

On the Structure of English Relative Clauses in the feature-Checking Theory

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1. Introduction

This paper concerns the structure of relative clauses within the Minimalist Theory framework or Feature-Checking Theory (Chomsky 1995). I argue that the Korean relative clauses (RCs) and English RCs are base-generated in [Spec, NP], and that the Korean RCs move syntactically to [Spec, AgrP] occurring between DP and NP while the English ones stay in situ. In both languages, the relative head noun moves to Agr^o from N^o.

The paper consists of 4 sections. Section 1 is Introduction. Section 2 is concerned with the structure of NPs. Section 3 deals with Feature-Checking between Adjective and Head noun. Section 4 is devoted to the account of the structure of RCs in English. Section 5 is Conclusion.

2. The Structure of NPs

Ritter (1988) proposes that the Determiner is split into D (eterminer) and AGR (eement). Her analysis on noun phrases reminds us of the Split-Infl Hypothesis (Pollock 1989) where Infl is divided into two functional categories: Tense and Agreement. Since her analysis the existence and nature of DP-internal functional categories has attracted a lot of attention.

Szabolcsi (1983) observes that in Hungarian possessive constructions, the possessor agrees with the head noun in person and number, and that the agreement markers are the same as those found on the subject of a verb (examples in (1) from Szabolcsi (1983)).

adjectives are specifiers; Jackendoff (1977) suggests that adjectives appear in the specifier positions of lexical categories and Cinque (1992) argues that adjectives are base-generated in the specifier position of functional categories. This thesis adopts Cinque's (1992) argument with respect to the status of pre-nominal adjectives.

3. Feature-Checking between Adjective and Head Noun

3.1. Honorific and Plural Agreement in Noun Phrases

Honorific and number agreement can be observed not only in clauses but also in noun phrases (examples from J.-Y. Yoon 1990).

- | | | |
|--------|--------------------------|-------------------------------|
| (3) a. | Sensayng- <i>nim</i> -uy | eme- <i>nim</i> ²⁾ |
| | teacher-Hon-Gen | mother-Hon |
| | 'teacher's mother' | |
| b. | *Hain-uy | eme- <i>nim</i> |
| | servant-Gen | mother-Hon |

second group proposes that the adjectives are heads (X^0); in Abney (1987) adjectives are assumed to take NPs as their complements, and in Valois (1991) adjectives are taken to adjoin to the head of Number Phrase. The latter position is motivated on the grounds that the adjectives and nouns in Romance and Germanic exhibit rich agreement. But in the case of Korean noun phrases agreement holds with the relative clause as well as pre-nominal adjective. This means that even though the adjective is X^0 and therefore may adjoin to N^0 (or heads), relatives surely cannot be X^0 but must be XP. Given this, we can argue that the adnominal modifiers showing agreement with the head noun are not X^0 but XP and should then appear in the specifier positions. In addition, note that Jackendoff's conception of a specifier is not the standard one so that when he says adjectives are specifiers he saying something quite different from Cinque.

- 2) *Nim* is an honorific marker for noun phrases. This honorific marker *nim* is different from the honorific marker *si* which is attached only to a predicate.

- | | | |
|------|------------------------|-------------------|
| (i) | Apeci- <i>kkese</i> | o-si-n-ta. |
| | Father-Nom+Hon | come-Hon-Prog-Dec |
| | 'Father is coming.' | |
| (ii) | Emeni- <i>kkese</i> | alumtawu-si-ta. |
| | Mother-Nom+Hon | beautiful-Hon-Dec |
| | 'Mother is beautiful.' | |

(Lit.) the servant's mother'

- c. *Sonnim-tul-uy* *tochakkwangkyeng-tul*
 guest-Pl-Gen arrival scene-Pl
 'the scenes of the guests' arrival'
- d. * *Han sonnim-uy* *tochakkwangkyeng-tul*
 one guest-Gen arrival scene-Pl
 ('the scenes of one guest's arrival')

According to J.-Y. Yoon (1990), in (3) the occurrence of the honorific marker *nim* between the genitive NP and its head NP indicates that there is honorific agreement in noun phrases. Since in (3a) the genitive noun *sensayngnim* 'teacher' is socially superior to the speaker, the head noun contains the honorific marker *nim*. By contrast, since in (3b) the genitive NP *hain* 'servant' is socially inferior to the speaker, the usage of the honorific marker *nim* results in a violation of honorific agreement and therefore an ungrammatical derivation. As the examples in (3c-d) reveal, number agreement is also needed in noun phrases, just as in clauses. In (3c) both the genitive DP and its head N are plural and they are plural-marked, as expected. But in (3d) the genitive NP is singular and the head noun contains the plural marker, violating number agreement.

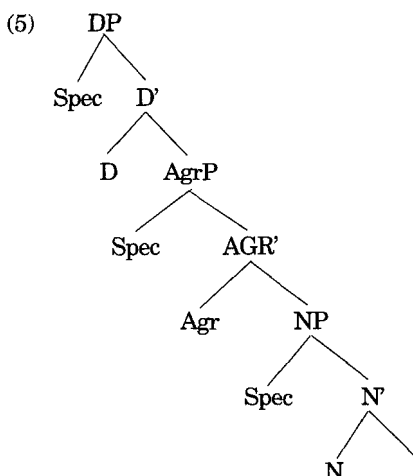
Furthermore, we can observe that there is honorific agreement between the pre-modifying adjective and its head noun. The honorific marker is optional in the pre-nominal modifying adjective, as in (4) below. I reproduce the examples in (4) from J.-Y. Yoon (1990)

- (4) a. [_{DP}Ku [_{AP}pemha-(si)-n] [_{NP}sensayng-nim-i]] o-si-ess-ta.
 the strict-Hon-AM teacher-Hon-Nom come-Hon-Pst-Dec
 'The strict teacher came.'
- b. * [_{DP}pku [_{AP}pemha-si-n] [_{NP}chinkwu-nim-i]] o-si-ess-ta.
 the strict-Hon-AM friend-Hon-Nom come-Hon-Pst-Dec
 'The strict friend came.'
- c. * [_{DP}pku [_{AP}pemha-si-n] [NP chinkwu-ka]] o-ass-ta.
 the strict-Hon-AM friend-Nom come-Pst-Dec
 'The strict friend came.'

- d. *_[DPku] [_{APemha-n}] [_{NP}chinkwu-*nim*]
 the strict-AM friend-Hon
 'The strict friend'
- e. _[DPku] [_{APemha-n}] [_{NP}chinkwu-ka] o-ass-ta.
 the strict-AM friend-Nom come-Pst-Dec
 'The strict friend came.'

In (4) the occurrence of the honorific marker *si* on an adjective and of *nim* on the head noun shows that there is honorific agreement between a pre-nominal modifying adjective and its head noun. The honorific marker is attached to the adjective only when the adjective modifies a head noun whose referent is superior to the speaker.

Given that there is agreement in Korean noun phrases, it is natural to suppose that there is a functional category called Agr(eement) Phrase in DP. Since the determiner appears before the whole Adj+NP, as seen in (4), the AgrP should be located immediately after the determiner. I therefore suppose that the AgrP in DP appears between D⁰ and N⁰, as illustrated in (5) below.



3.2. Feature-Checking between Adjective and Head Noun

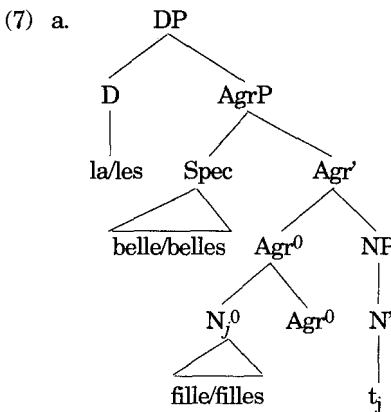
Given the structure for Korean noun phrases as in (5), I propose that there is a functional category called AgrP (within DP) mediating the agreement

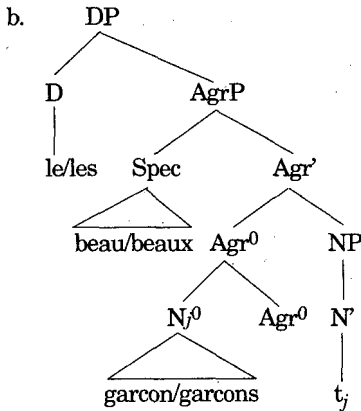
features between pre-nominal adjectives and their head noun; the features of AgrP require the merger of a pre-nominal adjective into the specifier position of AgrP, and the head noun in N^0 moves to the Agr^0 position to check its features against the corresponding features occurring in [Spec,AgrP] (Y.-K. Kim, 1997).

This analysis can be applied to English-type languages such as French showing an obvious agreement between a pre-nominal adjective and its head noun in gender and number.

- (6) a. la belle fille/ les belles filles
 the pretty girl/the pretty girls
 b. le beau garcong/les beaux garcons
 the handsome boy/the handsome boys

The positing of the functional category AgrP between DP and NP makes it possible to have agreement in number and gender for French (and probably English also) between the adjective in [Spec,AgrP] and the head noun adjoined to Agr^0 . Then (6) will have (7) as its structure.



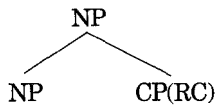


4. The Structure of Relative Clauses in English

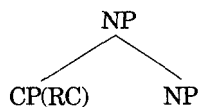
4.1. Previous Analyses

In the Principles and Parameters framework (Chomsky and Lasnik 1993), given the standard version of X-bar theory (Chomsky 1986a,b), adjunction is used to account for the structure of RCs, which are freely iterated. Relative clauses are assumed to be adjoined to the category that they modify. The adjunct analysis allows multiple adjunction of the modifiers to the constituent that they modify. In a (Head-initial) language like English or Italian where relative clauses linearly follow the nominal constituent they modify, the standard adjunct analysis makes use of the configuration of rightward adjunction. On the other hand, in (Head-final) languages like Korean and Japanese where relative clauses precede the nominal element that they modify, leftward adjunction is used.

(8) a. In the case of Head-initial languages

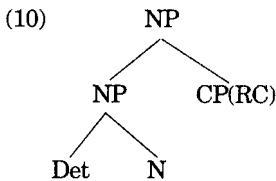
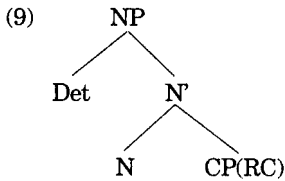


b. In the case of Head-final languages

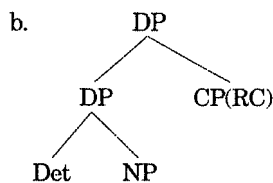
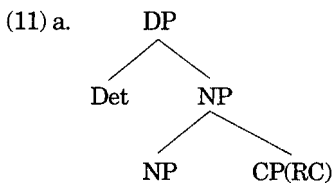


The structures in (8) of course do not show the difference between the Restrictive Relative Clauses (RRCs) and the Non-restrictive Relative Clauses (NRCs).

Furthermore, Stockwell, Schachter and Partee (1973) and Partee (1975) distinguish between the RRC and NRC, and argue that in the case of the RRC the noun and relative clause make up a constituent and thus the RRC is a sister of N, as shown in (9); in the case of the NRC, the head noun and the determiner make up a constituent and the NRC is adjoined to NP, as illustrated in (10) (S is changed to CP for our purposes):



Based on the DP-hypothesis, Manzini (1994) advances a similar idea. RRCs are taken to be right-adjoined to the head NP as given in (11a) while NRCs are right-adjoined to DP instead as in (11b). This analysis has the advantage of explaining the difference in interpretation between RRCs and NRCs without LF movement of NRCs. In the case of RRCs both NP and CP occur below the scope of the D head. In the case of NRCs the relative CP may appear above the scope of the D head, as desired.



The above three adjunction analyses assume that the head noun and relative clause CP are base-generated separately.

The traditional adjunction analyses of the structure of the modifiers is, however, challenged by Cinque (1993, 1995), who argues that the free iteration of the modifiers is actually limited and constrained by some rigid ordering principles. He claims that different types of adjective occupy different positions. Based on the following examples in (12), Bianchi (1995) suggests that the thematic adjective *Italiano* is obligatorily postnominal whereas the adjective *mera* is pre-nominal.

- (12) a. *L'invasione Italiana dell'Albania*
 the Italian invasion of Albania
 b. **L'italiana invasione dell'Albania*
 c. *Gianni ha fatto una mera proposta*
 Gianni made a mere proposal
 d. **Gianni ha fatto una proposta mera*

Accordingly, instead of multiple adjunction of modifiers to one category, Cinque (1993, 1995) proposes that only one modifier can occur to the left of every head position. In other words, each modifier appears in a different position.

Another long-standing criticism alternative to the adjunction analyses of the structure of RCs can be found in Brame (1976) which argues for a raising analysis³⁾ in which the head noun of the RRC originates inside the relative clause and raises to its surface position. His motivation can be found in the possibility of relative clause constructions where part of an idiom occurs as the head noun and the rest of the idiom appears inside the relative clause. In this analysis the head noun is base-generated as a piece of the idiom inside the relative clause and raises into its surface position by a transformation, as illustrated in (13) (example from McCawley (1981)).

3) This line of argumentation is put forward by Schachter (1973), Vergnaud (1975) and Carlson (1977).

- (13) The [[*aspersions*]_i; [that Bill *cast* [*e*]_i on my character]] are unfounded.

Brame (1976) argues that the raising analysis applies to all restrictive relative clauses. This analysis gains a piece of support from the following example (from McCawley (1981)).

- (14) The picture of himself that John found hanging in the Post Office irritated Mary.

The structural relationship between a reflexive himself and its antecedent John is possible only when the picture of himself is reconstructed inside the relative clause. The LF structure for (24) which is reconstructed will then be (25) below.

- (15) X_i that John found [the picture of himself]_i hanging in the Post Office irritated Mary.

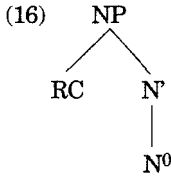
In (15) which reconstructs (puts back) the picture of himself, himself can properly be bound by John excluding the possibility of its being bound by Mary.

The line of argument against adjunction analyses gains some support from Larson (1988) who tries to explain an asymmetry in double object constructions. According to him, the possibility of multiple branching under X' is excluded and the leftmost goal argument appears to asymmetrically c-command the theme argument. This analysis is made possible by assuming the VP shell representation of multiple complements. Since the standard formulation of X-bar theory (in the sense of Chomsky (1986a,b)), which allows right-adjunction, does not provide this kind of asymmetric structure, many authors propose to revise the standard X-bar theory.

4.2. The Structure of RCs in English

Along the lines of Kayne (1994) and Larson (1988), I argue that in the

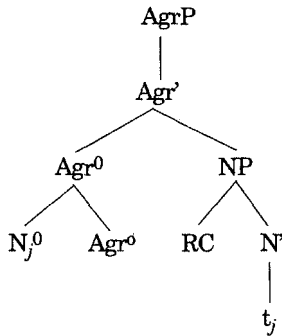
minimalist theory, the RCs in both English and Korean are merged into [Spec, NP] with their head N^0 , as illustrated in (16):



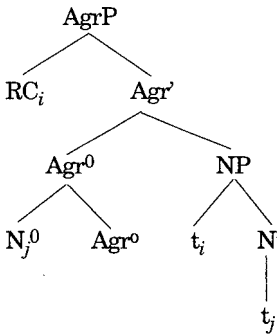
In the case of English, the RC is merged into [Spec, NP], and the head noun itself moves to the next head Agr^0 , resulting in the word order: [Noun + RC], as in (17a) below. Remember that the adjective is merged into [Spec, AgrP], and that there is an agreement feature-checking between the adjective and its head noun, which requires the head noun to raise to Agr^0 .

On the other hand, in the case of Korean, the RC which is base-generated into [Spec, NP] by 'Merge,' with its head noun moving to Agr^0 , moves syntactically to [Spec, AgrP], resulting in the word order: [RC + Noun], as shown in the following structure in (17b):

(17) a. In the case of English



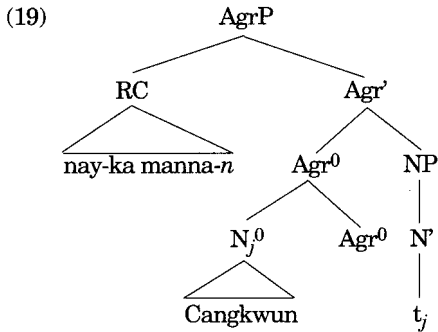
b. In the case of Korean



A question arises with the above structures: Why does not the RC in English move to [Spec, AgrP] syntactically? I assume that in English-type languages there are visible and interpretable relative features in the RC, but not in Korean-type languages. Here I assume that the RCs in English-type languages have interpretable relative features such as 'which,' 'who(m),' 'whose,' etc. for English and 'que,' 'qui,' etc. for French. This means that the English-type RCs have [+interpretable] relative feature whereas Korean-type RCs have [-interpretable] relative feature which is the same as the Adnominal Marker 'n(un)'. It is useful to note that [+interpretable] features need not be checked before the Spell-Out (or in syntax) while [-interpretable] ones should be checked and erased before the Spell-Out.

Let us turn to the case of a Korean relative clause and its structure, as illustrated in (18) and (19), respectively.

- (18) [_{RC}nay-ka manna-n] cangkwn
 I-Nom serve-AM general
 '(the) general whom I met'



There is a [-interpretable] relative feature in the RC and therefore should be a syntactic feature-checking procedure between the RC and its head noun, which requires the movement of the whole RC into [Spec, AgrP], as shown in (19) above.

Now look at the English counterpart: 'the general whom I met'. I assume that in English there is a [+interpretable] relative feature 'whom' which need not be checked and erased before the Spell-Out. This is a big difference between Korean and English with respect to the relative clauses. In Korean-type languages, the RC does not have its own interpretable relative features.

- (20) a. [_{RC} nay-ka mosi-n] cangkwn
 I-Nom serve-AM general
 'the general whom I had served'
- b. *[[_{RC} nay-ka mosi] saram / nuwkwu,] cangkwn
 I-Nom serve person / whom general
 'the general whom I had served'

In contrast, in English-type languages, the RC is merged into [Spec, NP] with its [+interpretable] relative feature, and therefore needs not be syntactically moved to [Spec, AgrP] for the feature-checking with their head noun adjoined to Agr⁰.

The Korean AM marker 'n(un)' is not an independent relative structure indicator telling us that the preceding sentence is a relative clause. It is also used as an adjective marker, as shown in (4d). It tells us not whether the

modifier is a relative structure or an pre-nominal adjective but just that the preceding structure is an adnominal modifier.

On the other hand, the English relative marker 'who(m),' 'which,' etc. are used to tell us that the following structure is not an adjective modifier but a relative clause. This is contrasted by the fact that the Korean RCs do not have such unique relative features as the English ones.

5. Conclusion

To sum up, adjectives in both English and Korean-type languages are base-generated in [Spec, AgrP] by 'Merge,' and check their own features by the corresponding ones of the head noun adjoined to Agr⁰. In the case of RCs, relative clauses are merged into [Spec, NP] in both Korean and English. The two languages are the same in that the RCs have their features checked by the corresponding ones of the head noun (through Spec-Head agreement procedure) which is raised to Agr⁰ from N⁰. The difference between English and Korean with respect to the RCs lies in the relative feature checking procedure: the English RCs remain in situ in [Spec, NP] until the Spell-Out, resulting in the word order [head noun + relative clause]; in contrast, Korean RCs move to [Spec, AgrP] to check their uninterpretable relative feature with their head noun adjoined to Agr⁰, and therefore have the word order [RC + Head Noun]. Note that English RCs have interpretable relative features. This difference leads the two languages to have the different word order with respect to the relative clauses.

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