that the pied-piping phenomena serve as a diagnostic for distinguishing between Type1 and Type2, but the minimal pied-piping relatives can fall into either Type1 or Type2. So in the following discussion, I will focus on the relative clause with a bare relative pronoun.

See table (39), which summarizes distributional properties of bare relative pronouns in Type1 and Type2 relatives in English, French and Italian. Table (39) shows that, only in English, wh-pronouns can occur as a bare relative pronoun. Based on the distributional properties of three types of relative pronouns in (39), it is reasonable to claim that English wh-pronouns can be classified as belonging to the same category with d-pronouns or complex pronouns. Given this claim, the English FinRCs are considered to be “the conflation of two distinct relative clauses” in Cinque’s terms: Type1 relatives with a null-operator Op and Type2 relatives with a bare relative pronoun.

---

<sup>12</sup> However, English wh-pronouns agree in *animacy* with the head noun, i.e., *the book {which/\*who} you read yesterday*.



## (39) Possible Bare RPs in Each RC

	Internal structure of relatives	Type1				Type2			
		Fr.	It.	Eg.	Ge.	Fr.	It.	Eg.	Ge.
Op	[ <sub>CP</sub> Op [ <sub>C'</sub> ∅ [ <sub>IP</sub> ...]]]			ok	ok	*	*	*	* <sup>13</sup>
	[ <sub>CP</sub> Op [ <sub>C'</sub> THAT [ <sub>IP</sub> ...]]]	ok	ok	ok					
D +wh	[ <sub>CP</sub> D(+wh) [ <sub>C'</sub> ∅ [ <sub>IP</sub> ...]]]	*	*	*	*	ok	ok	/	ok
wh	[ <sub>CP</sub> wh [ <sub>C'</sub> ∅ [ <sub>IP</sub> ...]]]	*	*	*	*	*	*	ok	/

THAT: overt complementizers in each language/construction, ∅: covert complementizer

In addition to the possibility of the occurrence of bare relative pronouns and pied-piping, there are other properties that help distinguish between Type1 and Type2. Aoun and Li (2003) and Lee (2001) observe that these two types of relatives in English are distinguished with respect to the following three properties.<sup>14</sup> First, the relative clauses whose heads involve idiom chunks become worse when Ops in (40) are replaced by wh-pronouns as shown in (41):

- (40) a. The careful track [Op (that) she's keeping of her expenses] pleases me.  
 b. The headway [Op (that) Mel made] was impressive.
- (41) a. ?? The careful track [which she's keeping of her expenses] pleases me.  
 b. ?? The headway [which Mel made] was impressive.

(cf. Aoun and Li (2003: 110))

Second, the head noun of the relative clauses with Op exhibits reconstruction effects with respect to binding as in (42), whereas the head noun of the relative clause with a wh-pronoun does not as in (43).

- (42) a. The picture of himself<sub>i</sub> [Op (that) John<sub>i</sub> painted in art class] is impressive.  
 b. We admired the picture of himself<sub>i</sub> [Op (that) John<sub>i</sub> painted in art class].
- (43) a. \*? The picture of himself<sub>i</sub> [which John<sub>i</sub> painted in art class] is impressive.  
 b. \* We admired the picture of himself<sub>i</sub> [which John<sub>i</sub> painted in art class].

(cf. Aoun and Li (2003: 111))

In the examples (42), the reflexive pronoun *himself* contained in the head noun is bound by the subject of the relative clause *John*, but the reflexive pronoun in (43) cannot be.

<sup>13</sup> As I have mentioned above, German does not have a null complementizer.

<sup>14</sup> The analysis they propose is different from my own. See Aoun and Li (2003).

Finally, Lee (2001) points out that relative clause with Ops allow a narrow scope reading of the relativized quantified head with respect to a quantified NP inside a relative clause, whereas relative clauses with wh-pronouns do not allow a narrow scope reading:

- (44) a. We're looking for someone that knows every application.  
(some>every, every>some)
- b. We're looking for someone who knows every application.  
(some>every, \*every>some) (Lee (2001: 324-325))

#### 4. Historical Change of Relative Clauses in English

##### 4.1. FinRCs in OE and ME

In this section, I consider why English wh-pronouns occur in Type2 relatives from a diachronic perspective.<sup>15</sup> OE (Old English) (450~1150) had two types of relative pronouns; an indeclinable particle *þe* and a d-pronoun *se*. *Se* was also used as a determiner and agreed with a head noun in number and gender.

Examples of *þe* relatives are shown in (45) (Allen (1977: 76)):

- (45) a. Gemyne he þæs yfeles [*þe* he worhte e]  
remember he the evil that he wrought  
'Let him remember the evil that he wrought.' (Sweet CP 25.54)
- b. ... be þam þrim þing [*þe* se Haelend saede e]  
... about the three things that the Savior said  
'... about the three things that the Savoir said' (Alc.P.VII.84)

In (45) the objects of a verb are relativized. In (46) the objects of a preposition are relativized, in which case prepositoon-stranding is obligatory (Allen (1977: 77)).

- (46) a. Seo gesyþ [*þe* we god *myd e* geseon scylon] is angyt  
the sight that we God with see shall is understanding  
'The sight that we shall see God with is understanding.' (Sol. p. 67.6)
- b. ...þam burgum [*þe* he *on e* geworhte his wundra]  
...the cities that he in wrought his miracles  
'...the cities that he wrought his miracles in' (Alc.P.XVII.54)

<sup>15</sup> See Allen (1977) and Los (2005) for more detailed discussion. Most of all examples presented in this section are cited from them with a slight modification(i.e.brackets and gaps) added.

As with modern English *that*-relatives, it is not possible for *þe* to be with a pied-piped preposition.

The second type of relative clause in OE is one in which a d-pronoun *se* is used as a relative pronoun, just as in German (Allen (1977: 83)).

- (47) a. Ac ge onfoþ þaem maegene Halges Gastes [*se* cymb ofor eow]  
 but you receive the power Holy Ghost's who comes over you  
 'But you receive the power of the Holy Ghost, who comes over you.'  
 (Blickling p.119)
- b. Ða man ofsloh þes Caseres gerefan [*se* was Labienus gehaten]  
 then one killed the emperor's reeve who was Labienus called  
 'Then the king's reeve, who was called Labienus, was killed.' (P.C.Prologue)

In contrast to the first type, pied-piping is obligatory in the *se* relatives as in (48) (Allen (1977: 88-89)):

- (48) a. Weorþian we eac þa clapas his hades, [*of þaem* waes ure gekind *e* geefneowod]  
 Honor we also the clothes his person by which was our race renewed  
 'Let us also honor the clothes of his person, by which our race was renewed.'  
 (Blickling p.11)
- b. ...ure yfelan word [*wið þone* we *e* geremodon]  
 ...our evil word with which we provoked  
 '...our evil word with which we provoked' (Alc.S.XV.190)

The possible pattern of pied-piping is the same as that in German relatives with d-pronouns.

In ME, especially in Late ME (LME, 1300~1500), one important change took place in the relative clauses: the appearance of *wh*-pronouns. The earliest examples of *wh*-pronouns used in the relative clause are from the 12th century entries of the Peterborough Chronicle (Allen (1977: 198)):

- (49) ...waes seo mycele eorþbyfung on Lumbaridge, [*for hwan* manega mynstras &  
 ...was the great earthquake in Lombardy for which many monasteries and  
 turas & huses *e* gefeollan]  
 towers and houses fell  
 'There was the great earthquake in Lombardy, because of which many monasteries,  
 towers, and houses fell.' (P.C. 1117.14)

It is worth noticing that the earliest examples of *wh*-pronouns are those with the pied-piped

prepositions. These *wh*-pronouns became fairly common by the middle of the 13th century:

- (50) Cumm nu wiþþ me to sen þin Godd wiþþ erþlig bodigsihþe, [*whamm* þu þurh  
 come now with me to see they God with earthly body-sight, whom you through  
 Drihhtin sest nuggu *e* wiþþ innsiht off þin herrte]  
 Lord see know with insight of thy heart  
 ‘Come now with me to see your God with physical sight, whom you see now, through  
 the Lord, with the insight of your heart.’ (Orm. 13588)

With the emergence of *wh*-pronouns, *d*-pronouns such as *se* went into decline.<sup>16</sup> It might be the case that *wh*-words came to be used as relative pronouns since relative clauses are constructionally similar to indirect questions (see Nakao (1972), Ono and Nakao (1980)).

The *d*-like behavior of *wh*-pronouns in modern English can be attributed to this diachronic change of the relative pronoun. In OE, a *se*-relative is a Type2 relative. Suppose that the Type2 relatives are unmarked in OE in Cinque’s terms. The change in which *d*-pronouns were replaced by *wh*-words, which agreed with head nouns in number and gender at that time, allowed *wh*-pronouns to occur in the unmarked Type2 relatives. It can be said that the effect of this change is reflected in the property of IRCs in English. In the next section, I will review the historical change of IRCs.

#### 4.2. IRCs in OE and ME

In OE, neither *þe* nor *se* appears in IRCs. As we have seen examples of German IRCs, the only possible case of IRCs is one without an overt relative pronoun as in (51a-c). Those with pied-piped prepositions were not found in OE (Allen (1977: 105-107)). When the object of the preposition was relativized as in (51d), the preposition was stranded.

- (51) a. Ða him þa þæt sæd broht wæs ofer ealle tide [*e* to sawenne]  
 ‘when the seed was brought to him quite past the season for sowing’  
 (Bede 366, 31)
- b. me is geseald anweald [*e* to ofsleanne and to edcucigenne]  
 ‘power is given to me to slay and to make alive again’ (ÆLS 34, 322)
- c. hi næfdon hlaf [to etanne *e*]  
 ‘they had no bread to eat’ (Mark 3, 20)

<sup>16</sup> Although Allen (1977) observes that there are still some plausible examples of *se* relatives at the beginning of the 12th century, they disappeared entirely at LME. However, it is sometimes suggested that the appearance of the *wh*-pronouns is not the direct cause of the extinction of the *D*-pronouns in relative clauses.

- d. Gif þær þonne sie gierd [mid *e* to þreageanne]  
 ‘If there is a rod to beat with’

(CP 127, 1)

In OE the preposition is stranded in the same way as it is in finite *þe*-relatives, which is a Type 1 relative. In addition, neither a lexical subject nor a complementizer appears in IRCs.<sup>17</sup>

IRCs in OE are almost the same to the German IRCs. The only difference between IRCs in German and IRCs in OE is that the complement of the preposition cannot be relativized in German since German does not allow preposition stranding. It is worth pointing out that these observations indicate that German IRCs, which are sometimes said to be incomplete sentences or PPs, are not peculiar:

- (52) a. Ich fand ein Buch [*Op e* zu lesen].  
 I found a book to read  
 ‘I found a book to read.’  
 b. \* Ich fand ein Buch [*das e* zu lesen].  
 I found a book which to read  
 c. \* Köln ist eine Stadt, [*Op in e* zu wohnen].  
 Köln is a city in which to live  
 ‘Köln is a city in which to live.’  
 d. \* Köln ist eine Stadt, [*in der e* zu wohnen].  
 Köln is a city in which to live

From these observations in OE and German, we can conclude that the d-pronoun cannot occur in IRCs, while the wh-pronoun or the complex pronoun can occur in IRCs (accompanied by a pied-piped preposition). This conclusion is plausible because IRCs are Type 1 relatives and the relative pronoun which shows a d-like property is associated with Type 2 relatives.

In LME, the wh-pronoun came to be used as a relative pronoun as seen in (49) and (50). The wh-pronoun with a pied-piped preposition also came to be used in IRCs. IRCs with a wh-pronoun appeared a little later in ME than the infinitival indirect questions. The earliest examples of infinitival indirect questions were attested in the 12th century with bare V

<sup>17</sup> Los (2005) claims that the infinitival complementizer *for* is first found in the early stage of ME (EME) and it originally appeared in C but came to be merged with the infinitival *to* when it became adjacent to it as a result of the new VO order as *for-to*. Los (2005) also claims that one motivation for the emergence of *for* may have been the need for an overt complementizer to mark the left edge of the infinitival clause. The idea that *for* was initially positioned in the complementizer position C is supported by attestations of the order *for O to V*. For further discussion, see Los (1999: ff220).

The infinitival clause with its overt subject is first found in the causative constructions in EME and emerges in the 16th century. See also Warner (1982).

infinitives as shown in (53a), and the examples with the *to*-infinitives appeared in the 13th-14th centuries as in (53b-c):

- (53) a. ...ant nuste [*hwet seggen e*]  
and not-knew what to-say  
'and did not know what to say' (St.Kath. 1535)
- b. Heo nusten [*hwat for to do e*].  
they not-knew what for to do  
'They did not know what to do.' (SEL 27. 1624)
- c. and bispeken [*bi hwulche feolonie to don ðis luðere dede e*]  
and spoke by which felony to do this evil deed  
and spoke about which felony to do this evil deed (SEL 17. 62)

The first examples of IRCs with a *wh*-pronoun came from the era of Chaucer (Allen (1977: 217)):

- (54) a. ...and seide he nade no more lande [*wherwið her for to e marie*]  
and said he not-had no more land wherewith her for to marry  
'and said he had no more land with which to marry her' (B.Burt. p.17.24)
- b. She hath no wight [*to whom to make hir mone e*]  
she has no man to whom to make her moan  
'She has not man to whom to complain.' (Ch.B.ML.656)

In IRCs, the *wh*-pronoun is a complex form, *wherwið* "wherewith" as in the (54a) or must co-occur with a pied-piped preposition as in (54b).

In OE, *to*-infinitive started out as a PP with the dative ending *-enne* appearing on verbs following *to*. The evidence presented by those who argue for a PP analysis of the *to*-infinitive is that *to*-infinitives are found to be conjoined with a PP consisting of P and NP, as in (55)<sup>18</sup> (cf. Los (1999: 157-160)). In (55) coordinated phrases are underlined.

- (55) þæt he [...] mihte [...] undon his muð to wisdomes spræcum, and [to wurðianne God]  
that he [...] might [...] undo his mouth to wisdom's speech, and to praise God  
'so that he [...] might [...] open his mouth to wisdom's speech, and to praise God'  
(Æhom 16, 184)

<sup>18</sup> With any arguments for (or against) the analysis that the categorial status of OE *to*-infinitives is that of PP, the PP and the infinitive in the example (55) would be structurally parallel.

These observations indicate that IRCs have a closer relation to the head noun than the other relatives, and this property of IRCs leads them to be Type1 relatives in the languages I have discussed above. In other words, Type1 relatives are in a structurally closer position to the head noun than Type 2 relatives. This would be supported by the observation in the section 3: only Type1 relatives allow reconstruction effects with respect to binding, the relativization of idiom chunks, and narrow scope interpretations. Furthermore, there are no languages in which the restrictive relatives belong to Type2 while the non-restrictive relatives belong to Type1. In the next section, I will propose a structural position of Type1 and Type2 relatives within the projection of the head noun DP.

## 5. Two Structural Positions of Relative Clauses within DP

To explain the difference between Type1 and Type2 relatives, I claim that there are distinct structural positions within DP for Type1 and Type2 relatives to occur. I also propose the licensing conditions on each of the three types of relative pronouns to explain their distribution.

In Type1 relatives including IRCs, relative pronouns must be a null operator Op rather than a d-pronoun or a complex pronoun. This means that relative operators in Type1 relatives can be licensed with less information. The null operator Op is semantically empty (see, Chomsky (1982: 31)).

Suppose that there is a ranking of the closeness of the adjectival modifier to the head noun within DP as in (56):

- (56) Closeness of adjectival modifiers to the head noun  
 AdjectiveP > (IRCs (Type1)) > Type1 > Type2 > (non-restrictive relatives (Type2))

Then it is reasonable to argue that because Op is semantically empty, Op is required to be in the local domain of the head noun DP, which amounts to making closer a relation of Type1 relatives to their head nouns. If the relative pronoun shows a full specification of morphosyntactic features, then it can stand apart from its head within DP. More generally, the further apart from the head noun the adjectival modifier clause is, the more independent it becomes and the relative pronoun becomes overt and morphologically specified. It is worth noting that Type2 relatives, which are the most detached modifier clauses, allow only d-pronouns with rich agreement features.

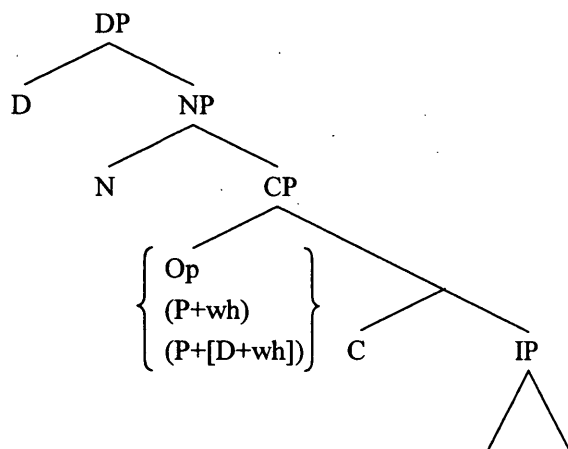
Based on the observations in section 3, I claim that Type1 relatives are a complement of  $N^0$  of a head noun, while Type2 relatives are an adjunct to the NP of the head noun.<sup>19</sup> The

---

<sup>19</sup> It has been proposed that additional functional projections be located between DP layer and head

structural relation between Type1 relatives and its head noun is illustrated as below in (57):

(57) Structural Position of Type1 relatives within Head DP



In (57), the position of the relative pronoun is c-commanded by the head N.

NP. These projections could be headed by abstract agreement features (i.e. number or gender), and could serve as attachment sites for attributive adjectives without positing recursive X' nodes. The presence of intermediate functional heads between the determiner and the base position of N could also explain apparent head-movement of N within DP in Western Romance (Cinque (1992, 2005)), Romanian (Grosu (1988)), and Hebrew (Ritter 1991)). Based on this argument, we can argue that the distinction between Type1 and Type2 depends on the adjunction site of the relative clause: adjunction under a certain functional projection, or adjunction above it.

There are various pieces of supporting evidence. The first evidence concerns the specificity of English wh-pronouns. Relative clauses with wh-pronouns originally have a specific interpretation of the relative head, the property of which the relative clause with Op does not share. Compare the following pairs (see Enç (1991) and de Hoop (1992) for the detailed discussion of the specificity):

- (i) a. \*John lost a lot of friends with whom to talk.
- b. John lost a lot of friends to talk with. (Ishii (1985))

Ishii (1985) observes that IRCs with wh-pronouns are not allowed under some circumstances with respect to the specificity. Watanabe (2002) argues that the specificity is encoded in the semantic content of the Case head, which is also the functional head between N and D in the DP-system. This idea can also be incorporated if we assume that the position of the Type1 relatives in the DP-system is under the CaseP. Within the DP which is non-specific and induces a non-presupposition, IRCs with the overt wh-pronoun including specificity are not allowed because the Type1 relatives are under the CaseP encoding the non-specificity in this case.

The amount relatives also show the same property. Carlson (1977: 525) observes the two types of determiners that are acceptable (*the, these, every, any, all, etc.*) or unacceptable (*ten, few, lots of, many, a, some, etc.*) in amount relatives.

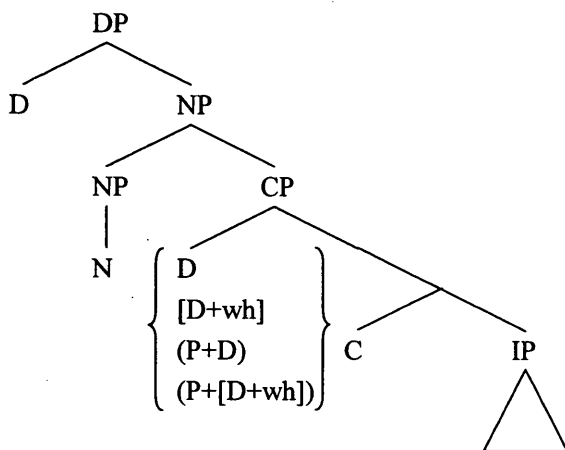
- (i) Mary put everything {\*which/that} he could in his pocket. (Carlson (1977: 525))

The impossibility of the occurrence of the overt relative pronouns in amount relatives shows that amount relatives also occupy the position which is under the CaseP, the locus of the specificity of the DP. However, the argument for the position of IRCs being under the CaseP does not straightforwardly mean that the position is under the other functional category. In this paper, I will not give a detailed account of this approach.



The structural relation between Type2 relatives and the head noun is illustrated as follows:

(58) Structural Position of Type2 relatives within Head DP



In the structure (58), the N does not c-command the relative pronoun, though D c-commands it. The structural position of Type2 relatives is higher than the head N because the NP in question does not dominate the relative clause CP (cf. Chomsky (1986: 8-9)). This indicates that a mutual c-command relation between the D and the relative clause is established and based on the claim that a specifier has a similar property to an adjunct as in Kayne's (1994) antisymmetric approach, a mutual c-command relation between the head D and the d-pronoun in [Spec,CP] of the relative clause is also established.

The licensing conditions on the null operator Op and the d-pronoun capture the generalization that the relative pronoun must be Op in (57), whereas it must be a d-pronoun in (58). Chomsky (1982) claims that the operator Op is semantically vacuous and the variable bound by the Op is, hence, assigned no range by the Op. But this violates the requirements at LF: no vacuous quantification is allowed. He proposes the principle barring vacuous operators which requires that each LF variable either be assigned a range by its operator or be assigned a value by an antecedent that A-binds it. Given this requirement, Op is allowed in the complement structure (57), in which Op is c-commanded by the head N, but not in the adjunction structure (58), in which Op cannot be c-commanded by the head N.

As for the licensing condition of the d-pronoun, the following can be postulated:

- (59) Relative d-pronouns must agree with the  $D^0$  of head noun DP in their gender and number.<sup>20</sup>

<sup>20</sup> The relative d-pronoun would also be licensed by the matrix V (or preposition) that c-commands the matrix D either. The phenomenon which is called categorial matching effect in relative construction provides supporting evidence.

The licensing condition on d(+wh)-pronouns is satisfied only in the adjunction structure (58), in which there is no intervening head blocking the required D-to-D agreement. If we can say that pure wh-pronouns (except for English wh-pronouns) are licensed only under prepositional phrases, the generalization that wh-pronouns cannot be bare will follow from the defective property of the null determiner of the wh-pronoun.<sup>21</sup>

These requirements on specification of the range of the relative operators can explain the distributional properties of the relative pronoun in the various relative clauses. Ops co-occur with Type1 relatives and d-pronouns or complex pronouns co-occur with Type2 relatives. Wh-pronouns occur elsewhere in pied-piping relatives. This property of wh-pronouns is due to the internal structure of (and agreement relation within) the wh-pronoun phrase (DP). The further research of the internal structure of each type of relative pronouns will be required.

## 6. Conclusion

In this paper, I have mainly considered the restriction on the occurrence of the relative pronouns from cross-linguistic and diachronic perspectives. First, based on pied-piping phenomena of the English, German, French, and Italian, I have made clear a distinction between two types of relative clauses. I have shown that the distinction between Type1 relatives and Type2 relatives correlate with the morphological property of the relative pronouns, wh-pronouns, complex pronouns, and d-pronouns. Next, I have argued that the peculiar property of modern English wh-pronouns derives from the historical change of relative pronouns in Middle English. Finally, I have claimed that there are two distinct structural positions for Type1 relatives and Type2 relatives within DP and have proposed the licensing conditions on three types of relative pronouns to explain their distribution.

## References

- Allen, Cynthia Louise (1977) *Topics in Diachronic English Syntax*, Doctoral dissertation, University of Massachusetts.
- Aoun, Joseph and Yen-hui Audrey Li (2003) *Essays on the Representational and Derivational Nature of Grammar: The Diversity of Wh-Constructions*, MIT Press, Cambridge, MA.
- Bianchi, Valentina (1999) *Consequences of Antisymmetry: Headed Relative Clauses*, Mouton de Gruyter, Berlin.
- Bianchi, Valentina. (2004) "Resumptive Relatives and LF Chain," *The Structure of CP and IP*, ed. by Luigi Rizzi, 76-114, Oxford University Press.

---

<sup>21</sup> The form of d+wh-pronouns, *lequel* or *il-quale*, indicates that wh-pronouns are not in the position of D<sup>0</sup> but in the position under D<sup>0</sup>.

- Browning, Marguerite (1987) *Null Operator Constructions*, Doctoral dissertation, MIT.
- Canac Marquis, Réjean (1996) "The Distribution of *à* and *de* in Tough Constructions in French," *Grammatical Theory and Romance Languages*, ed. by Karen Zagona, 35-46, John Benjamins, Amsterdam.
- Carlson, Greg (1977) "Amount Relatives," *Language* 53, 520-542.
- Curme, O. George (1952) *A grammar of the German Language 2<sup>nd</sup> rev. ed.*, Frederick Unger, New York
- Chomsky, Noam (1977) "On Wh-movement," *Formal Syntax*, ed. by Peter Culicover, Thomas Wasow, and Adrian Akmajian, 71-132, Academic Press, New York.
- Chomsky, Noam (1982) *Some Concepts and Consequences of the Theory of Government and Binding*, MIT Press, Cambridge, MA.
- Chomsky, Noam (1986) *Barriers*, MIT Press, Cambridge, MA.
- Chomsky, Noam (1995) *The Minimalist Program*, MIT Press, Cambridge, MA.
- Chomsky, Noam and Howard Lasnik (1977) "Filters and Control," *Linguistic Inquiry* 8, 425-504.
- Cinque, Guglielmo (1982) "On the Theory of Relative Clauses and Markedness," *The Linguistic Review* 1, 247-294.
- Cinque, Guglielmo (1990) *Types of A-bar Dependencies*, MIT Press, Cambridge, MA.
- Enç, Mürvet (1991) "The Semantics of Specificity," *Linguistic Inquiry* 22, 1-25.
- Grosu, Alexander (1988) "On the Distribution of Genitive Phrases in Romanian," *Linguistics* 26, 931-949.
- Hoop, Helen de (1992) *Case Configuration and Noun Phrase Interpretation*, Doctoral dissertation, University of Groningen.
- Ishii, Yasuo (1985) "I have a topic on which to work," *Eigo Kyoiku* 34.5, 72-74.
- Jones, Charles (1991) *Purpose Clause: Syntax, Thematics, and Semantics of English Purpose Constructions*, Kluwer, Dordrecht.
- Kayne, Richard (1984) *Connectedness and Binary Branching*, Foris, Dordrecht.
- Kayne, Richard (1994) *The Antisymmetry of Syntax*, Cambridge, MA: MIT Press.
- Lasnik, Howard and Juan Uriagereka (1988) *A Course in GB Syntax: Lectures on Binding and Empty Categories*, Cambridge, MA: MIT Press.
- Law, Paul (2000) "On Relative Clauses and the DP/PP Adjunction Asymmetry," *The Syntax of Relative Clauses*, ed. by Artemis Alexiadou, André Meinunger, Chris Wilder, and Paul Law, 161-200, John Benjamins, Amsterdam.
- Lee, Felicia (2001) "Relative Clauses without Wh-movement," *North-Eastern Linguistic Society* 31, 321-332.
- Los, Bettelou (2005) *The Rise of the To-Infinitive*, Oxford University Press.
- McCawley, James (1988) *The Syntactic Phenomena of English*, vol.2, University of Chicago Press.

- Maiden, Martin and Cecilia Robustelli (2000) *A New Reference Grammar of Modern Italian*, Arnold, London.
- Nagahara, Yukio (1990) *Kankeisestu*, Taishukan, Tokyo.
- Nakao, Toshio (1972) *Eigoshi II*, Taishukan, Tokyo.
- Nanni, Debbie and Justine Stillings (1978) "Three Remarks on the Pied Piping," *Linguistic Inquiry* 9, 310-318.
- Ono, Shigeru and Toshio Nakao (1980) *Eigoshi I*, Taishukan, Tokyo.
- Riemsdijk, Henk van (1984) "On Pied-Piped Infinitives in German Relative Clauses," *Studies in German Grammar*, ed. by Jindřich Toman, 165-192, Foris, Dordrecht.
- Ritter, Elizabeth (1991) "Two Functional Categories in Noun Phrases: Evidence from Modern Hebrew," *Perspectives on phrase structure: heads and licensing*, Syntax and Semantics 25, ed. by Susan Rothstein, 37-62, Academic Press, New York.
- Vergnaud, Jean-Roger (1974) *French Relative Clauses*. Doctoral dissertation, MIT.
- Vries, Mark de (2002) *The Syntax of Relativization*, Doctoral dissertation, University of Amsterdam.
- Vries, Mark de (2006) "Possessive Relatives and (Heavy) Pied-Piping," *Journal of Comparative Germanic Linguistics* 9, 1-52.
- Watanabe, Akira (2002) "Indeterminates and Agreeing D," *Proceedings of the 4th Asian GLOW in Seoul*, 405-429.