

Multiple Prenominal Modifiers in Japanese

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1. Introduction

Japanese has three types of prenominal modification markers: *-i*, *-na*, and *-no*. The first type (*-i*) attaches to canonical adjectives (CAs), as in (1). The second type (*-na*) attaches to nominal adjectives (NAs), as in (2). The third type (*-no*) attaches to any other categories, especially, NPs and PPs, as in (3). I postpone glossing *-i*, *-na*, and *-no* until I identify their grammatical status later.

- (1) a. hiro-**i** kawa (CA)
 broad river
 b. taka-**i** yama
 high mountain
- (2) a. buree-**na** kyaku (NA)
 rude guest
 b. sizuka-**na** mizuumi
 quiet lake
- (3) a. tyoosin-**no** josee (NP)
 tall lady
 b. haha-kara-**no** tegami (PP)
 mother-from letter

Japanese allows multiple prenominal modifiers to modify a single noun.

In such cases, all but the rightmost occurrence of *-i* can be replaced with *-ku*. In a parallel way, *-na* and *-no* can be replaced with *-de*.

- (4) a. hiro-**i** fuka-**i** kawa
 b. hiro-**ku** fuka-**i** kawa
 broad deep river
- (5) a. buree-**na** taikutu-**na** kyaku
 b. buree-**de** taikutu-**na** kyaku
 rude boring guest
- (6) a. tyoosin-**no** kinpatu-**no** josee
 b. tyoosin-**de** kinpatu-**no** josee
 tall blonde lady

The aim of this paper is to clarify the structural difference between the (a) examples and the (b) examples in (4)–(6).

Notice that the morphemes *-ku* and *-de* are unacceptable in the following examples.

- (7) a. naga-**i** eigo-**no** tango
 b. *naga-**ku** eigo-**no** tango
 long English word
- (8) a. kaiteki-**na** ki-**no** isu
 b. *kaiteki-**de** ki-**no** isu
 comfortable wooden chair
- (9) a. eigo-**no** naga-**i** tango
 b. *eigo-**de** naga-**i** tango
 English long word

The categorial differences of the modifiers are irrelevant to the unacceptability of the (b) examples in (7)–(9). The following examples are completely acceptable in spite of the categorial differences of the modifiers.

- (10) a. waka-**i** gakusee-**no** syatyoo

- b. waka-**ku** gakusee-**no** syatyoo
 young student president
- (11) a. kooka-**na** konagona-**no** tubo
 b. kooka-**de** konagona-**no** tubo
 valuable broken vase
- (12) a. gakusee-**no** waka-**i** syatyoo
 b. gakusee-**de** waka-**i** syatyoo
 student young president

The following English counterparts give us a clue to the possible source of the difference between (4)-(6) and (7)-(9).

- (13) a. a broad and deep river
 b. a rude and boring guest
 c. a tall and blonde lady
- (14) a. *a long and English word
 b. a long English word
- (15) a. *a comfortable and wooden chair
 b. a comfortable wooden chair (Yasui et al. 1976: 147-148)

Interestingly, the English counterparts of (4)-(6) allow coordination, as in (13), while those of (7)-(9) do not, as in (14) and (15). These facts lead us to the conclusion that modifiers marked with *-ku/-de* are coordinated, while modifiers marked with *-i/-na/-no* in multiple modifier constructions are stacked. This is schematically represented in (16).

- (16) a. [XP-*i/-na/-no* [XP-*i/-na/-no* NP]] (stacked structure)
 b. [[XP-*ku/-de* XP-*i/-na/-no*] NP] (coordinate structure)

The morphemes *-i*, *-na*, and *-no* are all members of the same functional category Mod(ification) in the sense of Rubin (1994). That is, there is no syntactic difference among modifiers involving NAs, CAs, and NPs/PPs. Modifiers marked with *-i*, *-na*, and *-no* are uniformly of category ModP. The morphological difference between them is captured by the principles of

Distributed Morphology (Halle and Marantz 1993).

Another claim of this paper is that the morphemes *-ku* and *-de* arise from the morphological fusion of Mod and Co(njunction). (Following Johannessen (1998), I assume that a conjunction heads a conjunction phrase.) Although Co has no phonological realization per se, it is crucial in the phonological differentiation between stacked structures and coordinate structures.

Japanese relative clauses can also occur prenominally, as shown in (17).

(17) [_{NP} [_{CP} Taroo-ga kinoo at-ta] [_{NP} josee]]

Taroo-Nom yesterday met lady

'the lady who Taroo met yesterday'

Relative clauses are distinct from direct modifiers, in that no overt modification markers are present in relative clauses, and there are some clear differences in interpretation between them, as we will see in section 2. So, relative clauses are excluded from consideration.

Before analyzing multiple modifier constructions, we have to analyze single modifier constructions in Japanese. In section 2, I will discuss whether Japanese prenominal modifiers are relative clauses or direct modifiers. In subsections 3.1 and 3.2, I will identify the grammatical status of the morphemes *-i*, *-na*, and *-no*.

2. Prenominal Modifiers in Japanese: Relative Clauses or Direct Modifiers?

English has two types of modification structures: relative clauses and direct modifiers.

(18) a. the man [who is tall] (relative clause)

b. the [tall] man (direct modifier)

It is controversial whether Japanese has both types of modification structures as well. Are the prenominal modifiers in (19) relative clauses or direct

modifiers? Before analyzing multiple prenominal modifiers, let us discuss this problem. The claim of this section is that Japanese has both types of modification structures, but they are superficially indistinguishable from each other.

- (19) a. hiro-i kawa
 broad river
 b. buree-na kyaku
 rude guest
 c. tyoosin-no josee
 tall lady

The modifiers in (19) are formally similar to relative clauses, which also occur prenominally in Japanese, as shown in (20).

- (20) [_{NP} [_{CP} Taroo-ga kinoo at-ta] [_{NP} josee]]
 Taroo-Nom yesterday met lady
 ‘a lady who Taroo met yesterday’

First, let us consider CA examples like (19a). Note that the morpheme *-i* occurring in (19a) also appears in (21).

- (21) Kawa-ga hiro-i.
 river-Nom broad-Pres
 ‘The river is broad.’

In predicative canonical adjective examples like (21), Japanese *-i* is standardly analyzed either as a present tense marker, or as a present tense form of the copula. On the assumption that the morpheme *-i* in (19a) has the same grammatical status as that in (21), (19a) has the structural representation in (22), where the modifier is a relative clause.

- (22) [_{NP} [_{CP} hiro-i] [_{NP} kawa]]

It is clear from the past tense form in (23) that Japanese prenominal CAs inflect for tense. This is a property of sentential constructions like relative clauses.

- (23) [_{NP} [_{CP} hiro-**katta**] [_{NP} kawa]]
 broad-Past river
 ‘a river that was broad’

Next, let us consider NA examples like (19b). Predicative NAs are followed by the copula *da*.

- (24) a. Kyaku-ga buree-da.
 guest-Nom rude-cop.Pres
 ‘The guest is rude.’
 b. Kyaku-ga buree-de-arū.
 guest-Nom rude-cop.Pres

(24a) and (24b) are synonymous. Hence, Urushibara (1993) and Nishiyama (1998) claim that *-da* is the contracted form of *de aru*. The same reasoning holds of the prenominal form in (25b). (25b) is synonymous with (25a), in which the modifier is clearly a relative clause. Thus, if we assume that the copula *-da* alternates with the form *-na* in the prenominal position, (19b) is analyzed as in (25b).¹

- (25) a. [_{NP} [_{CP} buree-de-arū] [_{NP} kyaku]]
 rude-de ar-Pres guest
 ‘a guest who is rude’
 b. [_{NP} [_{CP} buree-na] [_{NP} kyaku]]

Prenominal NAs as well as CAs inflect for tense, shown in (26).

- (26) a. [_{NP} [_{CP} buree-de-atta] [_{NP} kyaku]]
 rude-de ar-Past guest
 ‘a guest who was rude’
 b. [_{NP} [_{CP} buree-datta] [_{NP} kyaku]]

The examples in (23) and (26) show that some Japanese prenominal modifiers are relative clauses. However, several pieces of evidence that Japanese prenominal modifiers are not all relative clauses are pointed out by Yamakido (2000). She claims that Japanese has direct modifiers in

addition to relative clauses. I will introduce her discussion briefly.

First, we will discuss intersectivity. As is well-known, the adjective in (27a) is ambiguous between what is usually called an “intersective” reading and a “non-intersective” reading; these readings are paraphrased informally as in (27b) and (27c), respectively.

(27) a. Peter is an old friend.

b. ‘Peter is a friend and Peter is old.’ (intersective reading)

c. ‘Peter has been a friend for a long time.’ (non-intersective reading)

In contrast, the relative clause in (28a) is unambiguous. The only possible reading for (28a) is the intersective reading given in (28b).

(28) a. Peter is a friend who is old.

b. ‘Peter is a friend and Peter is old.’ (intersective reading)

The non-intersective reading cannot be expressed by a relative clause.

If prenominal adjectives in Japanese all occur inside relative clauses, they should all be interpreted intersectively. But this is not true. Consider (29). Japanese expresses the two meanings of (27a) by two different adjectives. The intersective meaning is expressed by the adjective *koorei*, and the non-intersective meaning is expressed by the adjective *huru-i*.

(29) a. Peter-ga koorei-no tomodati-da.

Peter-Nom old friend-cop.Pres

‘Peter is an aged friend.’

b. Peter-ga huru-i tomodati-da.

Peter-Nom longtime friend-cop.Pres

‘Peter is a friend for a long time.’ (Yamakido 2000: 593)

As we saw above, relative clauses are always understood as intersective modifiers, while direct modifiers can be understood either as intersective modifiers or as non-intersective modifiers. Since the adjective *huru-i* in (29b) has a non-intersective meaning, it cannot be contained in a relative clause. Thus, we can conclude that the adjective *huru-i* in (29b) is a direct modifier

rather than a relative clause.

Next, we will discuss temporal interpretation. An analysis of Japanese prenominal adjectives as copula relative clauses predicts that the temporal interpretation of a prenominal adjective should be the same as the temporal interpretation of a relative clause. Consider first the temporal interpretation of structures that are clearly relative clauses. The present tense in Japanese relative clauses can be interpreted as referring to either the event time or the speech time, as shown in (30).

- (30) a. Taroo-wa [nai-te **i-ru** otoko-o] mi-ta.
 Taroo-Top cry-Prog-**Pres** man-Acc see-Past
 'Taroo saw a man who was crying [at the time of the meeting].'
 b. Taroo-wa [asoko-de ima nai-te **i-ru** otoko-o] kinoo
 Taroo-Top there-at now cry-Prog-**Pres** man-Acc yesterday
 mi-ta.
 see-Past
 'Yesterday Taroo saw the man who is now crying over there.'
 (Ogihara 1996: 153-154, cited in Yamakido 2000: 595)

Now consider (31), which contain a temporal adverb that forces the time of the relative clause to be neither the speech time nor the event time.

- (31) a. *Taroo-wa [eki-de kinoo nai-te i-ru otoko-o]
 Taroo-Top station-at yesterday cry-Prog-**Pres** man-Acc
 ototoi mise-de mi-ta.
 the-day-before store-at see-Past
 'The day before yesterday Taroo saw at the store the man who
 was crying at the station yesterday.'
 b. Taroo-wa [eki-de kinoo nai-te i-ta otoko-o]
 Taroo-Top station-at yesterday cry-Prog-**Past** man-Acc
 ototoi mise-de mi-ta.
 the-day-before store-at see-Past

‘The day before yesterday Taroo saw at the store the man who was crying at the station yesterday.’ (ibid.)

As shown by the unacceptability of (31a), the embedded present tense *-ru* cannot refer to an intermediate time between the speech time and the event time. Instead the embedded past tense must be used, as in (31b). Thus the potential time reference of a present tense relative clause embedded under a matrix past tense is limited to the speech time or the event time.

Now, let us consider the possible temporal reference of prenominal adjectives. Prenominal adjectives can refer to the matrix event time or the speech time, as in a relative clause construction, as shown in (32).

- (32) a. Taroo-wa taka-i e-o katta.
 Taroo-Top expensive painting-Acc buy-Past
 ‘Taroo bought an expensive painting/painting that was expensive.’
- b. Taroo-wa ima-wa totemo taka-i e-o
 Taroo-Top now-Top very expensive painting-Acc
 zyuu-nen-mae katta.
 ten-year-ago buy-Past
 ‘Ten years ago Taroo bought the painting which is very expensive now.’

(Yamakido 2000: 596)

Unlike relative clauses, prenominal adjectives can also refer to an intermediate time, as shown in (33).

- (33) a. Kinoo-no subarasi-i konsaato-wa sakunen NY-de dai-ninki
 Yesterday terrific concert-Top last-year NY-in very-popular
 da-tta.
 cop-Past
 ‘Yesterday’s terrific concert was very popular in NY a year ago.’
- b. Taroo-wa kinoo-no hen-na hito-o ototoi dinner-ni
 Taroo-Top yesterday strange man-Acc the-day-before dinner-to

syootai-si-ta.

invite-do-Past

‘Taroo invited yesterday’s strange man to dinner the day before
yesterday.’ (ibid. : 597)

For example, *Kinoo-no subarasi-i konsaato* in (33a) clearly can refer to a concert that was terrific yesterday, a time intermediate between the matrix event time (one year ago) and the speech time (now).²

The temporal interpretation of a prenominal adjective contrasts with that of a present tense relative clause. This contrast is observed in English as well. Consider (34).

(34) a. *The entry that is best in the previous year will win.

b. The previous year’s best entry will win. (ibid. : 593–594)

The direct modifier in (34b) can refer to an intermediate time, whereas the present tense relative clause in (34a) cannot. Intermediate readings are available only in direct modifier constructions. The examples in (33) show that Japanese prenominal adjectives can refer to an intermediate time. This means that Japanese prenominal adjectives can be direct modifiers. A natural view of the difference between direct modifiers and relative clauses is precisely that the former contain no tense, while the latter contain a genuine present tense.

To sum up, intersectivity and temporal interpretation offer compelling arguments that Japanese prenominal adjectives are not all relative clauses. However, this does not mean that Japanese prenominal adjectives are all direct modifiers. Some prenominal adjectives are clearly relative clauses, as shown in (23) and (26). Thus, I conclude that Japanese has both copula relative clauses and direct modifiers. The modifiers in (19) are structurally ambiguous between relative clauses and direct modifiers. As space is limited, I will concentrate on direct modifier cases in what follows.

3. Direct Modifiers in Japanese

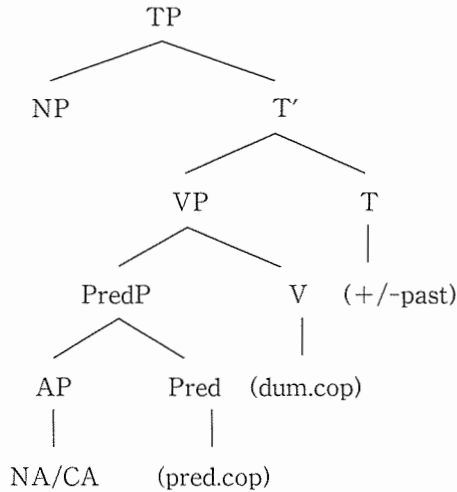
The previous section demonstrated that Japanese has both copula relative clauses and direct modifiers. In the remainder of this paper, I will deal specifically with direct modifiers. As for the categorial identification of the morphemes *-i*, *-na*, and *-no* in direct modifier constructions, I follow Kitagawa and Ross (1982) and Rubin (1994), and assume that they occupy the same functional head: Mod(ification). The morphological difference among direct modifiers involving CAs, NAs, and NPs/PPs is explained by utilizing the principles of Distributed Morphology (DM; Halle and Marantz 1993). So I will provide a brief overview of the framework of DM in 3. 1. Nishiyama (1998) proposes an interesting account of predicative adjectives in Japanese within this framework. His analysis provides important insights into the analysis proposed in 3. 3 concerning multiple direct modifiers in Japanese. I will explain the alternations between *-i* and *-ku*, and between *-na/-no* and *-de*, by making use of the principles of DM.

3.1 Background: Distributed Morphology

Nishiyama (1998) claims that predicative CAs and NAs like (35) share fundamentally the same phrase structure. The basic clause structure that he proposes is given in (36).

- (35) a. Yama-ga taka-k-at-ta. (CA)
 mountain-Nom high- pred.cop-dum.cop-Past
 ‘The mountain was high.’
- b. Mizuumi-ga sizuka-de at-ta. (NA)
 lake-Nom quiet- pred.cop-dum.cop-Past
 ‘The lake was quiet.’

(36)



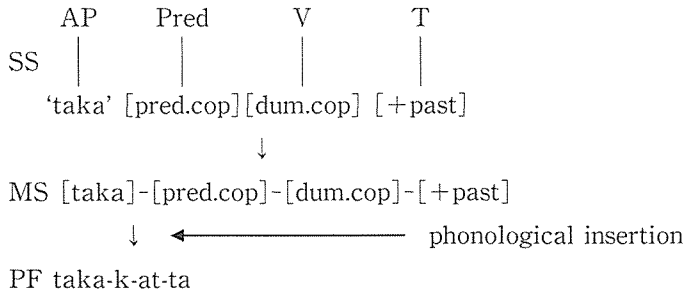
According to Nishiyama, there are two types of copulas in Japanese: predicative copula (pred.cop) and dummy copula (dum.cop). The predicative copula is semantically contentful and projects PredP in the sense of Bowers (1993). It is phonologically realized as /k/ in the case of CAs and as /de/ in the case of NAs. The dummy copula is semantically vacuous and projects VP selected by T and then supports the tense marker, analogously to English *be*. It is phonologically realized as /ar/.

Nishiyama claims that the morphological difference between CAs and NAs is explained by the principles of DM. One important hypothesis of DM is that the syntax has access only to formal (i. e., categorial, syntactic, and semantic) features, and phonological features are not available in the syntax. Rather, phonological features are inserted at Morphological Structure (MS), which is placed between the syntax (S-Structure: SS) and PF. As an illustration, let us consider how *taka-k-at-ta* and *sizuka-de at-ta* in (37) are derived under his analysis.

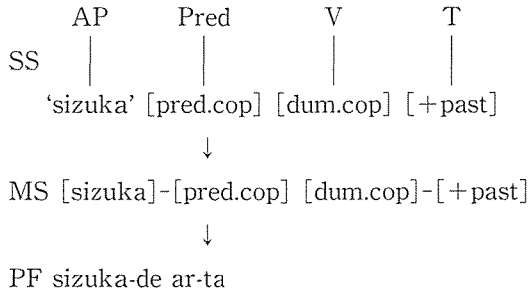
(37) a. Yama-ga taka-k-at-ta.
 mountain-Nom high-pred.cop-dum.cop-Past
 'The mountain was high.'

b. Yama-ga sizuka-de at-ta.
 mountain-Nom quiet-pred.cop-dum.cop-Past
 'The mountain was quiet.'

(38)



(39)



In the syntax, only the formal features [pred.cop], [dum.cop], and [+past] reside under the terminal nodes, Pred, V, and T, respectively. 'taka' is a mnemonic device for the bundle of formal features for the adjective. Actual realizations of each functional head are obtained by the following phonological insertion rules:³

- (40) a. [pred.cop] <—> /k/ /CA ____
 b. [pred.cop] <—> /de/

c. [dum.cop] \leftrightarrow /ar/

d. [+past] \leftrightarrow /ta/

(40c-d) are common to CAs and NAs. What differentiates CAs and NAs are (40a-b), which say that [pred.cop] is realized as /k/ after a CA and as /de/ everywhere else.⁴

The reason why Nishiyama does not specify the contextual feature for /de/ in (40b) is that it is not limited to NAs. As (41a-b) show, /de/ can be used for NPs and PPs. The categories that take *-de* form no natural class. This elsewhere nature of /de/ is implemented by the elsewhere rule in (40b).

(41) a. *gakusee-de ar-u.*

student-pred.cop-dum.cop-Pres

'is a student'

b. *Tokyo-kara-de aru.*

Tokyo-from- pred.cop-dum.cop-Pres

'is from Tokyo'

Another important point of Nishiyama's claim is that contraction is due to the operation Fusion. Let us consider (42).

(42) a. *Yama-ga sizuka-de-ar-u.*

mountain-Nom quiet-pred.cop-dum.cop-Pres

'The mountain is quiet.'

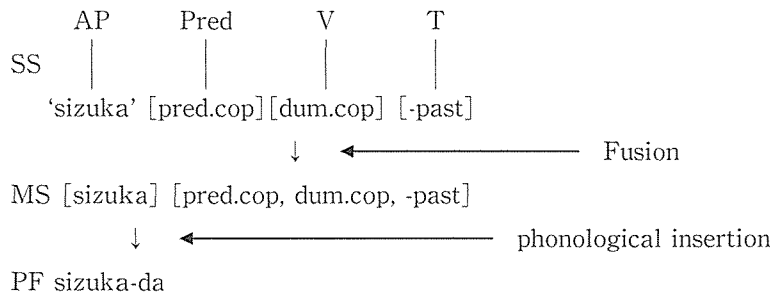
b. *Yama-ga sizuka-da.*

Mountain-Nom quiet-cop.Pres

'The mountain is quiet.'

Apart from stylistic differences, (42a-b) are basically synonymous. Hence, he assumes that *da* is the contracted form of *de aru*. The derivation of (42b) is as follows:

(43)



(44) [pred.cop, dum.cop, -past] <—> /da/

The operation Fusion collapses feature boundaries and lumps features together under a single node (as [pred.cop, dum.cop, -past]). The rule in (44) applies to the result of Fusion. Fusion applies optionally. Without Fusion, each separate feature obeys the rules in (40), yielding *de aru*.

Nishiyama analyzes (45) in the same fashion. According to him, the morphemes *-na/-no* arise from the fusion of a whole set of features, including [pred.cop], [dum.cop], [-past], and [rel.cl]. [rel.cl] stands for the feature of relative clauses, which resides in C⁰ of the relative CP. The phonological realizations of the complex feature are accomplished by the rules in (46).

- (45) a. **sizuka-na** yoru
 quiet-cop. Pres night
 ‘a night which is quiet’
 b. **gakusee-no** syatyoo
 student-cop-Pres president
 ‘a president who is a student’

(46) a. [pred.cop, dum.cop, -past, rel.cl] <—> /na/ /NA ____

b. [pred.cop, dum.cop, -past, rel.cl] <—> /no/

Without Fusion, (47a-b) are derived.

- (47) a. *sizuka-de ar-u* *yoru*
 quiet-pred.cop-dum.cop-Pres night
 ‘a night which is quiet’
- b. *gakusee-de ar-u* *syatyoo*
 student-pred.cop-dum.cop-Pres president
 ‘a president who is a student’

Nishiyama analyzes the modifiers in (45) as copula relative clauses. In section 2, we saw that Japanese has both copula relative clauses and direct modifiers. As far as copula relative clauses are concerned, I adopt Nishiyama’s analysis.⁵

So far I have made a brief summary of Nishiyama’s (1998) analysis of predicative adjectives in Japanese. The two claims that are relevant to the discussion in the following two subsections are as follows: (1) There is no syntactic difference between modifiers involving CAs and NAs. The morphological difference between them is explained by utilizing the principles of DM. (2) Non-isomorphic mappings from syntactic terminals to morphophonological constituents are accomplished by the operation Fusion. This operation fuses two terminal nodes into a single terminal node (or an atomic node). Phonological insertion occurs at atomic nodes.

In the following two subsections, I will analyze (multiple) direct modifiers in Japanese within the framework of DM.

3.2 Modification Phrases

In section 2, we saw that the modifiers in (48) are structurally ambiguous between relative clauses and direct modifiers. In 3. 1, we saw that in relative clause examples, the morphemes *-na*, and *-no* arise from the morphological fusion of a predicative copula, a dummy copula, a present tense, and a relative complementizer, and the morpheme *-i* is a present tense. Now, the question arises how the morphemes *-i*, *-na*, and *-no* in

direct modification structures should be analyzed.

- (48) a. hiro-**i** kawa
 broad river
 b. buree-**na** kyaku
 rude guest
 c. tyoosin-**no** josee
 tall lady

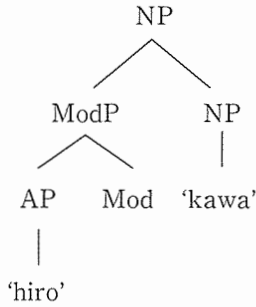
The distributional patterns of the morphemes *-i*, *-na* and *-no* are remarkably alike. They occur between head nouns and preceding modifiers. Furthermore, the following examples show that they have the same grammatical status. Usually, a word unambiguously belongs to one class. But several words show a mixed behavior of NA, CA and NP.

- (49) a. ooki-**i** hako
 b. ooki-**na** hako
 big box
 (50) a. pikapika-**no** kuruma
 b. pikapika-**na** kuruma
 shiny car
 (51) a. kiiro-**i** hana
 b. kiiro-**no** hana
 yellow flower

The morphemes *-i*, *-na*, and *-no* can alternate with no change of meaning in these cases. These facts suggest that the morphemes *-i*, *-na*, and *-no* are functional equivalents of each other and that they should accordingly be analyzed in the same manner. Thus, I assume that they belong to the same category. As for the categorial identification of the morphemes, I follow Kitagawa and Ross (1982) and Rubin (1994, 1996), and assume that they are all members of the same functional category, Mod(ification), which projects the phrase ModP, as in (52). Direct modifiers marked with *-i*, *-na*, and *-no*

are uniformly of category ModP.⁶

(52)



In DM terms, the morphemes *-i*, *-na*, and *-no* are all phonological realizations of Mod. We need the following phonological insertion rules.

- (53) a. [Mod] \leftrightarrow /i/ /CA____
 b. [Mod] \leftrightarrow /na/ /NA____
 c. [Mod] \leftrightarrow /no/

According to these rules, Mod is realized as /i/ after a CA, as /na/ after an NA, and as /no/ everywhere else.⁷

In the next subsection, I will discuss multiple direct modifier constructions in Japanese, based on the assumption that direct modifiers in Japanese are uniformly of category ModP.

3.3 Multiple Direct Modifiers

Having now analyzed single prenominal modifiers in Japanese, let us turn to the problem described in the introduction. In multiple modifier constructions in Japanese, all but the rightmost occurrence of *-i* can be replaced with *-ku*. In a parallel way, *-na* and *-no* can be replaced with *-de*.

- (54) a. hiro-**i** fuka-i kawa
 b. hiro-**ku** fuka-i kawa
 broad deep river

- (55) a. buree-**na** taikutu-na kyaku
 b. buree-**de** taikutu-na kyaku
 rude boring guest
- (56) a. tyoosin-**no** kinpatu-no josee
 b. tyoosin-**de** kinpatu-no josee
 tall blonde lady

However, such replacements are impossible in the following examples.

- (57) a. naga-**i** eigo-no tango
 b. *naga-**ku** eigo-no tango
 long English word
- (58) a. kaiteki-**na** ki-no isu
 b. *kaiteki-**de** ki-no isu
 comfortable wooden chair
- (59) a. eigo-**no** naga-i tango
 b. *eigo-**de** naga-i tango
 English long word

What is the difference between (54)-(56) and (57)-(59)? To answer this question, it is useful to consider the following English counterparts.

- (60) a. a broad and deep river
 b. a rude and boring guest
 c. a tall and blonde lady
- (61) a. *a long and English word
 b. a long English word
 c. *a comfortable and wooden chair
 d. a comfortable wooden chair (Yasui et al. 1976: 147-148)

The English counterparts of (54)-(56) allow coordination, as in (60), while those of (57)-(59) do not, as in (61). Yasui et al. (1976: 74) classify adjectives into 4 classes, as given in (62), and claim that two adjectives may be conjoined only if they belong to the same class.

- (62) a. Characterizing Adjectives: tall, long, wide, comfortable. . .
 b. Classifying Adjectives: English, Japanese, silken, wooden. . .
 c. Identifying Adjectives: same, other, main, former. . .
 d. Intensifying Adjectives: mere, utter, perfect, true. . .

In (61a), for example, the characterizing adjective *long* is conjoined with the classifying adjective *English*, hence its unacceptability. On the other hand, the examples in (60) are acceptable because the two modifiers in each example belong to the same class (Characterizing A).

Japanese examples containing *-ku/-de* correspond to English examples containing a coordinate structure with respect to their acceptability. Multiple modifier structures without *-ku/-de*, on the other hand, correspond to stacked structures like (61b) and (61d). So let us assume that the morphemes *-ku/-de* occur in coordinate structures. If this assumption is correct, the difference in acceptability between (54b) and (57b), for example, can be explained in the same way as the difference between (60a) and (61a).⁸

Examples can readily be multiplied; some different types of multiple modifier constructions appear in (63)–(65).

(63) Identifying A — Characterizing A

- a. mae-**no** hansamu-na gityoo
 b. *mae-**de** hansamu-na gityoo
 c. a former handsome chairman
 d. *a former and handsome chairman

(64) Identifying A — Classifying A

- a. syuyoo-**na** nihon-no sima
 b. *syuyoo-**de** nihon-no sima
 c. the main Japanese island
 d. *the main and Japanese island

(65) Intensifying A — Classifying A

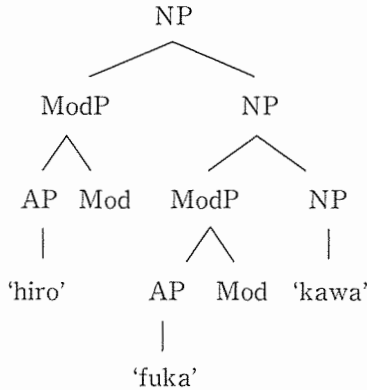
- a. tada-**no** inaka-no keikan

- b. **tada-de inaka-no keikan*
- c. a mere rural policeman
- d. *a mere and rural policeman

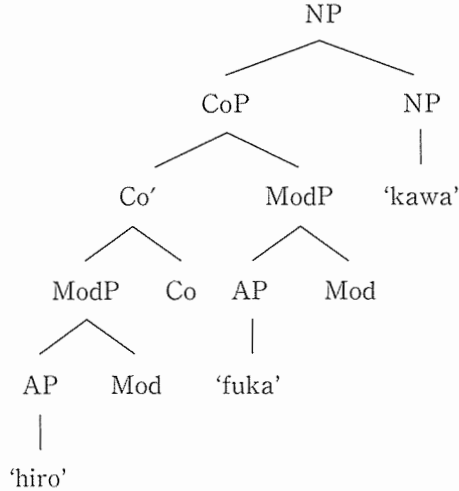
In each of these examples the two modifiers belong to different classes. Hence, the conjunction *and* is impossible in English, and the modifiers marked with *-ku/-de*, which occur in coordinate structures, are unacceptable in Japanese.

To sum up, in each of the (a) examples in (54)–(59), the two modifiers are stacked, while in each of the (b) examples in (54)–(59), they are conjoined. In order to capture this distinction, I present the following syntactic structures.

(66) Stacked Structure



(67) Coordinate Structure



Following Munn (1993) and Johannessen (1998), I assume that a coordinate structure can be considered to have a standard X-bar representation; a conjunction heads a Conjunction Phrase (CoP). In a head-final language like Japanese, the first conjunct is in the complement position of the CoP, and the second is in the specifier position. The first and second conjuncts occupy different positions within the CoP. This asymmetry will be crucial to the discussion below.⁹

Now, let us consider how the functional head Mod is realized in multiple modifier constructions. First, consider stacked structures like (66). The phonological realizations of Mod in stacked structures are obtained by the rules in (53). We do not need any extra phonological insertion rules. For example, both of the two Mods in (66) satisfy the contextual specification in (53a). Thus, both of them are realized as /i/.

Next, let us consider coordinate structures like (67). I assume that Mod and Co are obligatorily combined into the complex feature [Mod, Co] by

the operation Fusion. (It is not clear why Fusion applies obligatorily in this case. I leave this problem open for future research.) The morphemes *-ku* and *-de* in coordinate structures are the results of the following phonological insertion rules:

- (68) a. [Mod, Co] <—> /ku/ /CA____
 b. [Mod, Co] <—> /de/

(68a-b) say that [Mod, Co] is realized as /ku/ when it follows a CA and as /de/ everywhere else.

According to Halle and Marantz (1993), Fusion applies only to sisters. The Mod in the first conjunct can become a sister to Co by Mod-to-Co movement, whereas that in the second cannot because Co does not c-command it. Thus, the morphemes *-ku* and *-de* cannot occur in the second conjunct, as shown in (69)–(71).

- (69) a. *hiro-i fuka-**ku** kawa
 b. *hiro-ku fuka-**ku** kawa
 (70) a. *buree-na taikutu-**de** kyaku
 b. *buree-de taikutu-**de** kyaku
 (71) a. *tyoosin-no kinpatu-**de** josee
 b. *tyoosin-de kinpatu-**de** josee

The analysis proposed in this paper makes a crucial prediction with respect to the relative scope of prenominal modifiers. The first modifiers should take scope over the second in (72a) and (72b), which are stacked structures. And (72c) and (72d), which are coordinate structures, should have the same scopal interpretation.

- (72) a. hiro-**i** fuka-**i** kawa
 broad deep river
 b. fuka-**i** hiro-**i** kawa
 deep broad river
 c. hiro-**ku** fuka-**i** kawa

- broad-and deep river
 d. fuka-**ku** hiro-**i** kawa
 deep-and broad river

When adjectives like those in (72) are used, relative scope has no apparent effect. However, when different adjectives are used, the scopal effects become apparent. Consider (73). Under the analysis proposed in this paper, the two modifiers in each of (73) are stacked.

- (73) a. kooka-**na** konagona-**no** tubo
 valuable broken vase
 b. konagona-**no** kooka-**na** tubo
 broken valuable vase

Kooka-na konagona-no tubo is necessarily valuable (perhaps to researchers, for example), whereas *konagona-no kooka-na tubo* might be worthless. This is because in each example the higher modifier, to the left, modifies the reference of the entire constituent it combines with.

Now, consider (74). (74a) and (74b) are synonymous, and they are interpreted intersectively, just as predicted.

- (74) a. konagona-**de** kooka-**na** tubo
 broken-and valuable vase
 b. kooka-**de** konagona-**no** tubo
 valuable-and broken vase

According to the analysis proposed in this paper, the noun phrases in (74) each contain conjoined modifiers. The two modifiers in each of (74) form a complex modificational constituent. Thus, the scopal effects do not appear.

The same contrast is observed between (75) and (76) as well.

- (75) a. mokee-**no** nihonsee-**no** kuruma
 model Japanese-made car

- b. nihonsee-**no** mokee-**no** kuruma
 Japanese-made model car
- (76) a. mokee-**de** nihonsee-**no** kuruma
 model-and Japanese-made car
- b. nihonsee-**de** mokee-**no** kuruma
 Japanese-made-and model car

(75a) and (75b) are not synonymous. For example, *mokee-no nihonsee-no kuruma* in (75a) might be a model car of a Toyota, whereas *nihonsee-no mokee-no kuruma* in (75b) might be a Japanese-made model car of a Porsche. In contrast, (76a) and (76b) are synonymous. This contrast is correctly predicted by the analysis proposed in this paper.

4. Conclusion

I have claimed in this paper that there are two types of multiple modifier structures in Japanese: stacked structures and coordinate structures. They are morphologically distinct. Modifiers marked with *-ku* and *-de* occur exclusively in coordinate structures, because they arise from the morphological fusion of Mod and Co. In Japanese, an overt conjunction like English *and* is not used when two prenominal modifiers are conjoined. However, there is no doubt about the existence of a conjunction in such cases. It plays a crucial role in phonological realizations of its conjuncts.

Notes

¹ The morpheme *-no* is also analyzed in the same manner as *-na*.

² An *IVY* reviewer suggested an alternative explanation for the difference between (31) and (33). (33) contain the NP *kinoo-no*, whereas (31) contain the adverb *kinoo*. Then, it might be possible to claim that the adverb *kinoo* requires a past tense marker, whereas the NP *kinoo-no* does not. In (33a), the NP

kinoo-no cannot be replaced by the adverb *kinoo*, as (ia) shows.

- (i) a. *Kinoo subarasi-i konsaato-wa sakunen
 Yesterday terrific-Pres concert-Top last-year
 NY-de dai-ninki da-tta.
 NY-in very-popular Cop-Past
 ‘Yesterday’s terrific concert was very popular in NY a year ago.’
- b. Kinoo subarasi-**katta** konsaato-wa sakunen
 Yesterday terrific-Past concert-Top last-year
 NY-de dai-ninki da-tta.
 NY-in very-popular Cop-Past
 ‘Yesterday’s terrific concert was very popular in NY a year ago.’

If this claim is correct, we cannot consider the intermediate reading observed in (33) as evidence that (33) contain relative clauses. It is necessary to examine some further details of the relation between temporal modifiers and tense markers. I leave this problem open for future research.

³ The rules in (40a-b) apply in an order determined by the condition in (i).

(i) *The Elsewhere Condition*

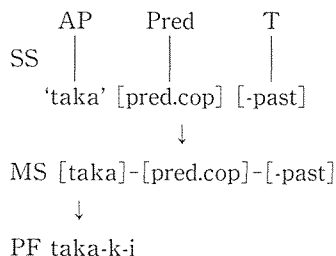
If two rules contain the same feature, the more complicated rule takes precedence. (Nishiyama 1998: 181)

Since only (40a) contains a contextual feature, by Elsewhere Condition in (i), (40a) takes precedence over (40b) in (38).

⁴ This analysis wrongly yields (ia). Nishiyama claims that the correct form in (ib) has the syntactic representation in (ii), where the dummy copula is missing.

- (i) a. *Yama-ga taka-ku-ar-u.
 mountain-Nom high-pred.cop-dum.cop-Pres
 ‘The mountain is high.’
- b. Yama-ga taka-i.
 mountain-Nom high-Pres
 ‘The mountain is high.’

(ii)



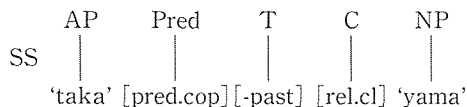
(iii) [-past] <—> /i/ /CA_____

Nishiyama supports the absence of the dummy copula in the present form from the cross-linguistic tendency that present tense does not require an overt form of the dummy copula, as in Hebrew. However, in Japanese, this is only observed in CA examples. The surface form /taka-i/ is obtained by deleting /k/.

⁵ Nishiyama’s analysis of prenominal CAs is similar. Under Nishiyama’s analysis, (i) has the syntactic representation in (ii). The morpheme *-i* is assumed to be a present tense marker. As for the absence of the dummy copula, see note 4.

(i) taka-i yama

(ii)



⁶ Although some languages like English have no overt element that corresponds to these morphemes, Rubin (1994, 1996) provides empirical evidence for Mod from Chinese, Tagalog, Russian, and Romanian.

⁷ I assume that what is responsible for the hybrid classes in (49)–(51) is category changing. There are two types of categorical feature specification for each of the modifiers in (49)–(51). Probably, one usage is basic and the other is derived. Which usage is basic is beyond the scope of this paper.

⁸ Some speakers report that (58b) is more acceptable than (57b). For such speakers, the two modifiers *kaiteki-na* and *ki-no* might belong to the same class.

⁹ As pointed out by an *IVY* reviewer, the binding asymmetry shown in (i) cannot be captured by the structure in (67)

- (i) a. Taroo₁-to kare₁-no joosi-ga syokuji-ni dekake-ta.
 Taroo-and his-Gen boss-Nom to-eat go-out-Past
 'Taroo and his boss went out to eat.'
- b. *Kare₁-to Taroo₁-no joosi-ga syokuji-ni dekake-ta.
 his-and Taroo-Gen boss-Nom to-eat go-out-Past

These examples show that the first conjunct c-commands the second conjunct, but not vice versa. The structure in (67) predicts that (ia) is ungrammatical due to a Binding Condition C violation, and that (ib) is grammatical. I have no solution to this problem at the present and I have to leave it for future research.

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Synopsis

Multiple Prenominal Modifiers in Japanese

Atsushi Takekoshi

Japanese allows multiple prenominal modifiers to modify a single noun. In such cases, all but the rightmost occurrence of *-i* can be replaced with *-ku*. In a parallel way, *-na/-no* can be replaced with *-de*.

- (1) a. hiro-**i** fuka-**i** kawa
 b. hiro-**ku** fuka-**i** kawa
 broad deep river
- (2) a. buree-**na** taikutu-**na** kyaku
 b. buree-**de** taikutu-**na** kyaku
 rude boring guest
- (3) a. tyoosin-**no** kinpatu-**no** josee
 b. tyoosin-**de** kinpatu-**no** josee
 tall blonde lady

The aim of this paper is to clarify the structural difference between the (a) examples and the (b) examples in (1)–(3).

Notice that the modifiers marked with *-ku/-de* are unacceptable in the following examples.

- (4) a. naga-**i** eigo-**no** tango
 b. *naga-**ku** eigo-**no** tango
 long English word
- (5) a. kaiteki-**na** ki-**no** isu
 b. *kaiteki-**de** ki-**no** isu
 comfortable wooden chair
- (6) a. eigo-**no** naga-**i** tango
 b. *eigo-**de** naga-**i** tango
 English long word

Interestingly, the English counterparts of (1)–(3) allow coordination, as shown in (7), while those of (4)–(6) do not, as shown in (8)–(9).

- (7) a. a broad and deep river

- b. a rude and boring guest
- c. a tall and blonde lady
- (8) a. *a long and English word
- b. a long English word
- (9) a. *a comfortable and wooden chair
- b. a comfortable wooden chair

These facts lead us to the conclusion that modifiers marked with *-ku/-de* are coordinated, while modifiers marked with *-i/-na/-no* in multiple modifier constructions are stacked. This is schematically represented in (10).

- (10) a. [XP-*i/-na/-no* [XP-*i/-na/-no* NP]] (stacked structure)
- b. [[XP-*ku/-de* XP-*i/-na/-no*] NP] (coordinate structure)

The morphemes *-i*, *-na*, and *-no* are all members of the same functional category: Mod(ification) in the sense of Rubin (1994). That is, modifiers marked with *-i*, *-na*, and *-no* are uniformly of category ModP. The morphological differences between stacked structures and coordinate structures are captured by the principles of Distributed Morphology (Halle and Marantz 1993). The morphemes *-ku* and *-de* arise from the morphological fusion of Mod and Co(njunction). Although Japanese conjunction has no phonological realization per se, it is crucial in the phonological differentiation between stacked structures and coordinate structures.