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A Parametric Syntax of Nominal Modification: A Case Study of English and Japanese

Koji Hoshi

1 Introduction

Taking up Fukui and Takano's (2000) recent treatment of nominal modification as a point of departure in this paper, we will point out some potential problems with their analysis while recognizing the overall validity of their framework. Then, as a possible solution, we will seek a dialectic combination of Fukui and Takano (ibid.) and the Kaynean analyses of nominal modification (Kayne 1994, Bianchi 1999, 2000). Although Fukui and Takano (ibid.) put forth their analysis as an alternative, it will be shown that the essential ideas behind the Kaynean analyses are in fact compatible with their overall theoretical framework. In addition, theoretical and empirical implications of our proposal will be discussed from a standpoint of comparative syntax. It will be claimed that various aspects of differences of nominal modification between English and Japanese are to be derived from a single "parametric" difference between the two languages basically along the lines of Fukui (1986, 1988, 1995): English possesses the (feature-checking/agreement-inducing) functional category D while Japanese lacks it.

This paper is structured as follows. In Section 2, we will briefly review Fukui and Takano's (2000) analysis of nominal modification and point out some potential problems wtih it. Next, in Section 3, a dialectic analysis of nominal modification will be proposed, incorporating virtues of the Kaynean analyses of nominal modification (Kayne 1994, Bianchi 1999, 2000). Section 4 will conclude this paper.

2 *Fukui and Takano's (2000) Analysis of Nominal Modification*

2.1. Fukui and Takano's (1998) Theory of Phrase Structure and Linear Order

Under the assumption that there is no head parameter, Takano (1996) puts forth a theory of phrase structure and linear order as an alternative to Kayne's (1994) LCA-based theory, while maintaining the latter's insight that the linear order of terminal symbols reflects the hierarchical asymmetrical relations among non-terminal symbols (see Takano (ibid.), Fukui and Takano (1998), and Fukui and Takano (2000) for detailed discussion of conceptual and empirical problems of Kayne's LCA-based theory).[1] Fukui and Takano (1998) develop and elaborate on the theory of phrase structure and linear order proposed by Takano (ibid.) a step further within their major hypothesis of the Symmetry of Derivation:

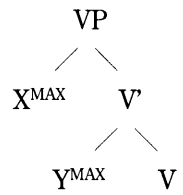
(1) *The Symmetry of Derivation*
Computations in the overt (pre-Spell-Out) component and computations in the phonological component are symmetric.
(=Fukui and Takano (1998: 36) (7))

Computations in the overt component and those in the phonological component are symmetric in that the latter component has an operation called *Linearizaton* which essentially does the reverse of the computation N (umeration) ---->Spell-Out (i.e., *Merge*). Linearization consists of two basic operations of *Demerge* and *Concatenate*. The former breaks down the syntactic object Σ into smaller pieces and the latter puts them into a linear sequence. Takano (op.cit.: 40) defines the notion of Linearization as follows ($(\Sigma-\alpha)$ indicates the object resulting from detachment of α from the syntactic object Σ):

(2) *Linearization*
Applied to Σ, Demerge yields $\{\alpha, (\Sigma-\alpha)\}$, α an Xmax constituent of Σ, and Concatenate turns $\{\alpha, (\Sigma-\alpha)\}$ into $\alpha+(\Sigma-\alpha)$.

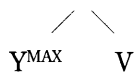
Thus, if Σ looks like the following:

(3) $\Sigma =$



Demerge and Concatenate yields the following object [2)]

(4) $X^{MAX} + V'(=V^{MAX})$

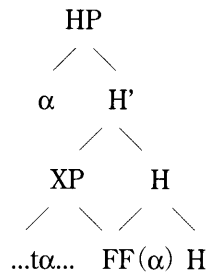


And another application of the two operations to V' (= V^{MAX}) eventually leads to the following linear sequence (see Takano (ibid.) for detailed exposition of the Linearization operation):

(5) $X^{MAX} - Y^{MAX} - V$

In regard to the Head-Comlement/Complement-Head distinction, Fukui and Takano (1998) demonstrate that the relevant distinction derives straightforwardly from the Demerge plus Concatenate approach to linear order if head movement is analyzed as "substitution into Spec" rather than "adjunction to head," departing from Tanako's (1996) analysis of head movement. They implement the "head movement as substitution into Spec" analysis under Chomsky's (1995 a, 1996) revised version of checking theory which assumes that all morphological feature-checking movements (overt or covert) involve movement of the set of formal features, as illustrated in (6) below:

(6)

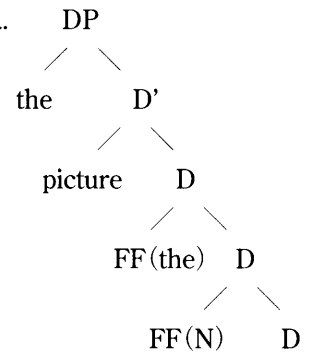


If the relevant head movement is covert, the set of formal features of α (FF

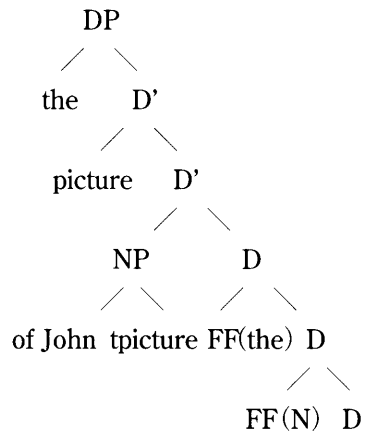
(α)) is attracted by H and is attached to H. But, if it is overt, the whole category α must move to the minimal domain of H (= "generalized pied-piping").[3] Chomsky (1996) speculates that this generalized pied-piping operation is forced by the sensorimotor and phonological component systems since the systems "lack the intelligence to interpret a feature-chain that extends beyond a minimal domain" (p.9). As a result, for convergence, α must be placed within the minimal domain of H to render the feature-chain "shorter" to be appropriately interpreted.

Fukui and Takano (1998) reanalyze Abney's (1987) DP analysis of noun phrases in comformity to the process of Linearization, as illustrated in (7a-b) below:

(7) a.



b.



In (7a-b), the determiner *the* itself is not the functional head D but rather an element that checks features of D. In (7 b), the nominal head *picture* moves to Spec of D (the minimal domain of D) for its feature-chain to be properly interpreted. In the case of (7 a), *picture* does not move any further since its feature-chain is already within the minimal domain of D.

2.2. Their Analysis of Nominal Modification

Fukui and Takano (2000) argue that the theory of phrase structure and linear order proposed by Fukui and Takano (1998) can deduce the various differences concerning relative clauses between English and Japanese in (8) below once we assume the single fundamental parametric property in (9):[4]

(8) (= their (35))

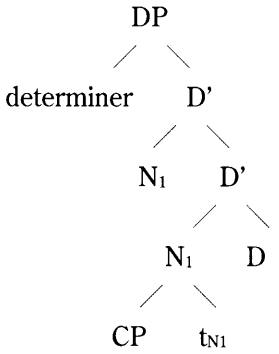
	English	Japanese
order	N-initial	N-final
relative pronoun	present	absent
licensing of relative clause	syntactic: binding (and predication)	semantic: aboutness
gap in relative clause	trace/copy	pro
island effects	present	absent
gapless relative clause	absent	present
relative complementizer	present	absent
internally headed relative	absent	present

(9) The nominal head overtly raises to [Spec, D] in English but stays in place in Japanese. (=their (36))

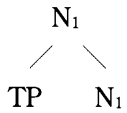
In what follows, we will briefly go over their explanations for some of the properties summarized in (8) to see the validity of their theory (see Fukui and Takano (2000) for detailed accounts for the relevant properties).

They propose the following structures in (10a) and (10b) for the relative constructions in English and Japanese, respectively: [5]

(10) a.



b.



While in the case of English relative structure in (10a), the relative head has been raised to [Spec, D], the relative head of the Japanese relative structure stays in situ as in (10b), in accordance with the parametric property stated in (9). This difference of presence vs. lack of head movement of the relative head to [Spec, D] readily accounts for N-initial vs. N-final word order facts in English and Japanese in (8) above.

This parametric difference in (9) can offer a natural explanation for the second fact in (8): presence vs.absence of relative pronouns. In (10a), the raised relative head N_1 can c-command the relative pronoun at [Spec, CP] of the relative clause, satisfying the licensing condition on the relative pronoun of the following kind:

(11) The relative pronoun must be bound by the relative head.
(=Fukui and Takano's (15))

On the other hand, the structure in (10b) does not meet this relevant requirement given the following definition of c-command (see Fukui and Takano's (17) and (18):

(12) X c-commands Y iff X excludes Y and every element that dominates X dominates Y.
(13) X excludes Y iff no segment of X dominates Y.

In (10b), regardless of whether we take the whole two-segmented category [N_1, N_1] or the lower segment N_1 as the relative head, it does not c-command TP and any element dominated by it, since [N_1, N_1] does not exclude TP.Thus, if the relative clause in Japanese were CP instead of TP, a putative relative pronoun at [Spec, CP] would not be c-commanded by the relative head, violating the licensing condition in (11). This explains why Japanese lacks a relative pronoun in contrast to English.

Further, the TP status of the relative clause in Japanese as in (10b) accounts for the lack of a relative complementizer in Japanese unlike in English.[6]

2.3. Some Potential Problems

Despite the illuminating nature as we partly saw in the preceding subsection, Fukui and Takano's (1999) theory seem to suffer from some potential problems, which are related to the analysis of the English relative structure in (10a) rather than the Japanese one in (10b).[7]

First, their N-to-D overt raising analysis of English noun phrase is clearly incompatible with Longobardi (1994), which argues that while Western Romance languages invole overt N-to-D raising, English and German lacks such an overt movement (instead, they involve such a movement only at LF). Second, their analysis would give rise to a bit unnatural account for a case in which the relative

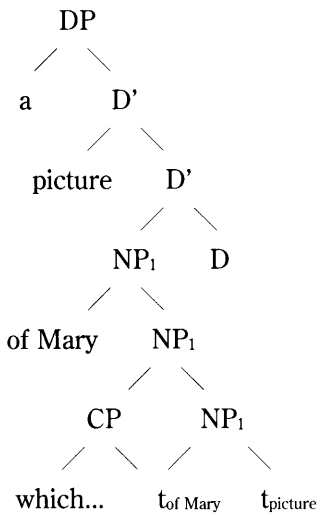
head has a complement as follows:

(14) a. a picture of Mary which John saw yesterday
(=Fukui and Takano (op.cit.: 38, n.12, (i)))

b. a picture of himself which John took yesterday

They analyze (14a) as involving the configuration below:

(15)

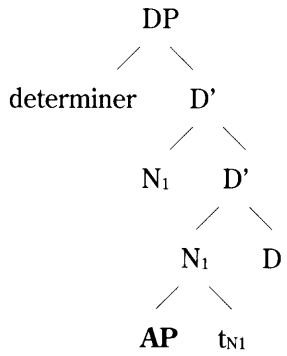


They claim that although *picture* and *of Mary* do not make up a constituent, they both c-command the relative pronoun independently, which is sufficient for the relative pronoun to be identified with *picture of Mary*. Notice that *picture* and *of Mary* form a constituent at the "base" position, which might be taken to ensure such an identification. However, this cannot be possible in principle. Since the relative clause CP is not excluded by [NP_1, NP_1], neither the whole nor the lower NP_1 c-command the relative pronoun at [Spec, CP]. Although their account itself is conceivable, it seems to be a bit unnatural to gurarantee the identification of the relative pronoun in such a case as in (15). In the same vein, they have to resort to the same assumption in question in order to explain the connectivity/reconstruction effect observed in (14b).

Thirdly, their overt N-to-D raising analysis is not clear as to how to accommodate the placement of prenominal adjectives in English as illustrated in (16) below:

(16) a **pretty** picture of Mary which John took yesterday

(17)



Suppose that a prenominal adjective is merged to N_1 just like a relative clause as in (17), the overt N-to-D raising will put the adjective after the nominal N_1 contrary to fact. Thus, such an ajective might have to be merged between the determiner and the raised N_1 to obtain the correct surface order. However, it is not clear how to guarantee the "timing" of the adjective merger into a projection of D in (17).

3 Proposal

In this section, we will see that the Kaynean analyses of nominal modification will provide a solution to the potential problems raised against Fukui and Takano's (2000) analysis of English nominal modification. Further, as a possible solution, we will put forth a dialectic analysis of nominal modification, incorporating virtues of the Kaynean analyses and Fukui and Takano's analysis in a compatible fashion.

3.1. Kaynean Analyses of Nominal Modification: Kayne (1994) and Bianchi (1999, 2000)

Kayne (1994) revives the "head" raising analysis of relative clauses dating back to Vergnaud (1974, 1982) under his theory of antisymmetry of syntax. Borsley (1997) criticizes the "head" raising analysis of relative clauses by Kayne (ibid.), pointing out various theoretical and empirical problems. Bianchi (2000) replies to Borsley (ibid.) based on Bianchi (1999), proposing some modifications to Kayne's original analysis of relative clauses, which overcome most of the

criticisms raised by Borsley (ibid.). In what follows, I will briefly go over Bianchi's (2000) Kaynean analysis of relative clauses.

Bianchi (2000) analyzes relative structures in (18a, b) as involving the following derivations in (19a, b) and (20a, b), respectively:

(18) a. the picture that Bill liked
b. the picture which Bill liked

(19) a. [DP the [CP [DP D_{Rel} picture]$_i$ [CP that Bill liked t_i]]]
(DP "head" raising to [Spec, CP])
b. [DP D_{Rel} + the [CP [DP t picture]$_i$ [CP that Bill liked t_i]]]
(abstract incorporation of the empty relative D^0 to the external D^0)

(20) a. [DP the [CP C^0 [XP [DP which picture]i [X^0 [IP Bill liked t_i]]]]]]
(DP "head" raising to [Spec, XP])
b. [DP the [CP [NP picture] C^0 [XP [DP which t_{NP}]$_i$ [X^0 [IP Bill liked t_i]]]]]]
(NP "head" raising to [Spec, CP])

As for (18a), in which there is no relative pronoun, the relative head DP is raised to [Spec, CP] to satisfy the selectional feature of the topmost D by entering its mininal domain.[8] Ensuing the head raising, the empty relative D_0 undergoes abstract incorporation to the topmost external D_0 in accordance with the following economy principle:

(21) Economy of Representation:
Incorporate a functional head to a host whose feature structure is consistent with its own. (=Bianchi 2000: 126 (8))

In the case of (18b), where a relative pronoun is involved, the relative DP "head" is first raised to the Spec of a functional head X of the Comp system and then the relative NP "head" is raised from within the raised DP to [Spec, CP] to satisfy the selectional property of the topmost external D as in (18a).

Similarly, following Kayne's (1994) analysis of reduced relatives, Bianchi (2000) analyzes the attributive adjectival structures like (22) as involving the following derivation in (23):

(22) the yellow book

(23) [DP the [CP [yellow]$_j$ [C^0[IP book t_j]]]]
(Attributive adjective raising to [Spec, CP])

The attributive adjective such as *yellow* is raised to [Spec, CP] to satisfy the selectional property of the topmost D^0, i.e., [_[+N]] (the property of taking a nominal element) as in the case of relative clause. Crucially, in (23), what is raised to [Spec, CP] is the atrributive adjective rather than the noun phrase.[9] Bianchi-(ibid.: 129, fn.10) assumes that "in reduced relatives the adjectival category is predicated of a nominal projection lower than DP.

Notice that the Kaynean analysis of nominal modification takes the D-CP underlying strucrure, which is allowed to the extent that some "nominal" element comes in the "minimal domain" of the functional category D. Or we might reinterpret this situation as follows. Since it is commonly assumed that the functional category D (uniquely) selects a nominal element as its sister, it might be assumed that the D-CP underlying structure is permitted as long as the CP is somehow "nominalized."[10] Thus, we can regard those elements which move to [Spec, CP] as a kind of "nominalizer" which turns the CP into a nominal element under Spec－head agreement.

3.2. Further Motivation for the Kaynean Analyses

First of all, notice that there is a strange structural difference between (19) and (20) with respect to the Comp system: the former lacks a projection of X and the latter involves such a functional projection. For ease of reference, (19) and (20) are repeated as (24) and (25) below:

(24) a. [DP the [CP [DP D_{Rel} picture]$_i$ [CP that Bill liked t_i]]]
(DP "head" raising to [Spec, CP])
b. [DP D_{Rel} + the [CP [DP t picture]$_i$ [CP that Bill liked t_i]]]
(abstract incorporation of the empty relative $D^0$to the external D^0)

(25) a. [DP the [CP C^0[XP [DP which picture]$_i$ [X^0[IP Bill liked t_i]]]]]]
(DP "head" raising to [Spec, XP])
b. [DP the [CP [NP picture] C^0[XP [DP which t_{NP}]$_i$ [X^0[IP Bill liked t_i]]]]]]
(NP "head" raising to [Spec, CP])

However, nothing seems to prevent us from assuming the same Comp system in both cases. So, let us suppose that (24) in fact involves a projection of X just like (25). The relevant derivation would look like the following:

(26) a. [DP the [CP C^0[XP [DP D_{Rel} picture]$_i$ [X^0[IP Bill liked t_i]]]]]]
(DP "head" raising to [Spec, XP])

b. [DP the [CP [NP picture] C^0[XP [DP D_{Rel} t_{NP}]$_i$ [X^0[IP Bill liked t_i]]]]]]
(NP "head" raising to [Spec, CP])[11]

Given the derivation in (26), not only the *wh*-relative structures but also the *that*-relative structures employ the same Comp system, eliminating a strange asymmetry.

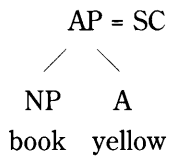
There is a motivation for such a uniform Comp system in not only the relative structures but the reduced relative structure as well. It has been noticed in the literature that the prenominal attributive adjective can only be simplex as in (27) and that the simplex attributive adjective cannot remain postnominal in English as in (28) for some reasons (cf. Abney 1987: 326):[12][13]

(27) a. the [proud] man
b.*the [proud of his son] man
(28) a.*the man [proud]
b. the man [proud of his son]

Now let us push the same line of analysis further to see if we can cover the case of the prenominal attributive structures or reduced relative structures. Suppose the prenominal attributive structures or reduced relative structures involve the same Comp system as in (25) and (26), and further that X_0 takes a small clause (SC) rather than a full IP as its complement. Then, we might provide the following configuration in (30) to (22), which is repeated as (29):

(29) the yellow book
(30) [DP the [CP [yellow]j [C^0[XP [book]j [X^0[SC tj tj]]]]]]
("reduced relative head" raising to [Spec, XP] and attributive adjective raising to [Spec, CP])[14]

For expository purposes, let us assume that the relevant small clause has the following underlying structure (cf. Stowell 1981, 1983, Chomsky 1981):

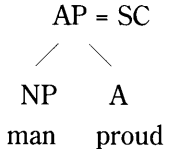
(31)


In (31), the NP *book* is theta-marked by the adjective *yellow*, and the NP is

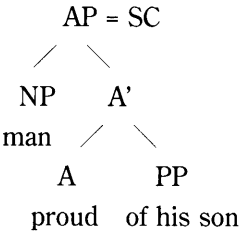
raised to [Spec, XP] and the adjective is raised to [Spec, CP]. Here we are assuming that the "subject" NP of the small clause is first "externalized," followed by the movement of the adjectival predicate. These two overt movement accounts for the contrast between (27a) and (28a).

Then, how do we account for the contrast in (27)? Given our assumptions so far, we could postulate that (27) and (28) involve the following small clauses in (32a) and (32b), respectively:

(32) a.



b.



Note that after the "subject" NP in (32) is moved to [Spec, XP], an A-bar trace/copy is created since the XP projection is part of the Comp system (=A-bar system) (cf.(30)).

In order to derive (27a), potentially there are two possibilities. One is to move the whole small clause [$_{AP}$ t_{man} proud] to [Spec, CP] and the other is to move only the head A *proud* of the small clause to [Spec, CP].[15] However, only the latter option is valid, since the former option violates the strict restriction on A-bar traces with respect to the Proper Binding Condition.[16]

Saito (1986) observes that there is a clear asymmetry between A traces and A-bar traces with respect to the application of the Proper Binding Condition.[17] Look at (33) below:

(33) a. [How likely [t_i to win]]$_j$ is John$_i$ t_j?
b.*[Which picture of t_i]$_j$ does John wonder who$_i$ Mary likes t_j?

While (33a) is acceptable, (33b) is not. The crucial difference is that in (33a) the fronted *wh*-phrase involves an A trace and in (33b) it involves an A-bar trace. Both of them are not bound on the surface, but it is assumed that A traces such as t_i in (33a) can be licensed through "reconstruction" or connectivity, whereas A-bar traces such as ti in (33b) cannot satisfy the Proper Binding Condition in that manner.

By the same token, if the whole small clause AP is raised to [Spec, CP] in

deriving (27a), it would produce a violation of the Proper Binding Condition due to the presence of an unbound A-bar trace in the fronted AP. However, as stated above, there is no problem as long as you appeal to a "head" movement of A to [Spec, CP], since this option does not involve any offending A-bar trace.

In contrast, the situation is quite different in (32b).There are no valid derivations in obtaining (27b). First, just like (32a), you cannot move the whole small clause AP to [Spec, CP] following the movement of the "subject" NP to [Spec, XP], since it would violate the Proper Binding Condition. Second, you cannot move the string [proud of his son] leaving behind the "subject" trace, since the relevant string only makes up non-minimal non-maximal projection, which is not commonly assumed as a candidate for movement. Hence the ungrammalicality of (27b).

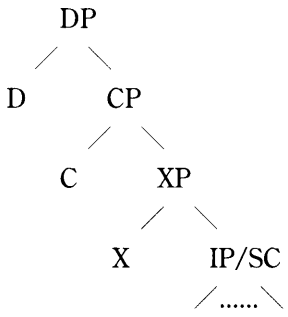
As for (28b), we will tentatively assume that the "subject" NP of the small clause is raised through [Spec, XP] to [Spec, CP], since there is no other candidate for "nominalizing" the CP to satisfy the selectional property of the topmost external D.

If the above accounts for the paradigms in (27)-(28) are on the right track, they seem to provide further motivations for the Kaynean analyses of reduded relatives.[18]

3.3. A Dialectic Analysis of Nominal Modification

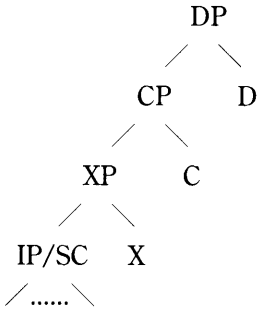
Based on the preceding discussions, we would like to propose the following (underlying) configuration for nominal modification in English:

(34) English Nominal Modification:



If Fukui and Takano's (1998, 1999) are correct, (34) in fact should look something like the following at the "base":

(35) English Nominal Modification :



Once we adopt the Kaynean analyses of nominal modification within the framework of Fukui and Takano (1998, 1999), we will become free from the potential problems that we pointed out in Section 2.3. First, in (35), there is no overt N-to-D movement under the Kaynean analyses, which is compatible with Longobardi's (1994) generalization. Second, since such a sequence as picture of himself forms a constituent at the "base" position in (35), which will feed the reconstruction effects. Finally, the Kaynean analysis of the reduced relatives in Section 3 can accommodate the placement facts of the prenominal attributive adjectives in English in (35).

Next, before we proceed to the configuration of Japanese nominal modification, let us briefly address Murasugi's (2000) treatment of nominal modification in Japanese here. Within the theory of antisymmetry of syntax, Kayne (1994) proposed to analyze the N-final relative such as (36) in Japanese as involving the configuration schematically represented in (37) below:

(36) [[Taroo－ga yonda] hon]
Taroo－Nom read book
'the book that Taroo read'

(37) [DP [IP...t_i...]$_j$ [D' D [CP NP$_i$ [C' C t_j]]]]

It is assumed that in general the relative construction has the D-CP structure whether it an N-initial or N-final relative. In (36), the relative head NP has been raised to [Spec, CP] from within the IP, which in turn has been moved to [Spec, DP], giving rise to the surface order of the N-final relative.

Working within Kayne's (1994) anisymmetry theory, Murasugi (2000) reaches the conclusion that Japanese does not have a relative clause as in (38) below which has the D-CP underlying structure with the relative "head" raised to

[Spec, CP], and she claims that the so-called "relative clauses" in Japanese are pure sentential modifiers making up pure complex NPs with the following configuration in (39):

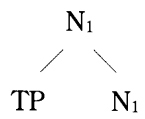
(38) $[_{DP}\ [_{IP}...t_i...]_j\ [_{D'}\ D\ [_{CP}\ NP_i\ [_{C'}\ C\ t_j]]]]$
(39) $[_{DP}\ [_{IP}...][_{D'}\ D\ [_{NP}...[_{N'}\ N...]]]]$ (Murasugi's (3))

Murasugi (ibid.) claims that the absence of relative clauses in Japanese follows from the Proper Binding Condition and Kayne's analysis itself. All in all, we agree with *Murasugi's* arguments for the claim that Japanese does not have a relative structure in the sense of English. However, only one point in the configuration in (39) seems to be strange from both syntactic and semantic point of view.

First, as far as syntax is concerned, there is no motivation to potulate D and its projection in (39). In the case of (38), Kayne assumes that D triggers movement of IP to its Spec. So, D has at least a role in syntax. In contrast, in (39), D does not play such a role. IP is just "base-generated" at [Spec, DP].

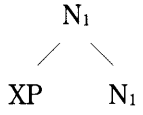
Second, in terms of semantics, D is usually assumed to be the locus of operators such as a lambda-operator which semantically close off the meaning of noun phrase. Notice that in (39) D does not c-command IP, so IP is outside the scope of D. This means that you could not obtain a restrictive meaning of relative clause as long as you assume a structure as in (39). This kind of criticism does not seem to carry over to Kayne's analysis in (39), since at LF the trace/copy of IP can be taken to be c-commanded by D.

In conclusion, although we accept Murasugi's conclusion that Japanese does not have a relative clause with D-CP underlying structure, we will not take the configuration in (39) as a correct one. In this connection, recall the analysis of the Japanese "relative clause" by Fukui and Takano (1999) in Section 2, which is repeated as (40) below:

(40)


This structure is free from any of the above-mentioned criticisms against Murasugi (op.cit.).[19] Considering that Fukui and Takano's (ibid.) proposal on the structure of Japanese "relatives" in (40) is on the right track, we will generalize it as follows:

(41) Japanese Nominal Modification :



In (41), as long as an XP serves as an appropriate modifier, it will enter into the configuration of nominal modification in Japanese in contrast to English, which always involves the D-CP structure canonically due to the presence of the functional category D in that language.

If the Kaynean analysis of relative clauses is on the right track, it will yield some interesting implications both in the theoretical and empirical domains in the context of comparative-parametric syntax.

First of all, notice that the Kaynean analysis of relative clauses assumes that at least the English-type language always involves an underlying structure in which the external determiner D^0 takes a CP complement. Here the specific property of the functional category D^0 plays an important role to generate the English-type relative clauses. Therefore, if a language has the functional category D^0, potentially it will display some characterictic properties of relativization of the English-type language. On the other hand, if a language lacks such a functional category as D^0, then it would be expected to lack the D-CP Kaynean relative structures and to employ a different strategy to implement the nominal modification, displaying quite different syntactic properties.[20] Japanese might be a case in point. It has been widely discussed in the literature that Japanese "relatives" exhibit non-movement properties (cf. Kuno 1973, Hoji 1985, Murasugi 1991 among others).

Before we conclude, let us consider the following "hypothetical" situation. Suppose Japanese has the functional category D, then it will be expected to have the D-CP structure in Japanese, given the fact that Japanese has CPs. However, as it turns out, the morphological structures of "adjectives" in Japanese will block such a hypothetical situation. First, consider the following paradigm in Japanese:

(42) a. [[John-ga katta] ringo]
John-Nom bought apple
'the apple that John bought'
b. [[akai] ringo]
red apple
'the red apple/the apple that is red'

As shown in (42), Japanese, which is one of the strict head-final languages, place both the relative clause and the attributive adjective in front of the modified head noun. On the other hand, in the case of English, there is a discrepancy between the relative clause and the attributive adjective with respect to the placement in the noun phrase. Namely, the relative clause always follows the modified noun, while the attributive adjective precedes the modified noun in most cases.[21)]

In fact, there is a piece of evidence which indicates that the prenominal (attributive) adjectives in English and Japanese are categorially different in the first place. Observe the following paradigm :[22)23)]

(43) a. [[aka-**i**] ringo]
red-Nonpast apple
b. [[aka-**katta**] ringo]
red-Past apple

Note that the prenominal adjectives in Japanese will inflect for tense unlike those in English.21 In the current principles and parameters approach, adjectives are assumed to have such formal features as (-interpretable) ϕ-features and a categorial feature, but tense does not enter into them in general. Thus, in this respect, the prenominal adjectives in Japanese have the same property as the postnominal relative clauses in English, as illustrated below:

(44) a. the apple [that **is** red]
b. the apple [that **was** red]

Given this, it is natural to conclude that the identity of the prenominal adjectives in Japanese such as (43) are prenominal relative clauses rather than bare adjectives (A^0). As a matter of fact, the same paradigm obtains in English and Japanese with respect to predicative use of adjectives as well, as shown below:

(45) a. That apple **is** red.
b. That apple **was** red.
(46) a. sono ringo-wa aka-**i**.
that apple-Top red-Nonpast
'that apple is red.'
b. sono ringo-wa aka-**katta**.
that apple-Top red-Past

'that apple was red.'

Given the fact that Japanese "adjectives" per se are categorially IP (TP) unlike English, they could not be raised to the putative [Spec, CP] which should be selected by the topmost external D for the following reasons.First, if we try to extract a bare adjective stem out of the IP (TP) projection, it would end up leaving the inflectional affix for tense dangling, which would violate the morphological requirement on affixes. Second, even if we try to move the whole "adjective" IP (TP) projection to the putative [Spec, CP] in the hypothesized D-CP structure in Japanese, it cannot satisfy the selectional property of the topmost external D, which requires a nominal element in its minimal domain. Thus, as long as a langauage such as Japanese has "inflectional adjectives, "it cannot have the D-CP structure avaialble. This seems to further support the idea that Japanese-type languages lack the functional category D in the lexicon (cf. Fukui 1986, 1988, 1995).

Thus, our analysis can account for the following correlations in English and Japanese, in addition to Fukui and Takano's (2000) (8) in Section 2.

(47)

	English	Japanese
determiner	present	absent
prenominal attributive adjective	present	absent

4 *Conclusion*

In conclusion, this paper proposed a dialectic analysis of nominal modification, incorporating the respective virtues of Fukui and Takano's (2000) analysis of relatives and the Kaynean analyses of relatives (Kayne 1994; Bianchi 1999, 2000). It was argued that various differences of nominal modification between the N-initial language such as English and the N-final language like Japanese can be derived from a single parametric difference between the two languages: the presence vs.absence of the functional category D in the lexicon, supporting Fukui (1986, 1988, 1995).[24]

Notes

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1 See Saito and Fukui (1998) for a different view which holds that the head parameter plays a crucial role in the core computation for human language C_{HL}.

2 To secure a proper temporal order at the PF interface, Takano (1996: 40) proposes the following mapping principle:

(i) If α precedes" β in becoming available for Concatenation,
"
αprecedes β in temporal order.

3 The minimal domain of the Head H is the Spec (s) and complement of H (cf.Chomsky (1995b)).

4 Fukui and Takano (2000) assumes with Fukui (1986, 1988, 1995) that Japanese lacks the functional category D unlike English. We will come back to this matter later in Section 3 and claim that Fukui's (ibid.) hypothesis is indeed on the right track on the basis of different grounds from lack of various "agreement"-related phenomema in Japanese.

5 In what follows, we will not indicate the attachment of formal features to the functional head D and the maximal/minimal notations in the tree diagrams just for the sake of simplicity.

6 Fukui and Takano (2000: 20) adopt the following condition, slightly modifying Diesing's (1990) idea about functional projections:

(i) A functional category is present in the structure only when it is necessary.

7 We will propose a modified analysis of the relative structure in English in Section 3.3, while maintaining Fukui and Takano's (2000) analysis of the relative clause in Japanese.

8 Bianchi (2000: 128) states "...Here the nominal D^0 is merged with a CP category that cannot satisfy its selectional N"feature. As this feature is strong, it immediately triggers the raising of a [+N] category to a position falling in the minimal domain of D^0," adopting Manzini's (1994) definition of minimal domain in (i) below:

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

The reason why the noun phrase cannot move to [Spec, CP] instead of the at-

tributive adjective in English is not known at this moment. We will leave this important question open in this paper.

9 This seems to be related to Ross's (1969) original proposal that adjectives are to be analyzed as noun phrases.

10 This point was first brought to my attention by Yuji Takano (personal communication).

11 The only problem is that we have to assume the abstract incorporation of the relative D takes place through C to the topmost external D.

12 See Chomsky (1981: 166) for an attempt to explain these phenomena in terms of government.

13 Abney (1987: 326－327) notes that certain adjectives in English can occur postnominally without any PP complements, as illustrated below:

(i) a man [bruised and battered]

(ii) a fish [this big], a steak [just right]

(iii) a man [alone], the man [responsible], six dollars [even], the example [following], etc.

(iv) someone [bold], something [terrible], etc.

For (iv), see Kishimoto (2000), who proposes an overt N-raising analysis within the framework of the minimalist program.

14 We will assume with Bianchi (2000) that the adjectival category is predicated of a nominal projection lower than DP in reduced relatives.

15 Recall that under Fukui and Takano's (1998, 2000) assumption that we are taking here, a conventionally called "head movement" is analyzed as a "substitution" operation just like a normal XP movement.

16 The Proper Binding Condition is defined as follows:

(i) Traces must be bound. (Fiengo 1977)

17 We will cite Saito's (1986) examples from Murasugi (2000).

18 Akira Watanabe (personal communication) points out that it is not clear how to account for the ungrammaticality of the following as it stands:

(i) *the proud man of his son

Note that we cannot invoke the "A-over-A" principle to explain (i) by saying that in (i), the head A *proud* is moved rather than the whole AP [*t* [*proud of his son*]] in violation of the A-over-A principle.This is because the same principle would rule out (27a). One possibility would be to say that (i) is syntactically well-

formed but is "semantically" ill-formed. Notice that when the simplex adjective proud is used prenominally, its theta-grid has only one theta role to be assigned, whereas when it is used postnominally as the head of a complex adjectival phrase that takes a PP complement, its theta-grid has two theta-roles to be discharged. Thus, this kind of shifting of theta-grids might be banned in general.Unfortunately, we have no decisive account for the status of (i) at this point. We will leave it for our future research.

19 As Fukui and Takano (1999) note, this structure is well in line with Chierchia's (1998) Nominal Mapping Parameter, according to which Japanese-type languages are always permitted to employ NP rather than DP as an argumental element in their grammar. Thus, as far as semantics goes, functional elements such as D are not always necessary in a grammar.

20 If Kayne's (1994) assumption that the relative pronoun is originally located at the D head of the raised relative head DP, then the assumption that Japanese lacks the functional category D also account for the fact that Japanese lacks relative pronouns.

21 Hoshi (1997) extends Fukui and Takano's (1998) parametric account of differences between English and Japanese to the empirical domain of adjectival modification, coupled with the modified version of Abney's (1987) f-selectional analysis of prenominal adjectives. We will not pursue this possibility in the present paper.

22 Nishiyama (1999) entertains two possibilities of analyzing prenominal adjectives as (being contained in) relative clauses or direct modifiers.Whichever analysis is correct, the point that I made in the text remains intact: in either analysis the adjectival root and its projection A(P) is embedded in an "affixal" projection XP (ModP).

23 See Kuno (1973) *inter alia*. for some discussion concerning tense inflection of adjectives in the "relative clauses" in Japanese.

24 Although Murasugi (2000) demonstrates that Japanese does not have the D-CP structured relative clause in the sense of Kayne (1994), she argues that there still remains a possibility that Kayne's analysis of N-final relatives itself can be maintained for other languages as long as the prenominal relative clause is nonfinite. See Murasugi (ibid.) for detailed discussion on this point.

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