Towards a Syntax of Two Types of Relative Clauses

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Abstract

This paper considers the syntax of relative clauses in Germanic and Romance languages within the framework of Chomsky's (1993, 1995) Minimalist Program. Previous analyses of the syntax of the relative clauses have focused mainly on the reconstruction effects and considered the structure and derivation of relative constructions. Main approaches are concerned either (i) with Matching hypothesis together with Adjunction structure, or (ii) with Head-raising hypothesis with Complementation structure. Kayne (1994) and Bianchi (1999) argue that the reconstruction effects follow directly from Head-raising relative clauses since the head noun phrase starts out in the relative clause internal position. On the other hand, Sauerland (1998), Safir (1999) and Salzmann (2006) argue that the reconstruction effects are accounted for with a postulation of the relative clause-internal head noun phrase to be deleted at PF with Matching hypothesis. A third approach is a hybrid analysis presented by Aoun and Li (2003) and Szczegielniak (2004), who point out that that-relatives and wh-relatives differ in the availability of reconstruction and claim that Head-raising relative clauses for that-relatives and Matching relative clauses for wh-relatives are both necessary. Aoun and Li (2003) and Szczegielniak (2004) differ with regard to whether both adjunction structure and complementation structure are necessary in a particular language.

In this paper, I attempt to argue that there is a correlation between the property of relative clauses (i.e., the reconstruction effects, heavy pied-piping, etc.) and the type of the relativizer employed in Germanic and Romance language. I will present a new modified hybrid analysis -- Head-raising and Matching -- which will provide a principled explanation with the correlation between the type of the relativizer and the properties of relative clauses. Furthermore, I will propose that whether the relative clause derives via Head-raising or Matching is in fact determined by the property of the type of the relativizer, concerning with the difference between internal structures of the three types of relative pronouns. In sum, once the type of the relative pronoun is determined in the language, how to derive the relative clause is automatically determined and the relative clause in that language shows (or does not show) various properties, such as heavy pied-piping and reconstruction.

Keywords: Relative Clause, Types of Relativizer, Matching, Head-raising, Heavy pied-piping, Reconstruction effects

1.   Introduction

1.1.   Relative Constructions

The English relative construction as illustrated in (1) is an example of a typical relative configuration in Germanic and Romance languages.[1]

(1)   [the boy]   [{that/who(m)} you saw *e*]
            head noun phrase   relative clause

A relative construction consists of two parts: a subordinate clause and some expression whose reference is modified by this subordinate clause. The subordinate clause is called a relative clause and the expression modified by the relative clause is called a head noun phrase of the relative construction. There is a gap *e* inside the relative

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[1] There are many other strategies for relativization, which are not covered by the configuration (1). Some languages, for instance, may have the head noun phrase internal to the relative clause or may have the head noun phrase to the right of the relative clause. However, none of the Germanic and Romance languages utilize the strategies outside the configuration (1).

clause, which is relativized, and the gap is coreferential with the head noun phrase. There is a relative clause marker in the left-peripheral position of the relative clause in Germanic and Romance languages. The coreference relation between the relative gap and the head noun phrase is mediated by this marker, which is called a "relativizer" (Smits (1989)). Relativizers come in two types: a relative particle such as *that*, and a relative pronoun such as *who*, as exemplified in the English relative construction (1).[2] In the relative clause, there also appears a pied-piped phrase containing a relativizer. In addition, the occurrence of these relativizers is sometimes optional in these languages.[3] The examples of these cases in English are illustrated below.

(2)   a.   [the boy]   [*with **whom** you are talking e*]

       b.   [the boy]   [∅   you saw *e*]

1.1.1. Relativizers

In the following sections, we briefly look at the examples of the relativizers in English, French, Italian, Norwegian, and German.[4] The relative particles and relative pronouns in these languages show different syntactic properties.

1.1.1.1. Relative Particles

Relative particles are relativizers that are taken from complementizers and prepositions. Relative particles can be distinguished from relative pronouns by their morphological identity: the former makes use of a complementizer or preposition, depending on the language. Some examples are shown in (3).[5]

(3)   a.   The man ***that*** you saw is her uncle.   *(English)*

       a'.   I think *that* he will come.

       b.   Le garçon ***que*** tu as invite est arrivé.   *(French)*

            the boy that you have invited has arrived

            'The boy that you have invited has arrived.'   (Cinque (1982: 276-277))

       b'.   Tu me dis *que* tu vois ta mere.

            'You said to me that you see your mother.'

       c.   L'uomo ***che*** vedu è suo zio.   *(Italian)*

            the-man that you-see is her uncle

            'The man *that* you see is her uncle.'   (Cinque (1982: 248-249))

       c'.   Penso *che* lui venga.

            'I think that he will come.'

       d.   Mannen ***som*** du ser der borte, må komme fra Sverige.   *(Norwegian)*

            the-man that you see over there must come from Sweden

            'The man that you see over there must come from Sweden.'   (Taraldsen (1978: 624))

       d'.   … står for meg *som* vakrereennnoen kvinne.

            '… strikes me as more beautiful than any woman.'

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[2] To put it more precisely, there is another type of relativizer, which is the relative adverb. We will not discuss this type of relativizer in this paper.

[3] Relativizers are not available in languages like Japanese.

[4] Although slight variations are observed in Scandinavian languages (i.e., between Norwegian and Swedish), we will look at only the Norwegian relative clause for the sake of a simplified discussion. As for Germanic languages, Dutch is said to be another representative language. Refer to footnote 9 for those in Dutch.

[5] In Norwegian, *som* is used as a complementizer for introducing comparatives, like English *as*.

e.   * Ich fand ein Buch, ***dass*** ich lessen soll.   *(German)*
     I found a book that I read should
     'I found a book that I should read.'

e'.   Ich denke, dass er kommt.
      'I think that he will come.'

German does not have relative particles. As shown in (3e) and (3e'), the complementizer of the embedded finite clause *dass* cannot be used as a relative particle in German. Relative particles can be also distinguished from relative pronouns by their syntactic behavior. When the object of a preposition is relativized, with the whole PP pied-piped, relative particles cannot be the relativizer, as illustrated below.

(4)   a.   * I found a topic *on **that*** I should work.   *(English)*
      b.   * Le garçon *à **que*** tu as parlé est mon frère.   *(French)*
           'The boy to whom you have talked is my brother.'   (Cinque (1982: 276-277))
      c.   * L'uomo *a **che*** parlavi è cieco.   *(Italian)*
           'The man to whom you were speaking is blind.'   (Cinque (1982: 248-249))
      d.   * Mannen *om **som*** du snakker, ser nervøs ut.   *(Norwegian)*
           'The man about whom you are talking looks nervous.'   (Taraldsen (1978: 625))

In languages like English and Norwegian, which allow the preposition to be stranded, the object of the preposition is relativized without pied-piping of the whole PP as shown in (5).

(5)   a.   I found a topic ***that*** I should work on.   *(English)*
      b.   Mannen ***som*** du snakker om, ser nervøs ut.   *(Norwegian)*
           'The man that you are talking about looks nervous.'   (Taraldsen (1978: 625))

1.1.1.2.   Relative Pronouns: Wh-pronouns, D-pronouns, and Complex Pronouns

The forms of the relative pronouns in Germanic and Romance languages are morphologically identical with the other paradigms in the language. For instance, the form of the relative pronoun *who* in English is borrowed from the wh-pronoun of the interrogative sentence. The relative pronouns are further divided into three types: wh-pronouns from interrogatives, d-pronouns from demonstratives or definite articles, and complex pronouns, which consist of the d-pronoun and the wh-pronoun. In Germanic and Romance languages, one or two of the three types of these relative pronouns is/are employed as relative pronouns.

English employs wh-pronouns *who/which*, relativizing the subject, the object and the prepositional object as shown in (6a)-(6c) respectively. Unlike the case of relative particles, the wh-pronouns can be part of the pied-piped phrase as shown in (6c).

(6)   a.   The man ***who*** stands at the corner is his uncle.   *(English)*
      b.   I found a book ***which*** you should read.
      c.   I found a topic *on **which*** you should work.

French, Italian, and Norwegian also employ wh-pronouns when the relative gap is the object of the preposition.[6] Except for the Italian relative pronoun *cui*, the forms of all these relative pronouns are borrowed from the interrogative paradigm. But Smits (1989) claims that the relative pronoun *cui* is not an exception because it is also

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[6] The example in (7c) is not much used outside fairly formal register, but speakers of "Riskmål" still have relatively clear intuitions about aspects of the construction that will prove relevant for the present discussion.

derived from the Latin interrogative *cuius*.

(7)   a   Le garçon *à **qui*** tu as parlé est mon frère.   *(French)*
            'The boy with whom you have talked is my brother.'   (Cinque (1982: 276-277))
    b   L'uomo *a **cui*** parlavi è cieco.   *(Italian)*
            'The man to whom you were speaking is blind.'   (Cinque (1982: 248-249))
    c   Mannen *om **hvilken***/?***hvem*** du snakker, ser nervøs ut.   *(Norwegian)*
            'The man about whom you are talking looks nervous'   (Taraldsen (1978: 629))

Unlike the case of English, pied-piping of the preposition is not only possible but is obligatory in these three languages as illustrated below.

(8)   a.   I found a topic **which** you should work *on*.   *(English)*
    b.   * Le garçon **qui** tu as parlé *à* est mon frère.   *(French)* (Cinque (1982: 276-277))
    c.   * L'uomo **cui** parlavi *a* è cieco.   *(Italian)* (Cinque (1982: 248-249))
    d.   * Mannen **hvilken**/?**hvem** du snakker *om*, ser nervøs ut.   *(Norwegian)* (Taraldsen (1978: 629))

In other words, these wh-pronouns cannot be "bare," that is, without pied-piped constituents, in these languages. Notice that English wh-pronoun, on the other hand, can be bare as illustrated in (6). Henceforth let us call an overt relative pronoun without a pied-piped element a "bare relative pronoun."

    German employs a d-pronoun. This type is borrowed from the paradigm of demonstratives or definite articles in German.[7,8] Furthermore, the d-pronoun can be bare and is used when the relative gap is the subject and the object as shown in the examples in (9a) and (9b) below. Furthermore, the d-pronouns can also be part of the pied-piped phrase as shown in (9c).

(9)   a.   Der Mann, ***der*** dort steht, ist mein Vater.   *(German)*
            the man who there stand is my father
            'The man who is standing there is my father.'
    b.   Ich fand ein Buch, ***das*** ich lessen soll.
            I found a book which I read should
            'I found a book I should read.'
    c.   Der Mann, ***mit dem*** ich gesprochen habe, ist mein Freund.
            the man with whom I spoken have is my friend
            'The man I have talked with is my friend.'
    d.   * Der Mann, ***dem*** ich ***mit*** gesprochen habe, ist mein Freund.
            the man with whom I spoken have is my friend
            'The man I have talked with is my friend.'

Pied-piping of the preposition is also obligatory in German as shown in the example (9d). These d-pronouns show nominal case and agreement in number and gender with the head noun.

    French and Italian also employ the other type of relativizer, a complex pronoun. This class includes *lequel* in French and *il-quale* in Italian. The complex pronouns can also be part of the pied-piped constituents as illustrated in (10).

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[7] Here I do not consider another relative pronoun *welcher*, which is rarely used in modern German.
[8] German uses wh-pronouns in headless relative clauses, where d-pronouns are not allowed.

(10) a. Le garçon **auquel** tu as parlé est mon frère. *(French)*
   'The boy with whom you have talked is my brother.' (Cinque (1982: 276-277))
   b. L'uomo **al quale** parlavi è cieco. *(Italian)*
   'The man whom you were speaking to is blind.' (Cinque (1982: 248-249))

Pied-piping is obligatory in French and Italian even if the complex pronouns are used as a relativizer.

(11) a. (*) Le garçon **lequel** tu as parlé *à* est mon frère. *(French)*
   'The boy whom you have talked with is my brother.' (Cinque (1982: 276-277))
   b. * L'uomo **il quale** parlavi *a* è cieco. *(Italian)*
   'The man to whom you were speaking is blind.' (Cinque (1982: 248-249))

It is worth noting that, in non-restrictive relative clauses, the complex pronouns can be bare and are allowed to relativize the subject and the object.

(12) a. Ma soeur, **laquelle** le magistrat avait concoquée pour le lendem ain…, *(French)*
   'My sister, who the magistrate had summoned for the next day, …' (Cinque (1982: 276-277))
   b. ? Giorgio, **il quale** stimi, l'ha fatto. *(Italian)*
   'Giorgio, that you esteem, has done it.' (Cinque (1982: 248-249))

We have so far seen that there are relative particles and three types of relative pronouns in Germanic and Romance languages, namely wh-pronouns, d-pronouns, and complex pronouns. Relative particles behave like other complementizers or prepositions, and relative pronouns behave like other pronouns. The relative particles are indeclinable and the relative pronouns are inflected for such features as number, gender, and sometimes animacy, in much the same way as other pronouns of the language do. Furthermore, the relative particles can never be part of a pied-piped phrase while the relative pronouns can be accompanied by some constituents in the case of pied-piping.[9]

1.1.1.3.   Doubly Filled COMP Filter in Relative Constructions

In the previous analysis, both the complementizer and the relative pronoun are considered to be dominated by the node COMP, which is the daughter of S'. In English, the relative pronoun and the relative particle cannot co-occur as shown in (13c).

(13) a. the boy **that** I saw *(English)*
   b. the boy **whom** I saw
   c. * the boy **whom that** I saw

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[9] Dutch is said to be another language that uses a d-pronoun as a relative pronoun. de Vries (2002, 2006a) 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* only occurs with the pied-piped preposition as exemplified above. On the other hand, *die* can be bare as in (ia). These observations are not incompatible with what is expected so far. However, the fact that *die* cannot occur with the pied-piped preposition, as shown in (ib), contradicts the prediction, since every type of relative pronoun is 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^0. In this paper, however, I will not elaborate on Dutch relatives. For a detailed discussion of Dutch relatives, see de Vries (2002, 2006a).

This restriction is also observed in French, Italian and Norwegian. In these languages, wh-pronouns and relative particles cannot co-occur.[10]

(14) a. * Le garçon *à **qui** **que*** tu as parlé est mon frère.   *(French)*
      b. * Le garçon ***auquel** **que*** tu as parlé est mon frère.
      c. * L'uomo *a **cui** che* parlavi è cieco.   *(Italian)*
      d. * L'uomo ***al quale** che* parlavi è cieco.
      e. * Mannen *om **hvilken**/*?**hvem** som* du snakker, ser nervøs ut.   *(Norwegian)*

This restriction in the relative construction is formulated as Doubly Filled COMP Filter by Chomsky and Lasnik (1977: 446). Given the CP analysis, the so-called Doubly Filled COMP Filter can be restated as (15).

(15)   When a relative pronoun occupies the Spec of CP, the head of that CP must not dominate a relative particle.

The relative particle, whose form is borrowed from a complementizer, occupies C^0 of the relative clause and the relative pronoun occupies the Spec of CP of that relative clause.[11]

With the filter (15), the empty C^0 in English (16a) and in Norwegian (16b) is allowed when the gap in the relative clause is an object. However, in French, Italian, and German, the empty C^0 is not allowed as illustrated below.

(16) a. He is the man (***that***) I saw yesterday.   *(English)*
      b. Mannen (***som***) du ser der borte, må komme fra Sverige.   *(Norwegian)*
      c. Le garcon *(***que***) tu as invite est arrivé.   *(French)*
      d. L'uomo *(***che***) vedu è suo zio.   *(Italian)*
      e. Ich fand ein Buch, *(***das***) ich lessen soll.   *(German)*

The examples in (16c)-(16d) are ruled out by the "Empty COMP Filter" in Hirschbühler and Rivero (1981). This filter requires at least one element in COMP. In these three languages, a relative particle must occupy the head of CP when the relative clause lacks a relative pronoun. The Empty COMP Filter can be restated as (17).

(17)   When a relative pronoun does not occupy the Spec of CP, the head of that CP must dominate a relative particle.

One filter blocks an empty COMP, and another blocks a doubly-filled COMP.

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[10] German does not have a relative particle as we have observed above.

[11] Note that this filter is construction-specific and language-specific. For instance, the wh-pronoun and complementizer can co-occur in Norwegian embedded subject question as shown in (i), whereas they cannot co-occur in the embedded question in (General American) English as shown in (ii). In addition, the filter does not apply to some English dialects such as Belfast and Hiberno-English as exemplified in (iii) as well as in Middle English in (iv).

(i)   Dei visste ikkje *kven som* kom.
       'They did not know who came.'   (Askedal (1994: 264))
(ii)   *They did not know who that came.
(iii) I wonder which dish that they picked.   (Henry (1995: 107))
(iv)   men shal wel knowe who that I am.
       'On shall well know who I am.'   ((Caxton (1485)): (Haegeman (1994: 383)))

1.2.   Issues and Organization

This paper considers the syntax of relative clauses in Germanic and Romance languages within the framework of Chomsky's (1993, 1995) Minimalist Program.[12] I attempt to argue that there is a correlation between the type of the relativizer employed and the properties of the relative clauses in Germanic and Romance languages. I will consider how these properties are derived, by presenting a new hybrid analysis -- Head-raising or Matching -- which will provide a principled explanation of the correlation between the type of the relativizer and the properties of the relative clauses. Furthermore, concerning with the difference between the internal structures of the three types of relative pronouns, I will propose that what determines the derivation and structure of the relative clauses -- Head-raising or Matching -- is in fact the relativizer employed in Germanic and Romance languages.

In section 2, we will discuss the two restrictions of the relative construction: (i) the restriction on the occurrence of bare relative pronouns in Germanic and Romance languages, and (ii) the restriction on pied-piping in these languages. First, we will present a detailed observation about the occurrence of bare relative pronouns and pied-piping. Then, we will look at the analysis of Cinque (1982), who examines Romance relative clauses from a cross-linguistic viewpoint and discusses some general restrictions on the occurrence of relative pronouns and pied-piping.

In section 3, I will first look at another property of the relative clause: (iii) language-internal and cross-linguistic variations with respect to the reconstruction effects in Germanic and Romance languages. Then, I will examine the two previous hybrid analyses of the relative clause. First, I will take up Aoun and Li's (2003) analysis of two types of relative clauses in English. Second, I will look at Szczegielniak's (2004) analysis of two types of relative clauses in Polish and Russian. Finally, I will consider Safir (1999) and Sauerland's (1998) analysis that can explain the reconstruction effects in the Matching relative clauses.

In section 4, I will investigate the structure and derivation of the relative clauses in Germanic and Romance languages, to explain the properties (i)-(iii) uniformly. I will also consider the internal structure of the three types of the relative pronoun with the modified hybrid analysis presented in section 3, to answer the question how the three properties of the relative clauses are derived. Finally, in section 5, I will conclude this paper and discuss the remaining problems.

2.   Bare Relative Pronouns and Size of Pied-Piping

Section 2 considers two restrictions in the relative constructions in Germanic and Romance languages. First, we look at the restrictions on the occurrence of relative pronouns. Second, we consider the restrictions on the size of pied-piping. Then, we review Cinque's (1982) proposal and discuss the problems of Cinque's analysis of the types of relative clauses. Finally, I point out that the relative clauses in Germanic and Romance languages are distinguished into two types.

2.1.   Restriction on the Occurrence of Bare Relative Pronouns

Relative clauses in French, Italian, and Norwegian have a syntactic property that is not observed in English relative clauses, that is, wh-pronouns cannot appear unless they are accompanied by a pied-piped element as shown below (18)-(20).

(18)   a.   Le garçon *que* tu as invité est arrivé.   *(French)*
                'The boy that you have invited has arrived.'

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[12] We will not consider non-restrictive relative clauses in these languages in detail except for the case relevant to the main argument. My main concern of this paper is to investigate the syntax of the restrictive relative clauses.

b.   * Le garçon *qui* tu as invité est arrivé.
    'The boy who you have invited has arrived.'

c.   Le garçon *à qui* tu as parlé est mon frère.
    'The boy to whom you have talked is my brother.'   (Cinque (1982: 276-277))

(19) a.   L'uomo *che* vedu è suo zio.   *(Italian)*
    'The man that you see is her uncle.'

b.   * L'uomo *cui* vedu è suo zio.
    'The man whom you see is her uncle.'

c.   L'uomo *a cui* parlavi è cieco.
    'The man to whom you were speaking is blind.'   (Cinque (1982: 248-249))

(20) a.   Mannen *som* du ser der borte, må komme fra Sverige.   *(Norwegian)*
    the man that you see over there must come from Sweden

b.   * Mannen *hvilken*/*hvem* du ser borte, må komme fra Sverige.
    the man whom you see over there must come from Sweden

c.   Mannen *om hvilken*/*?hvem* du snakker, ser nervøs ut.
    the man about whom you are talking looks nervous   (Taraldsen (1978))

As shown in (18b), (19b), and (20b), these wh-pronouns cannot be bare. French and Italian have another type of relative pronoun, which we refer to as a complex pronoun. The restriction that appears to apply to the relative clauses with wh-pronouns is also observed to hold in the relative clauses with complex pronouns.

(21) a.   Le garçon *que* tu as invité est arrivé.   *(French)*
    'The boy that you have invited has arrived.'

b.   (*) Le garçon *lequel* tu as invité est arrivé.
    'The boy who you have invited has arrived.'

c.   Le garçon *auquel* tu as parlé est mon frère.   (Cinque (1982: 276-277))
    'The boy to whom you have talked is my brother.'

(22) a.   L'uomo *che* vedu è suo zio.   *(Italian)*
    'The man that you see is her uncle.'

b.   * L'uomo *il-quale* vedu è suo zio.
    'The man whom you see is her uncle.'

c.   L'uomo *al quale* parlavi è cieco.
    'The man to whom you were speaking is blind.'   (Cinque (1982: 248-249))

Though the situation for French *lequel* is not of the clear-cut type found with *cui* and *qui,* none of these relative pronouns can appear without pied-piping in French, Italian, and Norwegian.

Suppose that both the bare relative pronoun and non-bare relative pronoun (i.e., pied-piped relative pronoun) occupy the Spec of CP in the above examples. Then, we can state the restriction above as illustrated in (23).

(23)   A bare relative pronoun is not allowed in a Spec of CP.

However, we have already observed counterexamples to this too general restriction. In English, for instance, there is no restriction on the occurrence of bare relative pronouns as we can see in (24).

(24) a.   John found a topic *which* you should work on.
    b.   John found a topic *on which* you should work.

In (24), the bare wh-pronoun *which* is available as well as the wh-pronoun accompanied by a pied-piped

preposition. In addition, the restriction does not hold as well in the Romance non-restrictive relative clauses with complex pronouns:

(25) a. Ma soeur, {*qui* / *qui / **laquelle**} est arrivée justement hier…,   *(French)*
      '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, {*à qui* / *à laquelle*} tu as parlé hier…
      'My sister, to whom you have talked yesterday…'   (Cinque (1982: 276-277))

(26) a. Giorgio, {*che* / *cui / **il quale**} ti vuole, è là.   *(Italian)*
      'Giorgio, who wants you, is there.'

   b. Giorgio, {*che* / *cui / ?**il quale**} stimi, l'ha fatto.
      'Giorgio, whom you esteem, has done it.'

   c. Giorgio, {*a cui* / *al quale*} tieni, ti odia.
      'Giorgio, (of) whom you are fond of, hates you.'   (Cinque (1982: 249))

Contra (23), bare complex pronouns are allowed to occur in these non-restrictive relative clauses.

   Based on the observations above, we find two types of relative clauses: the relative clause in which the restriction (23) holds and the relative clause in which it does not. Furthermore, the distinction between these two types of relative clauses is independent of the distinction between restrictive and non-restrictive relatives. Henceforth, relative clauses in which the restriction (23) holds will be referred to as Type1 and those in which the restriction (23) does not hold as Type2.

   Relative clauses in German, which use d-pronouns as a relative pronoun, show the property of Type2 as shown in the example (27).

(27) a. Der Mann, {*dass / **der**}dort steht, ist mein Vater.   *(German)*
      the man who there stand is my father
      'The man who is standing there is my father.'

   b. Ich fand ein Buch, {*dass / **das**}ich lessen soll.
      I found a book which I read should
      'I found a book I should read.'

   c. Der Mann, ***mit dem*** ich gesprochen habe, ist mein Freund.
      the man with whom I spoken have is my friend
      'The man I have talked with is my friend.'

German relative clauses allow the occurrence of bare relative pronouns and do not allow the relative particle. Next we will observe the restriction on pied-piping in these languages.

2.2. *Minimal vs. Heavy Pied-Piping*

   In Type1 relative clauses, we observe that relative pronouns cannot be bare and must be accompanied by some pied-piped elements. In Type2 relative clauses, relative pronouns can be bare or sometimes accompanied by pied-piped elements. In this section, we consider the size of a constituent which is pied-piped with a relative pronoun in Germanic and Romance relative constructions, and show that clear differences are observed with respect to the possibility of pied-piping between Type1 and Type2.

   As shown in the examples in (28), Ross (1967), Nanni and Stillings (1978), and Horvath (2006) observe the various types of pied-piping in English, though the possible size of a pied-piped element is limited.

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

b. He is the man [***whose father*** I know].

c. I don't know the man [***to whose father*** you spoke yesterday].

d. Reports [***the covers of which*** the government prescribes the height of the lettering on] almost always put me to sleep.

e. This is the kind of woman [***proud of whom*** I could never be].

f. Indeed, Antony is the model man [***compared to whom*** both Mellersh and Frederick are somewhat swinish inferiors] …   (Nanni and Stillings (1978), Horvath (2006))

g. The elegant parties, [***to be admitted to one of which*** was a privilege], had usually been held at Delmonico's.

h. * The elegant parties, [***for us to be admitted to one of which*** was a privilege], had usually been held at Delmonico's.

i. * They bought a car, [***(the idea) that their son might drive which*** was a surprise to them].

(Nanni and Stillings (1978))

The relative pronoun cannot be accompanied by a pied-piped infinitival clause with the overt subject *for us* as shown in (28h), nor accompanied by a pied-piped finite clause as shown in (28i). Nevertheless, pied-piping of smaller constituents than TP is grammatical, as illustrated in (28a)-(28g). Note that heavy pied-piping of a relative pronoun contained in a DP of DP (28d), AP (28e), and VP or a deverbal adjective phrase (28f) is grammatical even in the restrictive relative clause.

In contrast to pied-piping in English relative clauses, which are Type2 relative clauses, pied-piping in French, Italian and Norwegian relative clauses with wh-pronouns, which are Type1 relative clauses, is strongly restricted. In French and Italian relative clauses with wh-pronouns, only minimal pied-piping is allowed as shown in (29) and (30).[13]

(29) a. L'uomo [***a cui*** parlavi] è cieco.   *(Italian)*
   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   (Cinque (1982: 248-249))

(30) a. Le garçon [***à qui*** tu as parlé] est mon frère.   *(French)*
   'The boy to whom you have talked is my brother.'

b. * Le politician [***aux discourse contre qui*** nous sommes habitués] …
   'The politician to the discourses against whom we are accustomed …'

c. * Le garçon [***pour parler à qui*** nous sommes allés chez toi] …
   'The boy to speak to whom we went to your place …'   (Cinque (1982: 276-277))

Except for minimal pied-piping, all cases of heavy pied-piping which are allowed in English are unacceptable in French and Italian. In Norwegian relative clauses, pied-piping is possible with wh-pronouns. Smits (1989) claims that, besides being marked, pied-piping is restricted to two cases illustrated below.

(31) a. % jeg hjalp en dame [***hvis datter*** vi traff på fjellet].   *(Norwegian)*
   I helped a lady whose daughter we met on the mountain.

---

[13] French and Italian lack the genitive wh-pronoun (i.e., *whose* in English).

b. % Mannen, [**om hvilken** du snakker], ser nervøs ut.
     the man about whom you are talking looks nervous   (Smits (1989: 392))

The examples in (31) indicate that, in Norwegian, the size of pied-piping is also strongly restricted. Unlike the cases in English, wh-pronouns in a heavy phrase in French, Italian, and Norwegian are not allowed to be pied-piped, for instance, a large noun phrase, *the daughter of whom*.[14] The observations above lead us to the generalization (32).

(32) a. In Type1 relative clauses, only minimal pied-piping is possible.
      b. In Type2 relative clauses, both minimal and heavy pied-piping is possible.

In restrictive relative clauses in Romance languages, the same restriction is observed when a wh-pronoun is replaced by a complex pronoun, as shown in (33)-(34).[15]

(33) a. L'uomo [**al quale** parlavi] è cieco.   *(Italian)*
          the-man with whom you-were-speaking is blind
      b. * L'uomo [**la figlia del quale** fuma] è generalmente contrario.
          the-man the daughter of whom smokes is generally against-it
      c. * L'uomo [**alla figlia del quale** hai scritto] è in collera.
          the-man to-the daughter of whom you-have written is in anger
      d. * L'uomo [**fuggire del quale** non osava] è morto.
          the-man to-fly from whom not he-dared has died   (Cinque (1982: 248-249))
(34) a. Le garçon [**auquel** tu as parlé] est mon frère.   *(French)*
          'The boy to whom you have talked is my brother.'
      b. (*) Le politician [**aux discourse contre lequel** nous sommes habitués] …
          'The politician to the discourses against whom we are accustomed …'
      c. (*) Le garçon [**pour parler auquel** nous sommes allés chez toi] …
          'The boy to speak to whom we went to your place …'   (Cinque (1982: 276-277))

On the other hand, non-restrictive relative clauses with complex pronouns, as shown in (35)-(36), allow heavy pied-piping as expected. Romance relative clauses with complex pronouns behave like Type2 relative clauses, when they are non-restrictive.

(35) a. Giorgio, [**al quale** tieni], ti odia.   *(Italian)*
          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   (Cinque (1982: 248-249))

---

[14] The distinction between minimal and heavy pied-piping can be reduced to the general distinction based on Grimshaw's (1991) Extended Projection. We will discuss the distinction between minimal and heavy pied-piping in detail in section 4.
[15] Again, *lequel* does not show the clear-cut pattern found with *cui* and *qui*, but the situation is partially in accord with the Romance non-restrictive relative clauses with complex pronouns, English relative clauses, and German relative clauses. Here I assume that *lequel*, which is a complex pronoun including the determiner *le-* and has rich agreement with the head noun, can easily be taken as a Type2 relativizer.

(36) a.   Ma soeur, [*à laquelle* tu as parlé hier], …   *(French)*
            'My sister, to whom you have talked yesterday, …'
      b.   Ma soeur, [*aux discourse contre laquelle* nous sommes habitués], …
            'My sister, to the discourses against whom we are accustomed, …'
      c.   Ma soeur, [*pour voir laquelle* vous êtes allés chez moi], …
            'My sister, to see whom you have gone to my place, …'   (Cinque (1982: 276-277))

German relative clauses, which are Type2 relative clauses, also allow almost all the possibilities of heavy pied-piping of the larger constituents as shown below.

(37) a.   Der Mann, [*mit dem* ich gesprochen habe], ist mein Freund.   *(German)*
            the man with whom I spoken have is my friend
            'The man I have talked with is my friend.'
      b.   Das ist der Mann, [*dessen* Vater ich kenne].
            that is the man whose father I know
            'That is the man whose father know.'
      c.   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.'
      d. * Das is 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.'
      e.   Die Lotte ist ein Mädchen, [*mit dem 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.'
                                                                          (Riemsdijk (1984: 168-169))

These examples show that in German relative clauses heavy pied-piping is also available unless it contains the pied-piping of the larger DP like *the friend of whom* as shown in the example (37c).[16]

The descriptive generalizations in (23) and (32), which need a principled explanation, capture the differences between Type1 and Type2 relative clauses. Several questions arise concerning these descriptive generalizations. Why are bare relative pronouns not allowed in the Type1 relative clauses in Germanic and Romance languages? Why is heavy pied-piping not allowed in the Type1 relative clauses? What kinds of general principles can account for the differences between the Type1 and Type2 relative clauses?

2.3.   Previous Analysis: Cinque (1982)

Cinque (1982) first observes the restriction on the occurrence of the bare relative pronoun and heavy pied-piping in Romance, and claims that there are two types of structures for relative clauses. Languages differ as to which type of structure in (38) is available to what kind of relative clause, and which type of structure is unmarked or marked (Cinque (1982: 250, 260)).

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

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[16] We will consider the question why pied-piping of *DP of DP* is 'unexpectedly' ungrammatical in German in section 4.

He claims that, for relative clauses with wh-pronouns and complex pronouns in Romance, the structure (38a) is available and is unmarked. For Romance non-restrictive relative clauses with complex pronouns, the structure (38b) is also available but it is marked.

The important point to note in Cinque's (1982) approach is that the relative pronoun in the structure (38a) must delete when it is non-distinct from the head noun of the relative clause. In his analysis, the obligatory deletion with the requirement on deletion (39) has been proposed to regulate the non-occurrence of bare relative pronouns in the structure (38a).

(39)   A Category β counts as recoverable (hence deletes) iff
        (i)   it is non-distinct from a category γ (the controller); and
        (ii)   it is c-commanded by the controller.

With the condition on obligatory deletion above, Romance relative clauses, whose unmarked structure is (38a), delete a bare relative pronoun obligatorily, while the relative pronoun with a pied-piped preposition, which is not non-distinct from the head noun, cannot be deleted.

However, this condition of obligatory deletion does not explain the optional deletion of the complex pronoun in Romance non-restrictive relatives. For instance, Cinque's assumption discussed so far appears to make an obviously false prediction about the paradigm of the complex pronoun *il-quale* and the relative particle *che* in Italian non-restrictive relative clauses. As we have observed above, the paradigm of the complex pronoun *il-quale* in non-restrictive relative clauses differs from the restrictive paradigm of *il-quale*, and from the restrictive/non-restrictive paradigm of the wh-pronoun *cui*. The examples are repeated in (40).

(40)   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))

In (40), the subject and object is relativized by both the bare relative pronoun *il-quale* and the relative particle *che*.

Cinque argues that the paradigm (40) is "not a coherent or genuine paradigm, but is rather the conflation of two quite distinct paradigms (p.259)." He claims that bare relative pronouns like *il-quale* in (40) do not belong properly to the paradigm but rather form a separate paradigm. The result of dissociating the non-restrictive relative clauses with bare relative pronouns in (40) from those with relative particles and deleted relative pronouns in (40) is represented by the following two paradigms (41) and (42).

(41)   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.'
(42)   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 (1982: 259))

Cinque argues that the Italian non-restrictive relative clauses can have the marked structure (38b) as well as the

unmarked structure (38a). The relative clauses in the paradigm (42) have the marked structure (38b), where the relative pronoun cannot be deleted, while the relative clauses in the paradigm (41) have the structure (38a), where the relative pronoun is deleted obligatorily. The same pattern is observed in French non-restrictive relative clauses with complex pronouns. The consequence of this "dual analysis" of Italian non-restrictive relative clauses is that what appears to be an optional deletion of a relative pronoun is now reduced to the choice between the following two: obligatory deletion in (38a) or obligatory occurrence of an overt relative pronoun in (38b).

In Cinque's (1982) argument, there is a tacit assumption that the type of the unmarked/marked structure is determined in each language. However, there is an empirical and theoretical problem to his analysis. I argue that his assumption based on a choice of a single parameter cannot explain the variation of relative clauses adequately, because there is a third type of relative clause, in addition to his first type with (38a) (i.e., Romance relative clauses with wh-pronouns) and his second type with either (38a) or (38b) (i.e., Romance non-restrictive relative clauses with complex pronouns). This third type is the relative clauses in German. In German relative clauses, relative pronouns are not allowed to be deleted, as in (27) repeated below.

(43) a. Der Mann, {*dass / *der*} dort steht, ist mein Vater.   *(German)*
          the man who there stand is my father
          'The man who is standing there is my father.'
      b. Ich fand ein Buch, {*dass / *das*} ich lessen soll.
          I found a book which I read should
          'I found a book I should read.'
      c. Der Mann, *mit dem* ich gesprochen habe, ist mein Freund.
          the man with whom I spoken have is my friend
          'The man I have talked with is my friend.'

Note that non-restrictive relative clauses in English also belong to the third type of relative clauses.

(44)   the man, {*that / *who*} you saw yesterday, …

In the English non-restrictive relatives as shown in the example (44), relative pronouns are not allowed to be deleted.

Cinque first makes the important distinction between the relative clauses with wh-pronouns, which we consider to be Type1 relative clauses, and those with complex pronouns, which we consider to be either Type1 or Type2 relative clauses. Moreover, Cinque (1982) attempts to explain why there is a relative clause that does not allow the occurrence of bare relative pronouns and heavy pied-piping, by proposing different structures (38) and the condition on deletion in COMP. However, a third type of relative clauses, which we consider to be Type2 relative clauses, cannot be accounted for by Cinque's (1982) analysis.

2.4. *Two Types of Relative Clauses: Type1 Relativizer vs. Type2 Relativizer*

We have so far considered the properties of relative clauses in Germanic and Romance languages, 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. These restrictions observed in the relative clauses suggest themselves that the relative clauses in Germanic and Romance languages are classified into two types, Type1 relative clauses, which allow only minimal pied-piping and do not allow the occurrence of bare relative pronouns, and Type2 relative clauses, which allow heavy pied-piping and the occurrence of bare relative pronouns.

2.4.1.　Typology of Relative Clauses in Germanic and Romance Languages

　　Why are there two types of relative clauses in Germanic and Romance languages? What are the crucial factors that lead to the two types? Romance relative clauses employ the two types of morphologically distinct relative pronouns, wh-pronouns and complex pronouns, and only the latter are allowed to occur in Type2 relative clauses. In addition, German relative clauses employ d-pronouns and they are allowed to occur in Type2 relative clauses. The difference between wh-pronouns, complex pronouns, and d-pronouns is as follows. The complex pronouns and d-pronouns have a rich agreement in number and gender with the head noun but wh-pronouns are simple and have an indeclinable form. It can be said that the distinction between the two types of relative clauses is correlated with the property of the relative pronouns employed.

　　Based on the discussion above, the typology of relative clauses in these languages is shown in table in (45).

(45)　　*Two Types of Relative Clauses in Germanic and Romance Languages*

	Language	Bare relative pronoun	Heavy Pied-Piping
wh-pronoun (Type1)	French	impossible	impossible
	Italian	impossible	impossible
	Norwegian	impossible	impossible
(Type1&Type2)	English	possible	possible
complex-pronoun (Type1&Type2)	French	possible	possible
	Italian	possible (only in non-restr.)	possible (only in non-restr.)
d-pronoun (Type2)	German	possible	possible

If we put aside English wh-pronouns for the moment, we can describe the property of the three types of relative pronouns in the following way. A wh-pronoun can only occur in Type1 relative clauses. A d-pronoun can only occur in Type2 relatives. And a complex pronoun can occur in both types of relative clauses. These properties of relative pronouns indicate that the type of the relative clause in a particular language is determined by the choice of the type of relative pronouns.

　　As for the properties of wh-pronouns in English, however, it is difficult to explain, within the approach presented so far, the fact that the English wh-pronouns behave like complex pronouns. Although a wh-pronoun is generally a kind of Type1 relative pronouns as observed above, the English wh-pronoun can be allowed to be bare and accompanied by the heavy constituents. Here a question arises: why does the English wh-pronoun have an exceptional property? In the following section, I will argue that the exceptional syntactic behavior of English wh-pronouns is attributable to a historical change in Middle English (ME).

2.4.2.　English Wh-pronoun as a Type2 Relativizer

　　Based on the morphological property of relative pronouns, we have made a distinction between Type1 and Type2 relative clauses. In this section, we consider how English wh-pronouns come to be used in Type2 relative clauses, from a diachronic perspective.[17] 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 in number and gender with a head noun.

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[17]　See Allen (1977) and Los (2005) for more detailed discussion. Most of the examples presented in this section are cited from them with a slight modification (i.e., brackets and gaps) added.

Examples of *þe* relatives are shown in (46) (Allen (1977: 76)):

(46) a.   Gemyne he þaes 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 (47) below, the object of a preposition is relativized, in which case preposition-stranding is obligatory (Allen (1977: 77)).

(47) 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)

As with modern English *that*-relatives, it is not possible for *þe* to be with a pied-piped preposition, which shows that *þe* is a relative particle in OE.

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

(48) a.   Ac ge onfoþ þaem maegene Halges Gastes [*se* cymþ 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 illustrated in (49) (Allen (1977: 88-89)):

(49) a.   Weorþian we eac þa claþas 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 emergence 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)):

(50)   …waes seo mycele eorþbyfung on Lumbaridge, [*for hwan* manega mynstras &

        …was the great earthquake in Lumbardy for which many monasteries and

        turas & huses *e* gefeollan]

        towers and houses fell

        'There was the great earthquake in Lumbardy, 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:

(51)   Cumm nu wiþþ me to sen þin Godd wiþþ erþlig bodigsihhþe, [*whamm* þu þurh

        come now with me to see they God with earthly body-sight, whom you through

        Drihhtin sest nuggu *e* wiþþ innsihht 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.[18] It might be the case that wh-words came to be used as relative pronouns since relative clauses were constructionally similar to indirect questions (see Nakao (1972), Ono and Nakao (1980)).

The complex-pronoun-like behavior of wh-pronouns in modern English can be attributed to this diachronic change of the relative pronoun. In OE, a d-pronoun *se* is a Type2 relative pronoun. The change in which wh-words filled the gap that arose from the loss of the system of the demonstrative pronouns allowed wh-pronouns to occur in the Type2 relatives.[19]

2.5.   Summary

In section 2, we have observed the following facts in the relative constructions of Germanic and Romance languages. Wh-pronouns are not allowed to be bare or accompanied by heavy constituents. On the other hand, d-pronouns are allowed to be bare and can be accompanied by heavy constituents. Complex pronouns exhibit the properties of both the wh-pronouns and d-pronouns. The type of relative pronoun employed in a language determines the type of relative clause in that language. In Italian and French, both the wh-pronoun and complex pronoun are employed, and relative clauses with the wh-pronouns show the properties of Type1, while those with complex pronouns show the properties of Type2. In Norwegian, the wh-pronouns are employed, and the relative clauses with them show the properties of Type1. In German, the d-pronouns are employed and the relative clauses with them show the properties of Type2. The relative clauses with relative particles always show the properties of Type1 in these languages. Notice that, as we have seen above, the English relative pronouns *who*/*which* show the properties of Type2 relativizers.

At this point, there arise the following questions. What properties of a wh-pronoun make it possible for it to function as a Type1 relativizer? On the other hand, what properties of a d-pronoun and complex pronoun make it

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[18] Although Allen (1977) observes that there are still some plausible examples of *se* relatives at the beginning of the 12th century, they disappeared entirely in 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.

[19] In English, heavy pied-piping is often observed in the restrictive relative clause (cf. Horvath (2006)).

(i)   Reports [*the lettering on the covers of **which*** the government prescribes the height of] are a shocking waste of

        public funds.   (Horvath (2006: 573))

However, Emonds (1985) points out that such cases, when they are acceptable, are only 'derivatively' generated on the model of non-restrictive relative clauses. This leads us to conclude that the English wh-pronoun would be the type of the complex pronoun rather than the type of the d-pronoun.

possible for them to function as a Type2 relativizer? Concerning with the "type" of the relative clause, previous analyses have mainly focused on the availability of the reconstruction of the head noun. Therefore, first of all, we must consider another question: Is the distinction between Type1 and Type2 relative clauses correlated with the availability of the reconstruction?

3.   Reconstruction Effects

In section 3, we consider the reconstruction effects of the relative constructions in Germanic and Romance languages.[20] Then, we turn to two previous studies which investigate the derivations and structures of the two types of relative clause, based on the observations of the reconstruction effects, and discuss the problems of these analyses. Finally, we reconsider the distinction between Type1 relative clauses and Type2 relative clauses.

3.1.   Reconstruction Effects in Germanic and Romance Languages

First, we observe a reconstruction for the purpose of idiom interpretation in the relative constructions. Following Chomsky (1993), I assume that the interpretation of idiomatic expressions requires the adjacency of the syntactic constituents in LF. Thus, in order for the two parts of an idiom to be adjacent, the head must be reconstructed in its base position.

<Type1>

(52)   a.   The careful track [*that* she's keeping of her expenses] pleases me.   *(English)*
                                                                                                    (Aoun and Li (2003: 101))

        b.   Il décrit dans son livre la part [*qu'*il a prise aux travaux du 9ème congrès].   *(French)*
              he describes in his book the part that he has taken at the workings of the 9th
              conference.
              'he describes in his book the part that he had in the 9th conference.'   (Bianchi (1999: 50))

        c.   Vatn [*som* ein tek seg over hovudet], utviklar seg lett til alvorlege problem.   *(Norwegian)*
              water that one takes self over head-the, develops self easily into serious problem   (Åfarli (1994: 86))

<Type2>

(53)   a.   ?? The careful track [*which* she's keeping of her expenses] pleases me.   *(English)*
                                                                                                    (Aoun and Li (2003: 101))

        b.   die Rede, [*die* er geschwungen hat]   *(German)*
              the speech which he swung has
              'the speech he gave'   (Salzmann (2006: 95))

The relativization of the idiom chunk is always possible in the Type1 relative clauses in Germanic and Romance languages.[21] On the other hand, it is not totally acceptable in English Type2 relative clauses as illustrated in (53a). In German, however, a parallel example with the idiom chunk is allowed even in the Type2 relative clause as shown in (53b).

Secondly, we consider the narrow scope reading of a quantified head noun phrase. The head noun of a relative clause can be reconstructed for the purposes of scope assignment. A distributive reading of the universal quantifiers in the relative clause in the following examples shows that the head noun can be interpreted in the

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[20] My main concern is the reconstruction effects in the restrictive relative clause, because the reconstruction effects in non-restrictive relative clauses are said to be basically impossible (Bianchi (1999)). Hence, whether the complex pronouns in Romance languages block the reconstruction effects cannot be properly attested, because bare complex pronouns only occur in the non-restrictive relative clauses.

[21] In these examples, the reconstruction is not only possible but obligatory. We will discuss the optional vs. obligatory reconstruction further in footnote 31.

scope of these universal quantifiers, and is therefore reconstructed.

<Type1>

(54) a. I phoned the two patients [(that) every doctor will examine tomorrow].   *(English)*
          (the two>every, every>the two)   (Aoun and Li (2003: 113))
     b. Ho telefonato ai due pazienti [***che*** ogni medico visiterà domain].   *(Italian)*
          'I phoned the two patients that every doctor will examine tomorrow.'
          (two>every, every>two)   (Bianchi (1999: 46))

In addition, Åfarli (1994) observes that the Norwegian relative particle *som* does not block the variable-binding by a quantifier phrase in the relative clause as is shown below.

(55) Det brevet til han$_i$ [***som*** [kvar arbeudstakar]$_i$ trur at sjefen sender oppseiinga i],   *(Norwegian)*
      the letter-the to him that each employee believes that boss-the sends dismissal-the in
      er uønska.
      is unwanted
      'That letter to him that every employee believes that the boss sends the dismissal in is
      unwanted.'   (Åfarli (1994: 87))

The narrow scope reading of the quantified head noun phrase is always possible in Type1 relative clauses in these languages as shown in (54) and (55). On the other hand, in Type2 relative clauses, it is sometimes impossible as shown below.

<Type2>

(56) a. I phoned the two patients [***who*** every doctor will examine tomorrow].   *(English)*
          (the two>every, *every>the two)   (Aoun and Li (2003: 113))
     b. die Band, [***die*** jeder Student am besten findet]   *(German)*
          the band which every student the best finds
          'the band that every student likes best'
          (the (band) > every , every > the)   (Salzmann (2006: 95))

As for Type2 relative clauses, the narrow scope reading of the head noun phrase is impossible in English as shown in (56a), whereas it is possible in German as shown in (56b). Here again, among the restrictive relative clauses in Germanic and Romance languages, the distributive interpretation of the head is impossible only in the English Type2 relative clause.

   Thirdly, we consider the reconstruction for the purpose of binding. In examples in (57) and (58), the reconstruction is required in order for the reflexives to be within the scope of its binder.

<Type1>

(57) a. The picture of himself$_i$ [***that*** John$_i$ painted in art class] is impressive.   *(English)*
                                                                           (Aoun and Li (2003: 100))
     b. Il naufragio della <u>propria$_j$</u> nave [***che*** {<u>ogni capitano$_j$</u>/<u>Gianni$_j$</u>} teme *e*] …   *(Italian)*
          the shipwreck of-the <u>self's</u> ship that {every captain/Gianni} fears…   (Cecchetto (2005: 18))
     c. Il giudice$_j$ invalidò l'unica prova della <u>propria$_j$</u> innocenza [***con cui*** <u>l'imputato$_j$</u>   *(Italian)*
          sperava di scargionarsi *e*].
          'The judge invalidated the only proof of his innocence by which the defendant
          hoped that he could exculpate himself.'   (Bianchi (1999: 121))

d. Det av husa sine$_i$ [*som* Jon$_i$ bor i], er Ganske falleferdig.   *(Norwegian)*

that of the houses his that Jon lives in is quite miserable

'The house of his that Jon lives in is quite miserable.'   (Åfarli (1994: 89))

<Type2>

(58) a. *? The picture of himself$_i$ [*which* John$_i$ painted in art class] is impressive.   *(English)*

(Aoun and Li (2003: 100))

b. das Foto von sich$_i$, [*das* Peter$_i$ in der Zeitung gesehen hat]   *(German)*

the picture of self which Peter in the newspaper seen has.

'the picture of himself which Peter saw in the newspaper.'   (Salzmann (2006: 117))

In the examples in (57), the reflexive pronoun contained in the head noun phrase is allowed to corefer with the subject of the relative clause, which indicates that the reflexive pronoun is bound by the subject. The reflexives in the German Type2 relative clauses can also be bound by the subject of the relative clause. On the other hand, the reflexive pronoun is disallowed in English Type2 relative clauses as shown in (58a), which shows that the reflexives cannot be bound by the subject inside the relative clause.

Finally, binding condition C effect is also observed in relative constructions. When an R-expression contained in the head noun is within the scope of the pronoun inside the relative clause by the reconstruction effect, the R-expression and the pronoun cannot corefer.

<Type1>

(59) a. * The portrait of John$_i$ [*that* he$_i$ painted t] is extremely unflattering.   *(English)*

(Schachter (1973: 32))

b. * La recensione del libro di Gianni$_i$ [*che* pro$_i$ ha letto sul giornale] era negative.   *(Italian)*

the review of Gianni's book that (he) read in the newspaper was negative

c. * Quello è l'amico di Gianni$_i$ [*a cui* pro$_i$ ha offerto un lavoro].

this is the friend of Gianni's to whom (he) offered a job   (Bianchi (1999: 110))

The co-referential interpretation between the R-expression contained in the head and the subject of the Type1 relative clause is always impossible, which indicates that the R-expression violates the binding condition C in the trace position. On the other hand, in the relative clause with a wh-pronoun in English, the co-reference between the R-expression and the subject pronoun of the relative clause is possible just as in German relative clauses.

<Type2>

(60) a. The picture of Marsden$_i$ [*which* he$_i$ displays t prominently] are generally the attractive   *(English)*

ones.   (Safir (1998: (38a)))

b. das Bild von Peter$_i$, das er$_i$ am besten findet.   *(German)*

the picture of Peter which he the best likes

'the picture of Peter that he likes the best'   (Salzmann (2006: 96))

The examples in (60) indicate that the R-expressions contained in the head noun are not bound by the subject pronoun of the Type2 relative clause.

The following table (61) provides an overview of reconstruction effects in the relative constructions of Germanic and Romance languages.

(61) *Reconstruction Effect in Germanic and Romance Languages*

		Relativization of idiom chunks	Narrow scope of head noun	Binding	
				Condition A	Condition C
Type1	English	ok (52a)	ok (54a)	ok (57a)	* (59a)
	French/Italian	ok (52b)	ok (54b)	ok (57b,c)	* (59b,c)
	Norwegian	ok (52c)	ok (55)	ok (57d)	--[1]
Type2	English	?? (53a)	* (56a)	*? (58a)	ok (60a)
	German	ok (53b)	ok (56b)	ok (58b)	ok (60b)
[1] Unfortunately, we do not have any examples on the reconstruction effect with respect to Condition C in Norwegian.					

This table indicates that Type1 relative constructions always show reconstruction effects in these languages. As for Type2 relative constructions, however, German relatives show reconstruction for the purpose of idiom interpretation, a narrow scope of a quantified head noun, and binding condition A, while English *wh*-relatives do not show these reconstruction effects. Notice that reconstruction for the purpose of binding condition C is impossible both in English and German relative constructions. Except for the case of condition C, it seems that the distinction between Type1 and Type2 is not correlated with the reconstruction effects.

3.2. *Previous Analyses of Reconstruction Effects*

In the following sections, we take up two previous analyses, which investigate two types of the derivation and structure for relative clauses to explain the distinction concerning the reconstruction effects. First, we examine Aoun and Li's (2003) analysis of English relative clauses. Then, we examine Szczegielniak's (2004) analysis of the relative clauses in Polish and Russian.[22]

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[22] Various previous analyses have focused on the reconstruction effects and consider the structure and derivation of the relative clause on the different approaches. Kayne (1994) and Bianchi (1999) claim that the reconstruction of the head noun phrase is accounted for by the complementation structure and the Head-raising analysis, within the antisymmetry approach. On the other hand, Safir (1999) and Salzmann (2006) claim that it can be accounted for by the traditional adjunction structure and Matching analysis, with one modification, that is the deletion of the internal head noun phrase under identity. Henderson (2006) argues that it is accounted for by the adjunction structure and Head-raising analysis, where the head noun is moved up to the matrix clause via sideward movement, within the Minimalist framework concerning a late Merger of Adjunct. In addition, the hybrid analysis is presented by Aoun and Li (2003) and Szczegielniak (2004). Aoun and Li (2003) claim that the properties of the relative clauses are accounted for by both the Head-raising analysis and Matching analysis with the complement structure in English, and it is accounted for by the both analyses and the left-adjunction structure in Chinese. Szczegielniak (2004) claims that it is accounted for by both Head-raising/Complementation analysis and Matching/Adjunction analysis in Polish and Russian.

(i) *Previous Analyses*

	Complementation		Adjunction		Language, Approach, etc.
	Head-raising	Matching	Head-raising	Matching	
Safir				√ (Eg.)	Eg./ Deletion under Identity
Kayne/Bianchi	√ (Eg, Fr, It.)				Eg, Fr, It. / LCA
Henderson			√ (Eg.)		Eg. / Late Marger
Aoun and Li	√ (Eg.) (THAT-relative)	√ (Eg.) (WH-relative)	√ (Ch.) (THAT-relative)	√ (Ch.) (WH-relative)	Eg, Ch, etc. / LCA
Szczegielniak	√ (Po, Ru.) (THAT-relative)			√ (Po, Ru.) (WH-relative)	Po, Ru.

In their analyses, it is a grammar of a particular language that determines the type of derivation and structure. On the other hand, in my analysis, the decisive factor is the type of the relative pronoun employed. In section 4, I will adopt the analysis proposed by Szczegielniak (2004) with some modifications argued in Safir (1999). I will show that his analysis of the derivation and structure of relative clause is plausible to explain the similarities and differences that we have

3.2.1. Aoun and Li (2003)

Aoun and Li (2003) point out that, in English, the reconstruction of the head noun phrase is possible in *that*-relative clause while it is impossible in a *wh*-relative clause and claim that *that*-relatives are derived via Head-raising and *wh*-relatives are derived via operator movement and undergo Matching. They also claim that both a Head-raising analysis and a Matching analysis are necessary to explain the observed facts, assuming the complementation structure for both of these analyses.[23] The derivation and structure which Aoun and Li propose are the following (Aoun and Li (2003: 122)).

(62) <Head-raising>
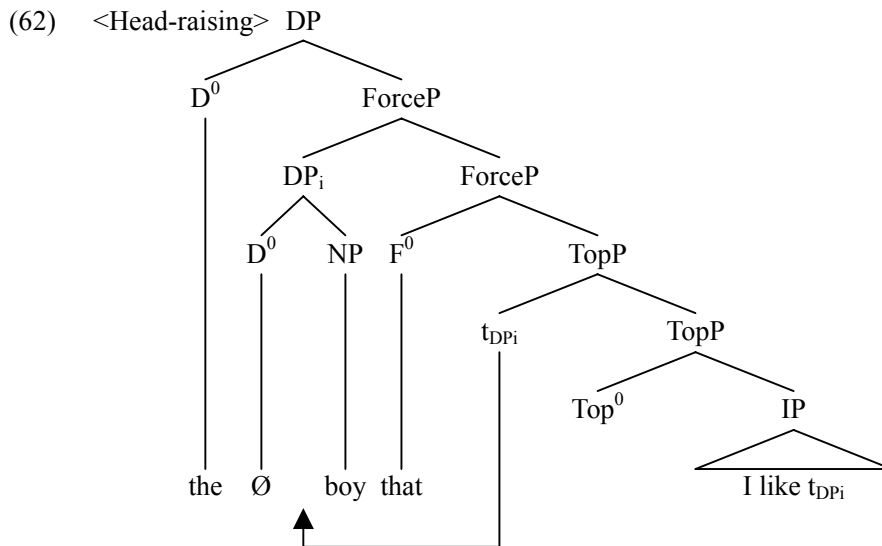
In the structure in (62), the relative construction is derived by means of a two-step movement process; first, the head noun DP is raised to the Spec of TopP and then it is further raised to the Spec of ForceP.

On the other hand, Aoun and Li (2003) claim that the relative construction with wh-pronouns is derived as illustrated below (Aoun and Li (2003: 122)).

(63) <Matching>
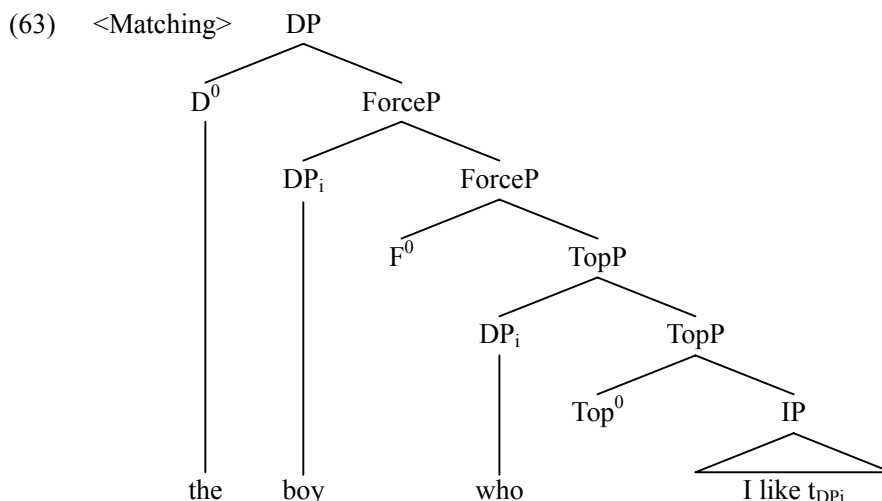
The structure in (63) differs from the structure in (62) in the following two respects. First, the head noun NP in the Spec ForceP is base-generated in this position rather than being moved there. Second, what occupies the Spec of

observed among the relative constructions in Germanic and Romance languages.

[23] Aoun and Li (2003) adopt the antisymmetry approach to the relative clause proposed by Kayne (1994) and Bianchi (1999), and Split CP hypothesis proposed by Rizzi (1997).

TopP is a wh-operator, which can be an DP itself, without a lexical NP as a complement of the wh-operator. As shown in the structure in (63), the wh-word is itself a DP and occupies the Spec of TopP as an operator. The head of the relative construction enters into an agreement relation with the wh-operator and undergoes Predication (see Chomsky (1977), Browning (1987)).

In Aoun and Li's (2003) analysis, the base-generated head noun in (63) is not related to the trace in the relative clause via movement. Their analysis explains that English relative clauses with wh-pronouns do not exhibit any reconstruction effects. However, if the relative clauses with the relative particle generally have the structure (62) and those with the relative pronoun generally have the structure (63), it is expected that the reconstruction of the base generated head NP is not observed in the relative clauses with relative pronouns in Germanic and Romance languages. This prediction is not borne out. The reconstruction effects are observed in the relative clause with the relative pronoun in Italian (57c) and (59c) and German (53b), (56b), (57b), and (60b).

Suppose that Type1 relative clauses generally have the structure (62) and Type2 relative clauses have the structure (63). Although the reconstruction in the Italian Type1 relative clauses (57c) and (59c) are now accounted for, the cases in German relative clauses, which are Type2, cannot be properly accounted for, unless their analysis is augmented by some additional assumptions.

3.2.1. Szczegielniak (2004)

Szczegielniak (2004) examines the reconstruction effects in Polish and Russian. He argues that there are two types of relative clauses in these languages: the relative clauses with *co/čto*, which are relative particles, and those with *który/kotoryx*, which are relative pronouns.[24]

(64) a. Marysia zna chłopców, ***co*** Ania lubi. *(Polish)*
Mary knows boys that Ann likes
b. Maša znajet mal' čikov, ***čto*** Anna ljubit. *(Russian)*
Mary knows boys that Ann loves
(65) a. Marysia zna chłopców, ***których*** Ania lubi. *(Polish)*
Mary knows boys whom Ann likes
b. Maša znajet mal' čikov, ***kotoryx*** Anna ljubit. *(Russian)*
Mary knows boys whom Ann loves (Szczegielniak (2004: 14-15))

As shown in (65), the relative pronoun in these languages can be bare, which indicates that these relative pronouns are Type2 relativizers.

Next we observe the distinction between the two types of relative clauses in Polish with respect to the reconstruction for the purpose of idiom interpretation (66), a narrow scope of quantified head (67), and binding condition C (68).[25,26]

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[24] The relativizers *co/čto*, which are indeclinable, whose form is borrowed from a form of a complementizer and the relativizers *który/kotory*, which agree with the head noun in number and gender, are homonyms of *which/what* in Polish and Russian.
[25] Russian relative clauses show the same reconstruction patterns as we observe in Polish.
[26] As for the case of binding condition A, Szczegielniak (2004) observes that the reflexives contained in the head noun phrase must be bound by the matrix subject.
(i) a. Janek$_1$ zobaczył zdjęcie siebie$_{1/*2}$ ***co*** ty$_2$ kupileś
Janek saw picture self that you bought
'Janek saw a picture of himself/*yourself which you bought.'
b. Janek$_1$ zobaczył zdjęcie siebie$_{1/*2}$ ***które*** ty$_2$ kupileś
Janek saw picture self that you bought
'Janek saw a picture of himself/*yourself which you bought.'

(Szczegielniak (2004: 33-34))

(66) a. Słow **co** on nie rzucał na wiatr
words that he not throw on wind
'Empty promises that he did not make'

b. ?? Słow **których** on nie rzucał na wiatr
words which he not throw on wind
'Empty promises that he did not make' (Szczegielniak (2004: 23-24))

(67) a. ?? Każdy chłopiec **co** ty wiesz że jakaś dziewczynka pacałowała
each boy that you know that some girl kissed
'Each boy that you know that some girl kissed'

b. ?* Każdy chłopiec **którego** ty wiesz że jakaś dziewczynka pacałowała
each boy whom you know that some girl kissed
'Each boy that you know that some girl kissed' (Szczegielniak (2004: 25-26))

(68) a. ?? Znam koleżankę Janka$_1$ **co** on$_1$ powiedział że chce polubić
know friend(fem) John that he said that wants like
'I know a friend of John that he said that he wants to like.'

b. Znam koleżankę Janka$_1$ **którą** on$_1$ powiedział że chce polubić
know friend(fem) John who he said that wants like
'I know a friend of John that he said that he wants to like. (Szczegielniak (2004: 31-32))

Table (69) provides an overview of the reconstruction effects in the relative clauses of Polish.

(69) *Reconstruction effects in Polish*

	Relativization of idiom chunks	Narrow scope of head noun	Binding Condition C
co-relatives	ok (66a)	?? (67a)	?? (68a)
który-relatives	?? (66b)	?* (67b)	ok (68b)

In Polish and Russian, the reconstruction of the head noun phrase for idiom interpretation, scope, and binding condition C is harder in the Type2 relative clauses than in the Type1 relative clauses. There is a general tendency that, in both Germanic/Romance and Slavic languages, the reconstruction effect is possible or sometimes obligatory in Type1 relative clauses, whereas it is impossible or hard in Type2 relative clauses.

Next, we look at Szczegielniak's (2004) analysis of the two types of relative clauses. He claims that *co/čto*-relative clauses, which we consider to be Type1, are derived via Head-raising and *który/kotory*-relative clauses, which we consider to be Type2, are derived via operator movement. Furthermore, it is claimed that the structures of these two types of relative clauses are not the same. The Head-raising relative clauses have a complementation structure and the Matching relative clauses have an adjunction structure, as illustrated below (Szczegielniak (2004: 12)).

(70) [$_{Relative Clause}$ HN$_i$ [**co/čto** [$_{VP}$ [$_{DP}$ HN$_i$]]]]

(71) HN$_i$ [$_{Relative Clause}$ (co/čto) **który/kotoryj$_i$** [$_{VP}$ [$_{DP}$ *który/kotoryj$_i$*]]]

Szczegielniak's analysis differs from Aoun and Li's in that the Matching relative clause is adjoined to the head

noun phrase. There is no base-generated head NP in the Spec of ForceP of the Matching relative clause as stipulated in Aoun and Li (2003).

Thus, it is plausible to claim that the Type1 relative clause has a complementation structure and is derived via Head-raising, and the Type2 relative clause is adjoined to the head noun that is outside the relative clause and undergoes Matching, as proposed by Szczegielniak (2004). However, there still arise two questions. First, how are the reconstruction effects in German relative construction, which are Type2, accounted for? Second, how are the restriction on the bare relative pronoun and the restriction on heavy pied-piping accounted for by postulating these two types of derivation and structure? In the following section, we consider the first question, and in section 4, we take up the second question.

3.3.   Reconstruction Effects and Matching Relative Clauses

At the beginning of the section 3, we have shown that, though they are Type2 relative clauses, German relative clauses show reconstruction effects except for binding condition C. Is it plausible to claim that all cases of relative clauses which show reconstruction effects are derived via Head-raising, and that the relative clauses which do not show them undergo Matching?[27] It is often pointed out, however, that the Head-raising analysis poses a problem for German. Since the head noun originates in the complement clause in the Head-raising analysis, one would expect that the Case of the head noun phrase and the inflection of adjectives within the head noun phrase are dependent on the relative clause-internal context. However, both of them depend on the relative clause-external context as illustrated in the example (72).

(72)   a.   Ich fand den grossen Bären, *der* im Müll gestöbert hat
             I found the.**ACC** big.**ACC** bear.**ACC** which.**NOM** in the garbage rummaged has
             'I found the big bear which rummaged in the garbage'
        b.   * Ich fand den grosse Bär, *der* im Müll gestöbert hat
             I found the.**ACC** big.**NOM** bear.**NOM** which.**NOM** in the garbage rummaged has
             'I found the big bear which rummaged in the garbage'   (Salzmann (2006: 122))

It seems that at this point we are facing a paradox.

On the other hand, it is pointed out by Åfarli (1994) that the case-marking of the head noun in the Norwegian relative clauses, which are Type1, provides a piece of supporting evidence for the Head-raising analysis. Consider the examples in (73):
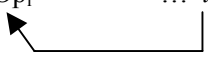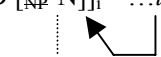
(73)   a.   Vi snakket med henne/*hun.
             we talked with **HER**/***SHE**
        b.   Vi snakket med henne/hun som hadde met oss dagen før.
             we talked with **HER**/**SHE** that had met us day-the before   (Åfarli (1994: 92))

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[27] Contrary to the analysis in this paper, Pesetsky and Torrego (2006) argue that German d-pronouns occupy the position of C^0 in the relative clause. The complement of N should be finite CP with a complementizer which moves up from T^0, or PP. In the relative construction, therefore, the apparent bare relative pronoun is not the relative pronoun but the complementizer of the clausal complement of N^0. In the complement position of N^0, the initial relative pronoun, which is a DP, is hence entirely ruled out in Pesetsky and Torrego's analysis. It leads us to conclude that German relative clauses are parallel to the English *that*-relative clauses and thus belong to the Type1 relative clauses. If the German relative clauses are Type1 relative clauses, the reconstructed interpretation of the head noun is accounted for straightforwardly.

However, the fact that the German relative clause allows the pied-piping of the DP (i.e., *dessen Vater* 'whose father') is not accounted for by their analysis. In addition, the German relative clause allows the further heavy pied-piping as observed in section 2.

Given the Head-raising analysis, an explanation for the possibility of a nominative Case in (73b) is that the pronoun gets the nominative Case from the subject position of the relative clause.[28] Thus, we should consider the German relative clauses to be the Type2/ Matching relative clause, while the Norwegian relative clauses are considered to be the Type1/Head-raising relative clause.

Sauerland (1998), Safir (1999), and Salzmann (2006) suggest that, even in the Matching relative clause, reconstruction effect is one of the possible consequences. They claim that, in Matching relative clauses, the 'internal' head noun phrase inside the relative clause is moved up to Spec of CP where it is deleted under identity with the 'external' head at PF level. This treats with the Case problems, and at the same time can explain reconstruction that is possible in German, as illustrated below.

(74)   a. $[_{DP}$ D $[_{NP}$ N] $[_{CP}$ Op$_i$ … t_i]]   (Szczegielniak (2004))

       b. $[_{DP}$ D $[_{NP}$ N] $[_{CP}$ $[_{DP}$ D $[_{NP}$ N]]$_i$ …t_i]]   (Safir (1999) etc.)

                External Head   Internal Head

Reconstruction effects follow straightforwardly from the analysis of deletion under identity in the Matching relative clause, as illustrated below.

(75)   a.   das Bild von sich$_i$ $[_{CP}$ ***das*** Peter$_i$ am liebsten mag]
              the picture of self which Peter the most likes
       b.   das [Bild von sich$_i$]$_j$ $[_{CP}$ [***das*** ~~[Bild von sich$_i$]~~$_j$]$_k$ Peter$_i$ ~~[das Bild von sich$_i$]~~$_k$ am liebstn mag]
                                                                      (Salzmann (2006: 128))

The internal head NP *Bild von sich*, which is the restrictor of the relative pronoun *das*, is deleted in the Spec of CP and is retained only in the lower copy inside the relative clause. The lower copy is within the c-command domain of the subject of the relative clause *Peter*, and thus the reflexive pronoun *sich* is bound by *Peter*.

If reconstruction is possible in the Matching structure in German, however, the absence of Condition C effects in German relative clauses comes to be mysterious as shown in (76).

(76)   a.   das Bild von Peter$_i$, $[_{CP}$ das er$_i$ am besten findet].
              the picture of Peter which he the best likes
              'the picture of Peter that he likes the best'
       b.   das [Bild von Peter$_i$], $[_{CP}$ [das [~~Bild von **Peter**$_i$~~]]$_j$ er$_i$ ~~[das Bild von **Peter**$_i$]~~$_j$ am besten findet].

Under the assumptions made so far, this is unexpected because the internal head noun phrase leads to the presence of the condition C, as illustrated in (76b). Without postulating some mechanism which removes the copy of the R-expression in the c-command domain of the subject pronoun of the relative clause, we cannot explain the absence of the condition C violation in (76a).

The question here is how the external head noun phrase is represented inside the Matching relative clause. With

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[28] However, such an analysis is compromised by facts like those in (ia,b), where most speakers can also use either the accusative or nominative form of the pronoun.
(i)   a.   Vi snakket med henne/hun som vi hadde truffet dagen før.
              we talk with her/she that we had met day-the before
       b.   Vi snakket med henne/hun i den vakre kjolen.
              we talk with her./she in the beautiful dress   (Åfarli (1994: 92))
In these examples, there would be no source for the nominative case of the pronoun, and it is a mystery why a nominative pronoun is possible at all.

regard to the copy of the R-expression, Fiengo and May (1994) point out that no condition C effect is obtained in the following examples (77).

(77) a. John drew a picture of Mary$_i$, but she$_i$ didn't like it (the picture of Mary$_i$).
      b. Mary loves John$_i$ and he$_i$ thinks that Sally does <love John$_i$>, too.   (Fiengo and May (1994: 220))

The R-expressions in the antecedent of the pronoun in (77a) and in the elided VP in (77b) do not lead the condition C violation. Fiengo and May (1994) propose that the identity relationship between the elided VP and its antecedent VP is satisfied, even when an R-expression in the antecedent VP corresponds to the coreferential pronoun in the elided VP (i.e., *Sally does <love him>*). Fiengo and May introduce the mechanism called Vehicle Change for such cases where exact identity of syntactic forms does not hold. Sauerland (1998), Safir (1999), and Salzmann (2006) propose that the internal head noun phrase inside the Matching relative clause is subject to Vehicle Change, which causes the internal head to be a personal pronoun with corresponding ϕ-features. Then, the LF representation of the example (76a) is not the one illustrated in (76b) but the one illustrated in (78) (cf. Salzmann (2006: 129-130)).

(78)   das [Bild von Peter$_i$], [$_{CP}$ [das [~~Bild von ihn$_i$~~]]$_j$ er$_i$ ~~[das Bild von ihn$_i$]~~$_j$ am besten findet].
          the [picture of Peter] [$_{CP}$ [which [picture of him]] he [which picture of him] the best find]

Since the relative clause-internal copy contains only a pronoun, the sentence does not violate the condition C, as we can see in the example (79).[29]

(79)   Er$_i$ mag dieses [Bild von ihn$_i$].
          he likes this picture of him   (Salzmann (2006: 130))

   Adopting the assumptions presented above, we can explain the fact that the reconstruction of the head noun phrase is possible even in Matching relative clauses. At the same time, the hybrid analysis of the two types of the relative clauses together with the deletion of the internal head noun phrase under identity explains the clear distinction between Type1 relative clauses and Type2 relative clauses in the case of reconstruction effects for the purpose of binding condition C.[30,31]

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[29] For a detailed analysis of the mechanism that avoids the Condition C effect, allowing scope reconstruction and relativization of idiom chunk, see Salzmann (2006).

[30] There arises a question why English relative clauses with wh-pronouns do not show the reconstruction effects which would be possible under these assumptions. The d-pronouns in German differ from the wh-pronoun in English in that the former is a demonstrative in the language but the latter is not. I assume that German d-pronouns can easily be a licensor of the deletion whereas English wh-pronouns can hardly be a licensor of the deletion.

[31] Although the previous analyses adopting Vehicle Change of the relative clause (Sauerland (1998), Safir (1999), etc.) do not focus on the distinction between *that*-relatives and *wh*-relatives, or between English relatives and Romance relatives, their analyses, which claim that the relative clause always involves such a deletion, face the problem when the Condition C effects reemerge, as in the examples below.

(i) a. *the picture of Bill$_i$ that he$_i$ took   (Munn (1994: 402))
     b. *The headway on Mary$_i$'s project she$_i$ had made pleased the boss.   (Sauerland (1998: 71))

On the other hand, in my analysis, the use of idioms enforces that these English relative clauses are Type1 relative clauses, which are derived via Head-raising. The condition C effect in (ia-b) is thus accounted for straightforwardly.

   In addition, it is worth pointing out that there is a case of obligatory reconstruction as shown in (iia). However, if the reconstruction is obligatory, the coreference in (iib) is not accounted for.

(ii) a. *John made the headway that was impressive.
      b.   John$_i$ found a picture of himself$_i$ that Mary took.

Further research will be required.

3.4.   Summary

In section 3, we have considered the reconstruction effects in Germanic and Romance languages, and examined two previous hybrid analyses. Adopting Szczegielniak's (2004) hybrid analysis and Sauerland (1998) and Safir's (1999) deletion under identity analysis, we can say that the distinction between Type1 relative clauses and Type2 relative clauses in fact correlates with the availability of the reconstruction for the purpose of idiom interpretation, a narrow scope of a quantified head, binding condition A, and condition C. Hence, we conclude that Type1 relative clauses have a complementation structure and derived via Head-raising, while Type2 relative clauses are adjoined to an "external" head noun and undergo Matching between the external head and the "internal" head.[32]

4.   Towards a Syntax of Two Types of Relative Clauses

We have so far observed two types of relative clauses in Germanic and Romance languages from three points of view: (i) the restriction on the occurrence of bare relative pronouns, (ii) the restriction on the size of pied-piping, and (iii) the reconstruction effects. In Type1 relative clauses, the occurrence of the bare relative pronouns and heavy pied-piping are not allowed while, in Type2 relative clauses, they are allowed. In addition, the reconstruction effect for the purpose of binding condition C is observed only in Type1 relative clauses.

In section 3, based on the cross-linguistic data on (iii) the reconstruction effects, I have claimed that the Type1 relatives have a complementation structure and are derived via Head-raising, whereas Type2 relatives have an adjunction structure and undergo Matching. I have also claimed that there is a deleted internal head in the Matching relative clauses. In section 4, first I consider two questions: what properties of a wh-pronoun make it possible for it to function as a Type1 relativizer, and what properties of a d-pronoun and a complex pronoun make it possible for them to function as a Type2 relativizer. Then, I attempt to show that the modified hybrid analysis presented in section 3 can account uniformly for the other two differences between Type1 and Type2 relative clauses: (i) the restriction on the occurrence of the bare relative pronouns and (ii) the restriction on the size of pied-piping.[33]

4.1.   Structure and Derivation of Two Types of Relative Clauses

4.1.1. Syntax of the Relativizers

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[32] Recall that Aoun and Li (2003) claim that both two types of relative clauses are the complement to the external D^0 in English. It can be argued that the deletion of the internal head might also suit their Matching/Complementation structure of the Type2 relative clauses, as illustrated below.
(i)   [$_{DP}$ D [$_{CP}$ NP$_{(base-generate)}$ [$_{DP}$ D [$_{NP}$ N̶]]$_i$ C [$_{IP}$ … t_i …]]]
However, there is no direct evidence which supports that the Type2 relative clause is a complement of an external determiner. Consider the restriction on the definite determiner, as illustrated below.
(ii)   a.   There were (*_the_) <u>men</u> in the garden.
        b.   _The_ [men **that** there were *e* in the garden] were all diplomats.
        c.   *_The_ <u>men</u> **whom** there were *e* in the garden were all diplomats.
                                                (cf. Carlson (1977), Aoun and Li (2003: 103))
(iii)   a.   John made (*_the_) <u>headway</u>.
        b.   _The_ [headway **that** John made *e*] was amazing.
        c.   *_The_ <u>headway</u> **which** John made *e* was amazing.
                                                (cf. Schachter (1973), Browning (1987: 130), Aoun and Li (2003: 103))
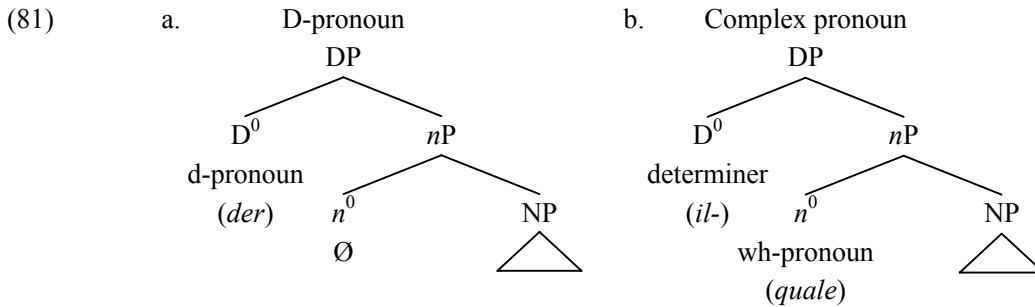The examples in (iia) and (iiia) show that these underlined NPs cannot be complement to the definite article *the*. Aoun and Li claim that the examples in (iib) and (iiib) indicate that these NPs are not a direct complement of determiner but inside the relative clause which is a complement of the determiner. However, as shown in (iic) and (iiic), the restriction on the definite determiner of the head NP reemerges in Type2 relative constructions.
[33] We will not consider the derivation and structure of the non-restrictive relative clauses in Germanic and Romance languages in detail.

Consider the morphological form of the complex pronouns *le-quel* and *il-quale*, which consists of a determiner and a wh-pronoun. Wiltschko (1998) argues that demonstrative pronouns are instances of the definite determiner even if they are used pronominally. She also argues that the pronouns are not of the category D but occupy the head of some DP-internal functional projection. I call this DP-internal functional projection a small Noun Phrase (*n*P), which is a nominal functional projection positioned immediately below DP. The head n^0 is the locus of the nominal agreement features such as number and gender.[34] Furthermore, *n*P takes an NP complement. The structure of the DP is as follows.

(80)

DP
┌────────┴────────┐
D^0 *n*P
[definiteness]   ┌──────┴──────┐
                   n^0 NP
                   [ϕ-feature]   △
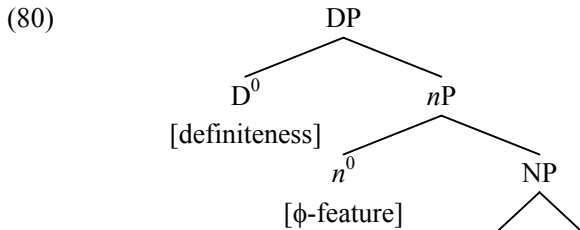
Now consider the internal structure of the relative pronoun. Following Wiltschko's analysis of the split DP, I argue that the d-pronoun and the wh-pronoun are the instantiation of a syntactic head projecting the XP of its own. The internal structure of the d-pronouns and complex pronouns, which we consider to be Type2 relativizers, is illustrated as follows.

(81)   a.   D-pronoun   b.   Complex pronoun

                DP   DP
         ┌──────┴──────┐   ┌──────┴──────┐
        D^0 *n*P D^0 *n*P
      d-pronoun   ┌────┴────┐   determiner   ┌────┴────┐
       (*der*) n^0 NP   (*il-*) n^0 NP
                   Ø   △   wh-pronoun   △
                                                  (*quale*)

In the case of the Type2 relativizer, d-pronouns or determiners occupy the position of D^0. The position of n^0 can be occupied by either a wh-pronoun or a null element ∅. In section 2.4.2, we have regarded the relative pronoun in English as a Type2 relativizer. We can say that the wh-pronoun in English is a wh-counterpart of the demonstratives, which occupies the position of D^0. On the other hand, in the case of the Type1 relativizer, overt determiners do not occupy the position of D^0. Thus, the internal structure of the wh-pronouns, which we consider to be Type1 relativizers, is illustrated as follows.[35]

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[34] In this paper, the exact character of this functional head will not be deeply examined. Although the functional projection is referred to as an *n*P following Julien (2005), it might be a NumP or a CaseP. See Grosu (1988), Ritter (1991), de Hoop (1992), and Watanabe (2002). The decomposition of the DP-internal functional projection is not of further relevance here, I will continue to refer to *n*P throughout the paper.

[35] The relativizers are first generated as an argument (or the object of the preposition) inside the relative clause. Thus, the Type1 relativizers must be DP but not the bare *n*P even if they lack the overt determiner.

(82)

```
                    DP
                 /      \
              D⁰         nP
              Ø        /    \
                     n⁰      NP
                 wh-pronoun   △
                   (cui)
```
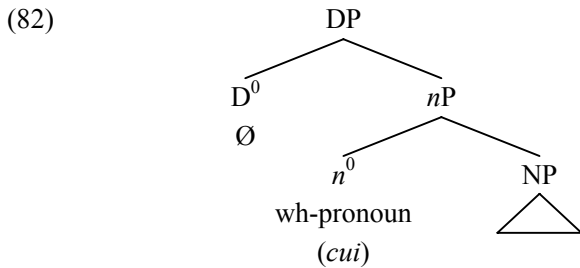
Recall that the Type1 relativizers (i.e., *qui* and *cui*) are indeclinable. This indicates that, without the determiner as in the Type2 relativizer, the wh-pronoun does not have the inflectional ending.[36] D^0 in the DP structure of the Type1 relativizer (82) is defective in this respect.

Bianchi (1999) argues that the complement NP, which is the [+N] category, must be head-governed by the D^0, which also has the strong [+N] feature. She also argues that the complement NP cannot be properly licensed by the defective D^0 of the wh-pronoun, which is a Type1 relativizer. This defective property of the functional projection of the wh-pronoun forces its complement NP to raise further to be checked by the matrix D^0. On the other hand, I argue that the complement NP of the Type2 relativizer is licensed by its D^0 and need not raise further.

(83)　a.　*Wh*-pronoun:　　$[_{DP}$ Ø$_{def}$　$[_{nP}$ *cui*　$[_{NP}$ N$_{[+N]}$]]]

　　　b.　Complex pronoun: $[_{DP}$ *il*$_{([+N])}$　$[_{nP}$ *quale*　$[_{NP}$ ~~N~~$_{[+N]}$]]]

　　　c.　D-pronoun:　　$[_{DP}$ *der*$_{[+N]}$ $[_{nP}$ Ø　　$[_{NP}$ ~~N~~$_{[+N]}$]]]

Under the analysis of split DP, the external DP in the matrix clause also has the internal functional projection *n*P. Then, a question arises as to the position of the Type1 and Type2 relative clauses in the internal structure of the external D projections. Consider the examples of the stacked relative clauses in English and Italian below.

(84)　a.　The man $[_{Type1}$ that fixed the sink]$[_{Type2}$ whom John told us about] is here.

　　　b.　* The man $[_{Type2}$ whom John told us about]$[_{Type1}$ that fixed the sink] is here.

(85)　a.　I candidati $[_{Type1}$ **che** superino lo scritto], $[_{Type2}$ **i-quali** diano anche prova di conoscere
　　　　una lingua straniera], potranno presentarsi all'orale.
　　　　'The candidates that will pass the written examination who will show that they know
　　　　a foreign language may sit for the oral examination.'

　　　b.　*? I candidati, $[_{Type2}$ **i-quali** abbiamp superato lo scritto], $[_{Type1}$ **che** possiate ritenere
　　　　maturi] sono davvero pochi.
　　　　'The candidates who have passed the written examination who you may consider
　　　　mature are really few.'

　　　c.　*? Gli studenti $[_{Type2}$ **i-quali** conoscano bene il tedesco] $[_{Type1}$ **a cui** potete rivolgervi]
　　　　sono pochi.
　　　　'The students that know German well whom you can turn to are few.'　　(cf. Cinque (1982: 266-277))

English and Italian are languages that have both Type1 and Type2 relative clauses. In these languages, Type1 relative clauses must precede Type2 relative clauses when these two types of relative clauses are stacked. This restriction on the order of the two types of relative clauses is accounted for straightforwardly by postulating that Type1 relative clauses are not the complement of the determiner but the complement of the n^0, and Type2 relative clauses are adjoined to the *n*P. The stacking structure of the Type1 and Type2 relative clauses is illustrated below.

---

[36] The question of how the determiners or demonstratives have the inflectional ending is accounted for by either an agreement between these functional heads or the head movement of n^0 to D^0. For a detailed discussion, see Grosu (1988), Ritter (1991), de Hoop (1992), and Watanabe (2002).
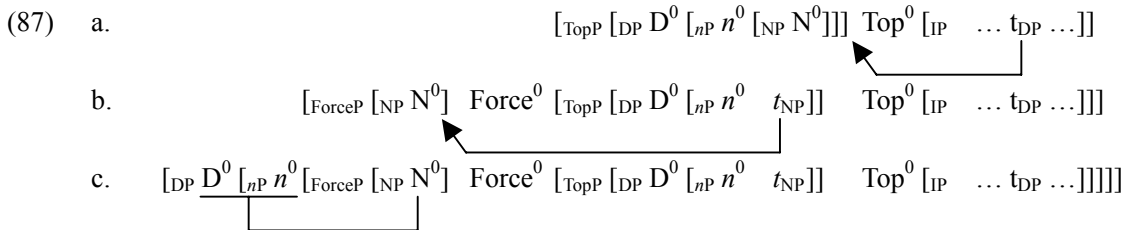
(86)
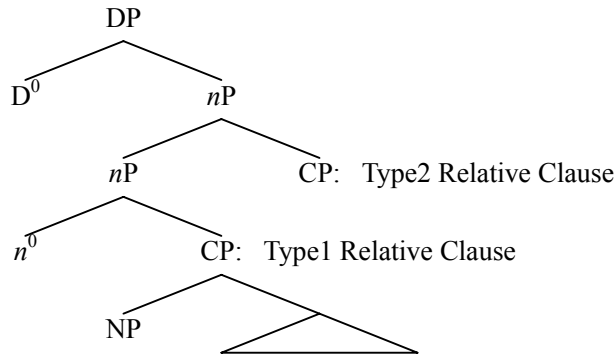
In the Type1 relative clause, the head NP is inside the CP. If the Type2 relative clause were adjoined to the head NP, it must be inside the Type1 relative clause, and hence should precede the relative particle, which occupies C^0, and IP of the Type1 relative clause, contrary to the facts. The restriction on the relative order of the two types of relative clauses is also accounted for by assuming the DP-internal functional projection nP as an adjunction site of the Type2 relative clause.

4.1.2. Type1 as Head-raising/Complementation Relative Clauses

Let us now consider the structure and derivation of the Type1 relative clause. Following Bianchi (1999), we adopt Rizzi's (1997) split CP hypothesis. The derivation of the Type1 relative clause is illustrated below.

(87) a. $[_{TopP} [_{DP} D^0 [_{nP} n^0 [_{NP} N^0]]]$ Top^0 $[_{IP}$ ... t_{DP} ...]]

  b. $[_{ForceP} [_{NP} N^0]$ Force^0 $[_{TopP} [_{DP} D^0 [_{nP} n^0$ $t_{NP}]]$ Top^0 $[_{IP}$ ... t_{DP} ...]]]$

  c. $[_{DP} D^0 [_{nP} n^0 [_{ForceP} [_{NP} N^0]$ Force^0 $[_{TopP} [_{DP} D^0 [_{nP} n^0$ $t_{NP}]]$ Top^0 $[_{IP}$ ... t_{DP} ...]]]]]$

In (87a), the internal head DP raises from within the IP of the relative clause, to the Spec of TopP, to check a strong Rel-feature of Top^0, which is a counterpart of the Q-feature in WH-interrogatives, as proposed in Bianchi (1999). The complement NP of the raised internal head DP undergoes further movement as illustrated in (87b). Then, what motivates the further raising of the complement NP? Here I assume that the head NP moves to the Spec of ForceP and establishes a checking relation with the external D^0 because of the defectiveness of the internal DP. In other words, the head NP raises further to satisfy its own requirement (cf. Bianchi (1999)). This movement of the head NP obeys the principle of Greed proposed by Chomsky (1995: 201): Move α applies to an element α only if morphological properties of α itself are not otherwise satisfied.[37] Then, the relative clause ForceP merges with the n^0 and D^0 of the matrix clause and the checking relation between the external D^0 and the complement NP of the internal head DP is established as shown in (87c).
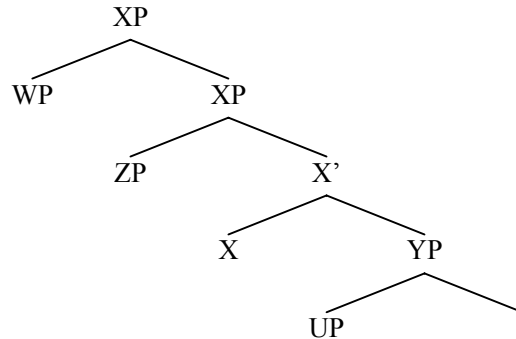
---

[37] Bianchi assumes that the external D^0 has the strong [+N] feature to be checked by the [+N] category. This nominal feature cannot be checked by the ForceP complement. Thus it triggers the raising of a complement NP to a position adjacent to the external D^0, which is the Spec of ForceP. However, the raising of the NP for the purpose of satisfying [+N] of the external D^0 is a kind of counter-cyclic movement because the external D^0 have not entered into the derivation yet when the NP raises. This type of movement would also be necessary in the wh-interrogatives in this version of the minimalist framework. The embedded C^0 does not have the relevant feature that triggers the movement of the wh-phrase.
(i)   What$_i$ do you think $[_{CP} t_i C^0$ [that Mary bought t_i]]?
   If we assume that the embedded ForceP has another Rel-feature (and not the DP[Rel] but the NP[Rel] is active because of the defectiveness of DP), the movement of the NP would be motivated independently.

As for the checking relation between two elements, Chomsky (1995) claims that the operative relations have a local character. In his definition, the Minimal Domain of S is the smallest subset K of S such that for any $\gamma \in$ S, some $\beta \in$ K reflexively dominates γ (Chomsky (1995: 178)). Thus, the Minimal Domain of X in (4-7) is {WP, ZP, YP}.

(88)

```
                    XP
                   /  \
                 WP    XP
                      /  \
                    ZP    X'
                         /  \
                        X    YP
                             / \
                           UP
```

However, the external D^0 and the complement NP of the internal head DP in the Spec of ForceP are not in the basic checking relation defined by the Minimal Domain in Chomsky (1995). As for the case of the Head-raising relative construction, the complement NP of the internal head is in the Spec of YP, which is UP. The position of UP is considered to be not in the Minimal Domain of X, which is the position of the external D^0.

Here we adopt Manzini's (1994) modified notion of Minimal Domain of a head: the Minimal Domain of a head X includes the complement YP of the head X and the specifier UP of the complement YP of the head X.[38,39] Based on her definition of Minimal Domain, the external D^0 and the complement NP of the internal head are considered to be in the checking relation. Thus, the requirement of the external D^0 and the complement NP of the internal head is satisfied.

4.1.3. Type2 as Matching/Adjunction Relative Clauses

Next, let us consider the derivation of the Type2 relative clause. Watanabe (2006) assumes that the d-pronoun used as a relative pronoun must undergo agreement with the external D^0, if it contains an uninterpretable definiteness feature. He also assumes that the goal is the external D^0 since the constituent raised to Spec of the relative clause CP should not contain an interpretable definiteness feature. Given this assumption that d-pronoun must undergo agreement with the external D^0, it is plausible that the derivation of the Type2 relative clause is as follows.

(89)   a. $[_{TopP} [_{DP} D^0 [_{nP} n^0 [_{NP} N^0]]] Top^0 [_{IP} \dots t_{DP} \dots]]$

       b. $[_{DP} D^0 [_{nP} n^0 [_{NP} N^0]] [_{TopP} [_{DP} D^0 [_{nP} n^0 [_{NP} N^0]]] Top^0 [_{IP} \dots t_{DP} \dots]]]$

       c. $[_{DP} D^0 [_{nP} n^0 [_{NP} N^0] [_{TopP} [_{DP} D^0 [_{nP} n^0 [_{NP} N^0]]] Top^0 [_{IP} \dots t_{DP} \dots]]]]$

---

[38] Manzini's notion of Minimal Domain is based on the adjunct status of the specifiers in the antisymmetric approach. However, here I adopt the essence of her notion, which is concerned with the transparency (for the upper functional heads) of the specifier position of the embedded clause. In the current minimalist framework (Chomsky (2004, 2006)), the relevant transparency is accounted for by the notion of 'Phase' and its 'edge.'

[39] Note that Manzini's locality condition is not formulated in terms of chain links of the usual type, but rather in terms of dependencies between heads related to each other by an elementary relation, such as complementation or checking, to create an extended projection in the sense of Grimshaw (1991).

The internal head DP raises from within the IP of the relative clause to the Spec of TopP, to check the Rel-feature of Top^0, as we have considered in the derivation of the Type1 relative clause, as illustrated in (89a). The internal head DP of the Type2 relativizer is not defective, so the head NP does not need to undergo further movement. Suppose the relative clause TopP merges with the external n^0 and D^0, and the external D^0 and internal D^0 establish the agreement relation for Matching. In this case, the [+N] feature of the external D^0 is not considered to be checked by the NP. On the other hand, suppose that the relative clause is adjoined to the nP, which is the position immediately below the external D^0, and the external D^0 and internal D^0 establish the agreement relation. In this case, all of the strong features in the derivation are satisfied. Then, the complement NP of the internal head deletes under identity, as we have considered in the previous section.

At this point, we can answer the questions what properties of the wh-pronoun make it possible for it to function as a Type1 relativizer, and what properties of the d-pronoun and the complex pronoun make it possible for them to function as a Type2 relativizer. In the languages with the Type1 relativizer, the D^0 is defective so that the complement NP of the internal head must raise further to the left-peripheral position of the relative ForceP to establish a checking relation with the external non-defective D^0 and n^0. On the other hand, in the languages with the Type2 relativizer, the D^0 occupied by the d-pronoun is not defective so the complement NP of the internal head need not raise further. In addition, the d-pronoun has its own property that forces it to undergo agreement with the external D^0.[40] Thus, the relative clauses with the Type1 relativizers are derived via Head-raising with a complementation structure, and they show the full reconstruction effects. On the other hand, the relative clauses with the Type2 relativizers are adjoined to the external head and undergo Matching, and thus, show the indirect reconstruction effects, as discussed in section 3.[41]

4.2.   Bare Relative Pronouns: Licensing Conditions on Relative Pronouns

We have considered the correlation between the internal structure of the relativizer and the derivation of the relative clause. In this section, we will consider the question why there is a restriction on the occurrence of the bare relative pronoun.[42]

4.2.1. Licensing Condition on Wh-pronouns

We have seen that wh-pronouns are Type1 relativizers, with which the relative clause shows the properties of Type1. An example of the Type1 relative clause in Italian is shown below.

(90)   a.   * L'[CP uomo [***cui*** C^0 vedu]] è suo zio.

---

[40] Why are wh-pronouns excluded from "Matching" relative clauses? Watanabe (2006) claims that the wh-pronouns raised to Spec of the relative clause would function as a generalized quantifier since wh-expressions must be associated through agreement with a quantificational particle (including a null particle used in wh-questions). It follows that the Matching relative clause with a wh-pronoun as a whole would function as a closed complete proposition, which could not be semantically combined with the head NP. Hence the wh-pronouns as relative pronouns in Type2 relative clauses are impossible.

[41] Given these assumptions above, the restriction on the occurrence of the relative pronoun with the non-referential head noun phrase in English relative constructions is accounted for..

(i)   a.   John is not the doctor {**who/that*/∅} his father was.   (Wasow (1979: 93-94))
        b.   The headway {??***which***/***that***/∅} Mel made was impressive.   (Aoun and Li (2003: 110))

The relative clauses with the relative pronouns *who/which* are Type2. In the Type2 relative constructions, both the internal and external head NP are head governed by the D^0 of the head noun phrase. The internal D^0 agrees with the external D^0 in definiteness. Thus, neither the head NP *doctor* nor *headway* in the example (i) can be interpreted as a non-referential NP. On the other hand, in Type1 relative constructions, the apparent determiner of the head NP is not the determiner of the internal head DP, but the external D^0 which merges with ForceP. Thus, in Type1 relatives, the head NP can be interpreted as a non-referential NP in the base position inside the relative clause.

[42]   In this section both ForceP and TopP are referred to as the same CP for simplicity reasons.

    b.   L'[$_{CP}$ uomo [ø ***che*** vedu]] è suo zio.

    c.   L'[$_{CP}$ uomo [***a cui*** C^0 parlavi]] è cieco.

    d. * L'[$_{CP}$ uomo [***a*** ø C^0 parlavi]] è cieco.

Recall that, in the Type1 relative clause, the bare relative pronoun is not allowed to occur as shown in (90a) and (90b) while the relative pronoun must occur in the case of minimal pied-piping, as shown in (90c) and (90d). In the derivation of the Type1 relative clause, the complement NP *uomo* of the internal head first merges with the wh-pronoun. Then, the structure of (90) is as follows.[43]

(91)   a.   * [D^0 [$_{CP}$ NP$_i$ [$_{DP}$ [**WH** t_i]]   [C^0 [$_{IP}$ … t_{DP} …]]]]

    b.   [D^0 [$_{CP}$ NP$_i$ [$_{DP}$ [$\varnothing_{WH}$ t_i]]   [**THAT** [$_{IP}$ … t_{DP} …]]]]

    c.   [D^0 [$_{CP}$ NP$_i$ [$_{PP}$ [**P** [**WH** t_i]]] [C^0 [$_{IP}$ … t_{PP} …]]]]

    d. * [D^0 [$_{CP}$ NP$_i$ [$_{PP}$ [P [$\varnothing_{WH}$ t_i]]] [C^0 [$_{IP}$ … t_{PP} …]]]]

The wh-pronoun does not occur when DP raises to the Spec of CP as shown in (91a,b). The wh-pronoun occurs when PP raises to the Spec of CP as shown in (91c,d).

    I claim that the external D^0 plays a crucial role in the restriction on the occurrence of the wh-pronoun in Type1 relative clauses. In the case of minimal pied-piping, the wh-phrase is a complement of PP which is in the Spec of the CP. The impossibility of deleting the wh-pronoun in (91c,d), contrary to (91a,b), is accounted for by claiming that the wh-pronoun can be deleted only if it is c-commanded by the external D^0 in its Minimal Domain. In (91a,b), the wh-phrase in the Spec of CP falls in the Minimal Domain of the external D^0, whereas, in (91c,d), the wh-phrase is outside the Minimal Domain of the external D^0 but in the Minimal Domain of the pied-piped preposition.[44] The licensing condition on the wh-pronouns is stated in (92).

(92)   Wh-pronoun must delete iff it is c-commanded by an external D^0 in its Minimal Domain.[45]

    Notice that the distribution of wh-pronouns and relative particles in Type1 relative clauses is constrained by the Doubly Filled Comp Filter in (15).

---

[43] The distribution of the relative pronoun presented here is not accounted for by the ECP.

(i)   a.   *[D^0 [$_{CP}$ NP$_i$ [$_{DP}$ [WH t_i]]   [C^0 [$_{IP}$ … t_{DP} …]]]]]]

    b.   [D^0 [$_{CP}$ NP$_i$ [$_{DP}$ [t_i]]   [C^0 [$_{IP}$ … t_{DP} …]]]]]]

    c.   [D^0 [$_{CP}$ NP$_i$ [$_{PP}$ [P [WH t_i]]] [C^0 [$_{IP}$ … t_{PP} …]]]]]]

    d.   *[D^0 [$_{CP}$ NP$_i$ [$_{PP}$ [P [t_i]]] [C^0 [$_{IP}$ … t_{PP} …]]]]]]

  The contrast between (ic) and (id) could be reduced to the ECP under the assumption that in (ic) the wh-pronoun is able to properly govern the trace of its complement NP, whereas in (id) nothing can govern the trace. Consider, however, the example in (ia). Although the wh-pronoun in (ia) is able to properly govern the trace of its complement NP, the configuration is illegitimate.

[44] Akira Watanabe (personal communication) pointed out that in the configuration in (91a,b) there arises another analysis that the head NP is in-situ and the wh-pronoun deletes because it is morpho-phonologically adjacent to the external D^0. In the case of pied-piping in (91c,d), the wh-pronoun does not delete because it is not adjacent to the external D^0.

  Under the analysis, it must be accounted for why the head NP is in-situ in (91b) while it must be raised in (91c). We might be able to argue that the head NP is licensed in-situ in (91b) whereas it is not licensed in (91c). However, we cannot in turn explain why the derivation is not allowed, when the head NP raises and the wh-pronoun does not delete, as illustrated in (91a).

[45] This condition would reflect the indeclinable property of the wh-pronoun, which might be just a morphological reflex of the feature [+R(elative)].

(93) a. $[D^0 [_{CP} NP_i [_{DP} [\varnothing_{WH}$ $t_i]]$ $[THAT [_{IP} \ldots t_{DP} \ldots]]]]]$
  b. * $[D^0 [_{CP} NP_i [_{PP} [P [WH$ $t_i]]]$ $[THAT [_{IP} \ldots t_{PP} \ldots]]]]]$

As shown in (93b), the relative particle cannot occur in the case of pied-piping in the Type1 relative clause. In addition, since Italian and French have the Empty COMP Filter in (17), the occurrence of the relative particle in (93a) is obligatory in these languages, while it is optional in English and Norwegian.

4.1.2. Licensing Condition on D-pronouns

   D-pronouns are Type2 relativizers, with which the relative clause shows the properties of Type2. An example of the Type2 relative clause in German is shown below.

(94) a. * $[_{DP}$ ein $[_{NP}$ Buch], $[_{CP}$ $[_{DP} \varnothing$ $[_{NP} \text{N}]]$ C^0 ich lessen soll]]
  b. $[_{DP}$ ein $[_{NP}$ Buch], $[_{CP}$ $[_{DP} \textbf{\textit{das}} [_{NP} \text{N}]]$ C^0 ich lessen soll]]
  c. $[_{DP}$ der $[_{NP}$ Mann], $[_{CP} [_{PP} \textbf{\textit{mit}} [_{DP} \textbf{\textit{dem}} [_{NP} \text{N}]]]$ C^0 ich gesprochen habe]]

In the Type2 relative clause, the relative pronoun is not allowed to be deleted as in (94a) but can occur without the pied-piped constituent as shown in (94b). We have considered that the d-pronoun, which is not defective, must undergo Matching with the external D^0. Then, the agreement relation between the external D^0 and the internal D^0 forces the deletion of the internal head NP, which is the complement of the internal D^0, under identity. The licensing condition on d-pronouns is stated as in (95).

(95) D-pronoun must have a morphological realization of agreement with an external D^0.

It follows that the d-pronouns cannot delete. Because the Type2 relativizer cannot delete, the relative particle cannot occur in Type2 relatives otherwise the Doubly Filled COMP Filter in (15) does not hold.[46] The fact that German does not have a relative particle is accounted for by the condition (95) and the filter (15).

4.1.3. Licensing Condition on Complex Pronouns

   The relative clauses with complex pronouns show either the properties of Type1 or those of Type2. They can be deleted or they can be bare. The French example is repeated in (96).

(96) a. Le garçon $\varnothing$ *que*   tu as invité est arrivé.
  b. (*) Le garçon *lequel*   tu as invité est arrivé.
  c. Le garçon *auquel*   tu as parlé est mon frère.

As we have discussed in section 2, the relative clauses with complex-pronouns can be regarded as a conflation of the Type1 relative clauses as illustrated in (97) and as Type2 relative clauses as illustrated in (98).

(97) a. $[_{DP} D^0 [_{CP} NP_i$ $[_{DP} \varnothing_{D+WH}$ $t_i]$ $[\textbf{THAT} [_{IP} \ldots t_{DP} \ldots]]]]]]]$
  b. * $[_{DP} D^0 [_{CP} NP_i$ $[_{DP} \textbf{D+WH} t_i]$ $[C^0 [_{IP} \ldots t_{DP} \ldots]]]]]]]$
  c. $[_{DP} D^0 [_{CP} NP_i$ $[_{PP} [\textbf{P} [\textbf{D+WH} t_i]]]$ $[C^0 [_{IP} \ldots t_{PP} \ldots]]]]]]]$

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[46] The Minimal Domain does not restrict the distance of the agreement. It is worth pointing out, however, that this agreement is not in the form of an unbounded relation. We will consider a kind of the locality constraint on Agree in the current Minimalist framework in section 4.3.2.

(98) a. * $[_{DP}$ D^0 $[_{NP}$ N$]$ $[_{CP}$ $[_{DP}$ $\varnothing_{D+WH}$ ~~$[_{NP}$ N$]$~~$]$ $[\textbf{THAT}$ $[_{IP}$ … t$_{DP}$ …$]]]]]]]$

    b. $[_{DP}$ D^0 $[_{NP}$ N$]$ $[_{CP}$ $[_{DP}$ **D+WH** ~~$[_{NP}$ N$]$~~$]$ $[$ C^0 $[_{IP}$ … t$_{DP}$ …$]]]]]]]$

    c. $[_{DP}$ D^0 $[_{NP}$ N$]$ $[_{CP}$ $[_{PP}$ **P** $[$**D+WH** ~~$[_{NP}$ N$]$~~$]]$ $[$ C^0 $[_{IP}$ … t$_{PP}$ …$]]]]]]]$

I claim that the complex pronoun function either as the Type1 relativizer or as the Type2 relativizer. The complex pronouns in Type1 relative clauses must delete as illustrated in (97b), but must not delete in (97c), where the relative DP is not in the Minimal Domain of the external D^0. On the other hand, those in Type2 relative clauses must not delete because they must be morphologically realized. It is not necessary to state the licensing condition specific to the complex pronoun because it satisfies either the licensing conditions in (92) or the licensing condition in (95).

4.3.   Heavy Pied-piping: Condition on the Extraction of the Head

4.3.1. Heavy Pied-piping in Type1 Relative Clauses

In section 2, we have observed the distinction between the two types of the relative clauses with respect to the size of pied-piping. In the hybrid analysis presented here, Type1 relative clauses are derived via Head-raising. In the case of pied-piping, in Type1 relatives, a head NP must be extracted from a pied-piped constituent to establish the relation with external D^0. The restriction that only minimal pied-piping is allowed in Type1 relative clauses indicates that the raising of the complement NP of the internal head contained in PP in the Spec of TopP is possible, while the raising of the complement NP of the internal head contained in (DP of) DP, VP, or TP is impossible as illustrated in (99).

(99)
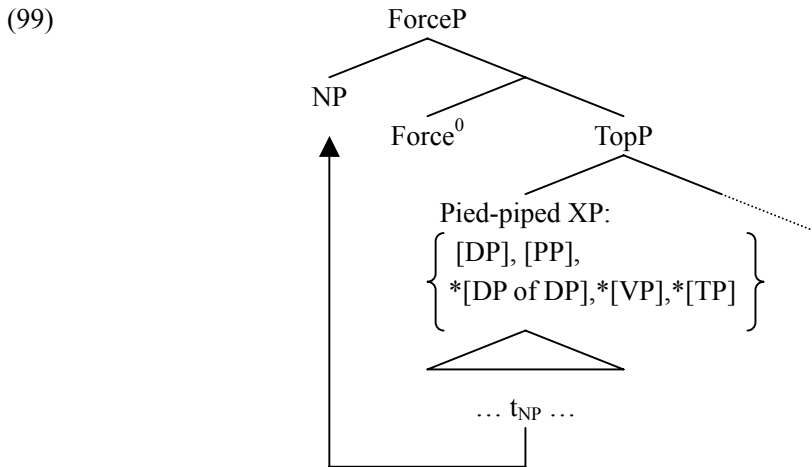
Now we can answer the question why the raising of the complement NP of the internal head from inside these heavy phrases is impossible. [DP] and [PP] in (99) are extended projections of the head NP in the sense of Grimshaw (1991), whereas the outer DP of the [DP of DP], [VP], and [TP] in (99) are not qualified as an immediate extended projection of the internal head NP. The heads of the DP (of DP), VP, and TP are not related by any thematic or checking relation with the head NP. Here I claim that, when the outer extended projection exists, the syntactic relation between the internal head NP and the external D^0 is not sufficient to establish the dependency. Recall that the head NP raises for the feature [+N] to be checked by the matrix D^0. The feature [+N] is required to be checked at least inside the immediate external extended projection, and the requirement is satisfied by raising of the head noun only if the pied-piped phrase is [DP] or [PP], which are the immediate extended projection of the head. Thus, the heavy pied-piping is not allowed in Type1 relative clauses, in which the raising of the complement NP of the internal head from the pied-piped constituent is indispensable.
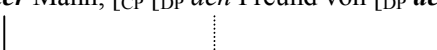
4.3.2. Heavy Pied-piping in Type2 Relative Clauses

In contrast to Type1 relative clauses, since there is no need for further raising of the complement NP of the internal head, the mechanism which blocks further raising of the NP presented in section 4.3.1 does not apply in the derivation of the Type2 relative clauses. Therefore, no restriction is imposed on the Type2 relatives with respect to the size of pied-piping.[47]

It is worth pointing out that there is an additional restriction on pied-piping in German. The German relative clauses, which are Type2, allow heavy pied-piping except for the case of 'DP *von* DP.' The example of German pied-piping is repeated in (100).

(100) a. Der Mann, [***mit dem*** ich gesprochen habe], ist mein Freund.   *(German)*
            the man with whom I spoken have is my friend
      b. Das ist der Mann, [***dessen*** Vater ich kenne.
            that is the man whose father I know]
      c. Das ist der Mann, [***mit dessen Wagen*** ich gefahren bin].
            that is the man with whose car I driven is
      d. * Das ist der Mann, [***den Freund von dem*** er kannte].
            that is the man the friend of whom he knew
      e. Die Lotte ist ein Mädchen, [***mit dem 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

How is the impossibility of pied-piping in (4-21d) accounted for? The configuration in (4-21d) is shown schematically in (4-22).

(101)   * [$_{DP}$ ***der*** Mann, [$_{CP}$ [$_{DP}$ *den* Freund von [$_{DP}$ ***dem***]]$_i$ er t_i kannte]]

In the Type2 relative clause, the agreement between the d-pronoun and the external D^0 is necessary for Matching. The configuration in (101) can be regarded as an instance of defective intervention, which is caused by the definiteness feature of the intervening d-pronoun *den*.

4.4.   *Infinitival Relative Clauses*

I will show one consequence of the new hybrid analysis presented above with respect to the infinitival relative clauses (IRCs). Some properties of the IRCs in Germanic and Romance languages can be accounted for by the analysis. IRCs in English have a peculiar syntactic property that is not observed in finite relative clauses. The relative pronouns cannot appear unless they are accompanied by a pied-piped element as can be seen below.

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[47] However, pied-piping in Type2 relative clauses is not completely unbounded. In section2, we observed that pied-piping of an infinitival clause without an overt subject is possible whereas that of an infinitival clause with an overt subject and of finite clause are impossible even in Type2 relative clauses. If we adopt Wurmbrand's (2001) analysis that an infinitival marker, such as *to* in English, occupies the position of V^0 with a verb, we can consider the restriction on heavy pied-piping as follows:
(i)   Pied-piping of a constituent larger than a smallest *v*P that involves the relative pronoun is
         impossible.
Within the current Minimalist framework, this (i) can be reduced to the restriction that Agree relation between a relative d-pronoun and an external D^0 across Phase is impossible (cf. Chomsky's (2004, 2006) Agree and Phase Impenetrability Condition).

(102) a.   John found a topic (*_which_) to work on.
       b.   John found a topic _on which_ to work.

Chomsky and Lasnik (1977) formulate a filter that is specific to English infinitival clauses and claim that the occurrence of the overt relative pronoun is not allowed because it is ruled out by this filter:

(103) *[$_\alpha$NP to VP], unless α is adjacent to and in the domain of [-N]   (Chomsky and Lasnik (1977: 460))

   However, this seemingly unique property of IRCs in English can be related to the restriction on Type1 relative clauses we have observed so far. In French IRCs and Italian IRCs, the restriction on the bare relative pronouns also applies.

(104) a.   J'ai trouvé un livre (*_lequel_) à lire.   _(French)_
              '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))
(105) a.   Ho dei calcoli (*_cui_) da fare.   _(Italian)_
              'I've some calculations to do.'
       b.   Aveva portato un cacciavite _con cui_ aprirli.
              'He had brought a screwdriver with which to open them.'   (Maiden and Robustelli (2000: 141-142))

As we have discussed in section 4.2, such a restriction on the occurrence of the bare relative pronoun is not construction/language-specific but follows from a licensing condition on the Type1 relativizer in (92), which states that the bare Type1 relativizer must delete.
   Moreover, the size of pied-piping in IRCs is strongly restricted and only minimal pied-piping is allowed as shown in (106).

(106) 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))

As we have discussed in section 4.3, the heavy pied-piping is impossible when the relative clause is derived via Head-raising. The fact that the licensing condition on the Type1 relativizer holds and heavy pied-piping is impossible in IRCs indicates that IRCs are Type1 relative clauses across languages.[48]
   Next, let us consider the IRCs in German, where only d-pronoun is employed as a relativizer, as exemplified below.

(107) a.   Ich fand ein Buch zu lesen.
              I found a book to read
              'I found a book to read.'
       b.   * Ich fand ein Buch _das_ zu lesen.
              I found a book which to read
              'I found a book to read.'

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[48] Here arises a question why IRCs are generally Type1 relative clauses. In OE, _to_-infinitive started out as a PP with the dative ending –_enne_ appearing on verb. We could argue that the IRCs are historically in the closer position to the external head, which is the complement position of the _n_P.

    c.   * Köln ist eine Stadt, in **der** zu wohnen.

          Köln is a city in which to live

          'Köln is a city in which to live.'

In German, IRCs do not allow the occurrence of the d-pronoun even in the minimal pied-piping. The reason why German IRCs do not allow the occurrence of the d-pronouns is that the d-pronoun employed in German is to be the Type2 relativizer.[49]

5.   Conclusion

I have considered the syntax of relative constructions in English, French, Italian, Norwegian, and German within the framework of Chomsky's (1993, 1995) Minimalist Program. I have proposed a new hybrid analysis. Based on the cross-linguistic data on the reconstruction effects, I have claimed that the Type1 relative clauses have a complementation structure and are derived via Head-raising, whereas Type2 relative clauses have an adjunction structure and undergo Matching. In addition, I have also claimed that there is a deleted internal head in the Matching relative clauses, with regard to the reconstruction effects.

I have also proposed the analysis of the internal structure of the relativizers and claimed that the derivation and structure of relative clauses in Germanic and Romance languages are determined by the properties of the relativizer employed in a particular language. When the wh-pronoun is employed as a relativizer, the relative clause must be derived via Head-raising and must have the complementation structure because of the defective D^0 of the wh-pronoun. When the d-pronoun is employed, the relative clause must be adjoined to the nP of the external head noun phrase and undergoes agreement between external D^0 and internal D^0 because of the non-defective D^0 of the d-pronoun.

Furthermore, I have considered the licensing condition on these relativizers. Wh-pronouns are the relativizer which must delete because of their indeclinable and defective properties. D-pronouns are the relativizer which must not delete because they must have the morphological realization of the Matching.

The properties of the relative constructions in Germanic and Romance languages, with respect to the occurrence of bare relative pronouns, the size of pied-piping, and the reconstruction effects are accounted uniformly for by the analysis presented in this paper. The licensing conditions on Type1 relativizers and Type2 relativizers explain why there is a restriction on the occurrence of the bare relative pronouns. The derivation and the structure of the Type1 relative clauses and Type2 relative clauses, which are determined by the properties of the given relativizer, explain why there is a restriction on Heavy pied-piping. With respect to the reconstruction effects, the presence and absence of condition C effect in relative clauses is also accounted for by the two types of derivation and the mechanism Vehicle Change. The type of the relativizer employed is the fundamental factor to determine the properties of the relative constructions in Germanic and Romance languages.

There are still some remaining problems concerning the properties of relative clauses. First, we must further consider why reconstruction in English *wh*-relatives, which are Type2, is totally impossible, as noted in footnote 30, while the reconstruction in German relative clauses, which are also Type2, is possible, except for the case of condition C. Second, the syntax of the non-restrictive relative clauses has not been considered in detail in this paper. We have observed that, in non-restrictive relatives in French, Italian, and Norwegian, the relative particle can occur as a relativizer. This suggests that, in these languages, there is a possibility of deriving the non-restrictive relatives via Head-raising. Then, the question is how the absence of the reconstruction effect in the non-restrictive relative clauses is properly accounted for. In addition, when the Head-raising non-restrictive relative clause and the Matching restrictive relative clause are stacked, my analysis predicts that the Head-raising

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[49] The question is why the IRC in (107a) is ok in German. Suppose that the Type1 relativizer is employed in German but it is deleted in (107a). Then, we expect that IRCs with the overt Type1 relativizer accompanied by a preposition is ok, contrary to the facts. We can say that German employed a phonologically null Type1 relativizer, which can be used only in the infinitival clause. Further research will be needed.

relative clause must precede, even though it is non-restrictive, contrary to the facts. It is worth noticing de Vries (2006b) present the Head-raising analysis of non-restrictive relatives. Finally, I must consider whether the analysis presented here also holds in head-final languages such as Japanese, where the overt relativizers are not available. These questions need further exploration.

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