

# ON THE NOMINAL-INTERNAL DISTRIBUTIVE INTERPRETATION IN JAPANESE\*

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## 1. Introduction

This paper examines one particular type of distributive interpretation found in sentences containing a numeral quantifier (NQ), which consists of a numeral and a classifier (CL), and the distributive affix *zutsu* (DIST) in Japanese, and attempts to support the hypothesis that NQs are predicates in this language (Miyagawa 1989, Ueda 1986).<sup>1</sup>

Gil (1987) pointed out that (1) allows (at least) three types of interpretation provided in (2a-c):

- (1) Taroo-to-Hanako-ga ni -satsu-zutsu-no hon -o katta (-koto)  
and -NOM two-CL -DIST-GEN book-ACC bought (-fact)
- (2) a. Taroo and Hanako bought two books each.  
b. Taroo and Hanako (as a group or individually) bought two books each at Kinokuniya and Asahiya.  
c. Taroo and Hanako (as a group or individually) bought the books in twos.

The interpretation on which I focus in this paper is the one in (2c). I dub this interpretation *the nominal-internal distributive interpretation* for the reason to be clarified in Section 3. Significantly, as can be seen in this translation, this interpretation can be expressed with *in twos*, *in threes*, and so on in English, but not with a distributive element like binominal *each* (Safir and Stowell 1988).

Choe (1987) examines the Korean counterpart of the distributive affix *zutsu* and argues that the affix in point requires the relationship between two elements. I call these two elements *the distributive key* and *the distributive share* in this paper. For example, in (1) under

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<sup>1</sup> Abbreviations are: ACC (accusative marker), CL (classifier), COP (copula), DAT (dative marker), DIST (distributive affix *zutsu*), GEN (genitive marker), NOM (nominative marker), NQ (numeral quantifier), NQ-DIST (numeral quantifier with distributive affix *zutsu*) and TOP (topic marker).

the interpretation in (2a) the distributive affix *zutsu* requires that Taroo and Hanako (the distributive key) each bought two books (the distributive share). Given this characterization of the distributive affix, the question that must be addressed is which elements are serving as the distributive key and the distributive share under the interpretation in (2c). I believe that this question is closely related to which elements are the distributive key and the distributive share in (3):

- (3) Hon -ga ni -satsu-zutsu-da.  
book-NOM two-CL -DIST-COP

‘The books are in twos.’

The problem is that we have only one overt NP in this example, which is functioning as the distributive share. The reader will see that there is a covert element functioning as the distributive key in this case. This covert element is shown to play a crucial role in the nominal-internal distributive interpretation available in (1) as well. By investigating how the nominal-internal distributive interpretation is realized, this paper attempts to figure out the structure of the NQ-DIST in (1), and clarify the status of NQs in Japanese.

This paper is organized as follows. In Section 2 I first introduce Miyamoto (1994a). Miyamoto proposes an analysis of (1) under (2b), crucially assuming the existence of locative and temporal empty pronouns proposed in Murasugi (1991). Then, based on Miyamoto (1994a), I propose that a locative empty pronoun is functioning as the distributive key in (3). In Section 3 I extend the analysis to (1) under the nominal-internal distributive interpretation shown in (2c). Specifically I argue that under the interpretation in point the pre-nominal NQ-DIST forms a relative clause and a locative empty pronoun serves as the distributive key within this relative clause. In Section 4, I provide supporting evidence for the analysis in Section 3 by examining the nominal *no* licensing by a pre-nominal NQ-DIST. Section 5 turns to discuss why the nominal-internal distributive interpretation is restricted to certain context. In Section 6, based on the present proposal on pre-nominal NQ-DISTs, I proceed to suggest that pre-nominal NQs without the distributive affix *zutsu* can also be situated within NP. Finally Section 7 contains my concluding remarks and directions for future research.

## 2. Locative and Temporal Phrases as the Distributive Key

In order to establish the basis of my proposal concerning the nominal-internal distributive interpretation, we first need to deal with the interpretation of (1) given in (2b). Under this interpretation, although the bookstores under consideration are not overtly represented, they can somehow serve as the distributive key for the distributive affix, provided that context is rich enough to figure out which bookstores are under discussion. Significantly the same type of interpretation is not available in English sentences with binominal *each* that also requires the distributive key (Safir and Stowell 1988), as observed in the contrast between (4a) and (4b):

- (4) a. \*Hanako bought two books each.

- b. Hanako bought two books each at Kinokuniya and Asahiya.

The contrast between (4a) and (4b) shows that it is not the case that locative phrases cannot be a distributive key for binominal *each*, but in English they have to be overtly present in the structure in order to express the intended interpretation. This, in turn, suggests that it is very unlikely that the ungrammaticality of (4a) is semantic in nature. Considering this, Miyamoto (1994a) argues that the (un-)availability of the interpretation in (2b) is due to an independently motivated syntactic difference between these two languages: namely, the existence/lack of empty pronouns.

Based on the thorough investigation of Japanese relative clauses, Murasugi (1991) convincingly argues that Japanese allows locative and temporal empty pronouns. Given that empty pronouns appear only in argument positions, she proposes that locative and temporal empty pronouns are arguments of a predicate/tense (see also Murasugi and Saito 1992). Let us assume in this paper that locative and temporal empty pronouns are arguments of the complex of a predicate and tense, and the empty pronouns in point are adjoined to TP. Given the existence of these empty pronouns, we can assign the structure provided in (5) to (1) under the interpretation in (2b):

- (5) [<sub>TP</sub>Locative *pro* [<sub>TP</sub>Taroo-to-Hanako-ga [<sub>VP</sub>ni-satsu-zutsu-no hon-o katta]]](-koto)

Suppose that the locative empty pronoun in (5) refers to Kinokuniya and Asahiya. This phrase can then serve as a distributive key for the distributive affix, resulting in the interpretation in (2b). Notice that under this analysis, the absence of the same type of interpretation in (4a) naturally follows. English is not a *pro*-drop language, and thus, the English does not allow the same type of structure. In order to express the interpretation under consideration, the locative phrase must be overtly present in the structure, as shown in (4b).

Additional evidence for the covert distributive key under consideration can be found in the contrast between (6a) and (6b):

- (6) a. Sinseki-no hito -ga futa-ri -zutsu Taroo-to-Hanako-ni atta (-koto)  
       relative-GEN person-NOM two-CL-DIST and -DAT met (-fact)

- b. \*Two relatives each met Taroo and Hanako.

The ungrammaticality of (6b) follows from the c-command requirement on binominal *each* that states that the distributive key must c-command binominal *each* (Safir and Stowell 1988). In this example, the object NP *Taroo and Hanako* does not c-command the subject, and thus the binominal *each* and therefore, it cannot serve as the distributive key. As a result, (6b) is ruled out.

In (6a), on the other hand, although the distributive interpretation with the object NP *Taroo-to-Hanako* is hardly available, which indicates that the similar type of c-command requirement is operative with the distributive affix (see Choe 1987: 57 for some relevant

comment), this example is not ungrammatical.<sup>2</sup> It can, for example, describe the situation in which two relatives met Taroo and Hanako in Tokyo and another two relatives met them in Osaka. Again the contrast in (6) naturally follows if we assume that Japanese, but not English, has locative and temporal empty pronouns, which can serve as a distributive key.

Having established that locative and temporal empty pronouns can serve as a distributive key in Japanese, let us now go back to (3), repeated here as (7):

- (7) Hon -ga ni -satsu-zutsu-da.  
book-NOM two-CL -DIST-COP

‘The books are in twos.’

There is also no overt distributive key available in this example. Given that the distributive affix syntactically requires a distributive key, we are led to conclude as in the case of locative and temporal cases above, that there is a covert element functioning as a distributive key in (7) as well. The intuition that we would like to capture is that there are locations (in a broad sense), such as containers and sets, relevant in the context given, and in each of these locations, there are two books. I propose that the locations under consideration are structurally realized with a locative empty pronoun in (7). Accordingly, the structure I assign to this example is as in (8):

- (8) [<sub>TP</sub>Locative *pro* [<sub>TP</sub>hon-ga [<sub>VP</sub>ni-satsu-zutsu-da]]]

Now the distributive affix successfully finds both the distributive key, namely the locative empty pronoun, and the distributive share, which is the NP *hon*. For example, in the context where there are five baskets, each of which contains two books, the locative empty pronoun in point corresponds to *in the baskets*, functioning as the distributive key.

To sum up, in the above-described cases where no distributive key appears to be present in the structure, I propose that a locative empty pronoun is serving as the distributive key. It is worth repeating that this account captures the contrast between English and Japanese without any stipulations on distributivity. Since English is not a *pro*-drop language, a locative empty pronoun is not available in this language and thus, neither is the intended distributive interpretation permitted with binominal *each*.

### 3. Proposal

Now we are ready to return to (1), repeated here as (9), under the nominal-internal distributive interpretation in (2c).

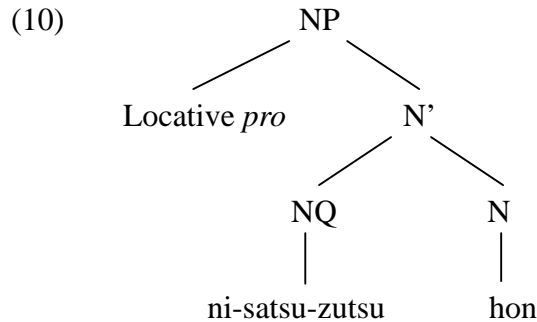
- (9) Taroo-to-Hanako-ga ni -satsu-zutsu-no hon -o katta (-koto)

<sup>2</sup> (6a) may not be as deviant as (6b) (for some speakers) under the interpretation that the distributive affix takes the object NP *Taroo-to-Hanako* as the distributive key.

and        -NOM   two-CL   -DIST-GEN    book-ACC        bought (-fact)

‘Taroo and Hanako bought the books in twos.’ (= [2c])

I would like to extend the analysis of (7) to the case here. I propose that there is a locative empty pronoun inside the object NP in (9), serving as a distributive key for the distributive affix. However, we cannot simply assign the structure in (10) to this NP.<sup>3</sup>



We independently know from the evidence concerning NP-deletion that locative and temporal phrases are not an argument inside a nominal projection. Consider the contrast between (11a) and (11b, c). (11a, b) are cited from Saito and Murasugi (1990).

(11) a. [DP Rooma-no<sub>1</sub> [NP<sub>t1</sub> hakai]] -wa [DP Kyooto-no [NP<sub>e</sub>]] yorimo hisan datta.  
 Rome -GEN destruction-TOP Kyoto -GEN than horrible was  
 ‘Rome’s destruction was more horrible than Kyoto’s.’

b. \*[DP Futa-kire-no hamu]-wa yuusyoku-ni naru ga,  
 two -CL -GEN ham -TOP supper -to make-up though  
 [DP hito-kire-no e]-wa naranai.  
 one-CL -GEN -TOP not-make-up  
 ‘Two slices of ham make up a supper, but one slice of ham does not.’

c. ?\*[DP Tookyoo-de-no syokuji]-wa yokatta -ga, [DP Kyooto-de-no e]-wa  
 Tokyo -in -GEN supper -TOP good-was-though Kyoto -in -GEN -TOP  
 hisan datta.  
 horrible was  
 ‘The supper in Tokyo was good, but Kyoto’s was horrible.’

The contrast between (11a) and (11b) shows that only argument genitive phrases can license NP-deletion. Now notice that (11c), which involves locative genitive phrases, is ungrammatical, parallel to (11b). This shows that inside NP, locative phrases have an adjunct status. Then, a locative empty pronoun cannot appear in the position shown in (10) since

<sup>3</sup> The point that I am going to make holds even if the locative empty pronoun is located in the DP. The choice between NP and DP is immaterial here.

empty pronouns appear only in argument positions. Accordingly, the structure in (10) is not tenable.

Then, we are led to assume that in (9) the locative empty pronoun is with a predicate and tense inside the nominal projection so that the licensing condition for this element is met. This amounts to saying that the locative empty pronoun in point forms a relative clause inside the object NP in this example.

In addition, based on the examination of Korean distributive affix *ssik*, Choe (1987) argues that the distributive key and the distributive share with the distributive affix must be clause-mates. I illustrate this condition with Japanese examples here. Notice that although (12a, b) allow a variety of interpretations, one of which was discussed in Section 2, *Taroo-to-Hanako* can serve as a distributive key only in (12a):

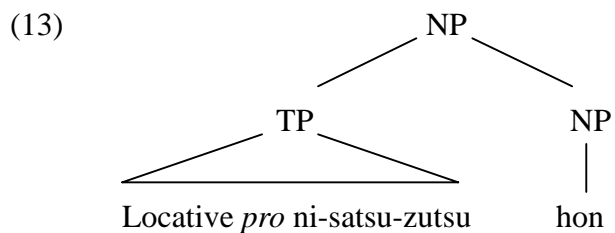
- (12) a. Jiroo-ga [Taroo-to-Hanako-ga hon -o ni -satsu-zutsu katta] -to  
 -NOM and -NOM book-ACC two-CL -DIST bought that  
 itta (-koto)  
 said(-fact)

‘Jiroo said that Taroo and Hanako bought two books each.’

- b. Taroo-to-Hanako-ga [Jiroo-ga hon -o ni -satsu-zutsu katta] -to  
 and -NOM -NOM book-ACC two-CL -DIST bought that  
 itta (-koto)  
 said(-fact)

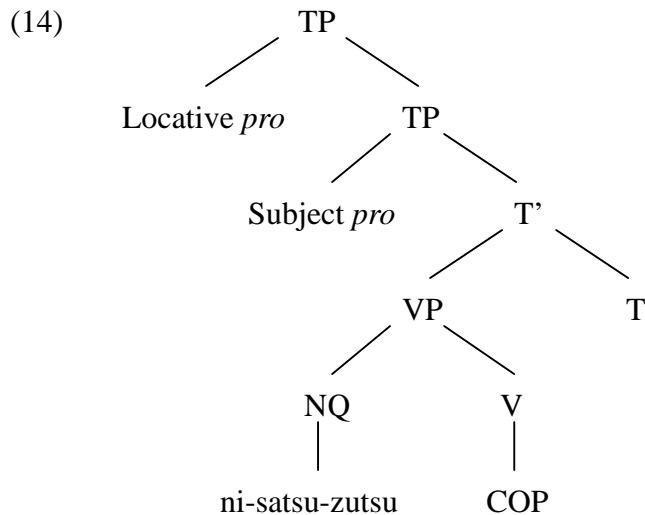
‘Taroo and Hanako said that Jiroo bought two books each.’

Given this clause-mate condition, the NQ-DIST must also be within this relative clause. Accordingly, I propose the structure given in (13):



In (13), the NQ-DIST forms a relative clause. This is not totally surprising since it has been claimed (cf. Kuno 1973, Whitman 1981, Nishiyama 1999) that pre-nominal modifiers can form a relative clause in Japanese (however, see Yamakido 2000 for cautionary note). To be precise, the structure of the TP in (13) is as shown in (14), which is basically the one I assigned to (7):<sup>4</sup>

<sup>4</sup> I should note that the presence of the covert copula in (14) is not crucial to my claim. It may turn out to be the case that the structure of the TP in point is as in (i):



Here we leave aside many important questions concerning the covert subject in (14), but basically following Kuno (1973) and Murasugi (1991), we tentatively assume that this covert subject is an empty pronoun.<sup>5</sup> As far as the value of the T in (14) is concerned, I assume that it is dependent on the matrix event time. Since the NQ-DIST is a relative clause, it is not unnatural that the T of this complex can be bound by the matrix event time as restrictive relative clauses allow the so-called simultaneous interpretation, as illustrated with (15) (see Nakamura 1994; Ogihara 1989, 1996; Stowell 1993, 1995; among others):

(15) John gave a book to the boy who was sick.

Under the simultaneous interpretation the time of the boy's being sick and the time of John's giving a book to the boy denote the same point in time. No matter which specific mechanism one may assume, the way this particular interpretation is analyzed in the literature is basically that the T of a relative clause is bound by the matrix event time. I take the T in (14) being subject to the same mechanism.

Now we have exactly the same situation as in the case of (7), repeated here as (16). It is not surprising at all then that the intended nominal-internal distributivity takes place within the TP in (14):

(16) Hon -ga ni -satsu(-zutsu)-da.  
 book-NOM two-CL (-DIST)-COP

'The books are in twos.'

The only difference between the structure of (16) given in (8), repeated here as (17), and (14) is that in the former the copula is overtly present whereas it is covert in the latter:

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(i) [<sub>TP</sub>Locative *pro* [<sub>TP</sub>Subject *pro* [<sub>xP</sub>ni-satsu-zutsu]]]

<sup>5</sup> I do not devote any time here to the issue of whether the head-raising in the sense of Kayne 1994 takes place in Japanese relative clauses.

(17) [TP<sub>Locative</sub> *pro* [TP<sub>hon-ga</sub> [VP<sub>ni-satsu-zutsu-da</sub>]]]

The availability of the nominal-internal distributive interpretation in (9) then further supports the hypothesis that NQs are predicates; otherwise, they cannot form a relative clause in this example. Notice that the English counterpart of (16) is ungrammatical, as shown in (18) (Miyamoto 1994b):

(18) \*The books are two (each).

Accordingly, English NQs cannot form a relative clause, and thus, neither is the nominal-internal distributive interpretation available in this language.

#### 4. Pre-Nominal Numeral Quantifiers (+ *Zutsu*) and Nominal *No* Licensing

The analysis presented in Section 3 receives additional support from the licensing of the nominal *no* ‘one’. Consider (19):

(19) Hanako-ga (san -satsu-zutsu-no -de -wa naku,) ni -satsu-zutsu-no -o  
 -NOM three-CL -DIST-one-COP-TOP not two-CL -DIS -one-ACC  
 katta (-koto)  
 bought (-fact)

‘Hanako bought the ones in twos (, not the ones in threes).’

The nominal-internal distributive interpretation is clearly available in this example. The NQ-DIST describes the way in which the goods are organized at the time of Hanako buying them. Of importance here is the fact that *no* ‘one’ is successfully licensed in this example.

Kamio (1983) argues that the nominal *no* has to be associated with at least one modifier under NP. For example, a typical predicate *takai* ‘expensive’ can serve this function and can license *no*, as shown in (20a). In contrast, *no* cannot be licensed if such an element is absent, as illustrated in (20b):

(20) a. Hanako-ga takai -no -o katta (-koto)  
 -NOM expensive-one-ACC bought (-fact)

‘Hanako bought (an) expensive one(s).’

b. \*Hanako-ga no -o katta (-koto)  
 -NOM one-ACC bought (-fact)

‘Hanako bought (a) one(s).’

Given this restriction, we have to conclude that it is *ni-satsu-zutsu* that licenses the nominal *no* in (19). This straightforwardly follows from the analysis in Section 3. The NQ-DIST forms a relative clause, and being a relative clause, it is natural that it is located in



the NP (see also section 6). Then, the NQ-DIST should be able to license the nominal *no*, parallel to (21), in which the typical relative clause licenses *no*:

- (21) Taroo-ga [Hanako-ga tukutta]-no -o katta (-koto)  
 -NOM -NOM made one-ACC bought (-fact)

‘Taroo bought the one(s) that Hanako made.’

I take the fact that the NQ-DIST can license the nominal *no* as additional support for the analysis presented in the previous section.

Kamio’s (1983) observation that the nominal-internal distributive interpretation is permitted in (22a, b) also falls under the same analysis.<sup>6</sup>

- (22) a. Taroo-ga ni -hon-no bin -o katta (-koto)  
 -NOM two-CL-GEN bottle-ACC bought (-fact)

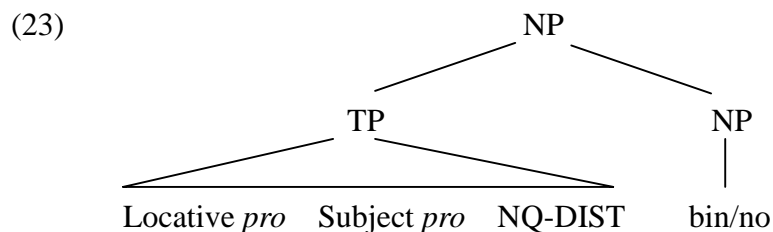
‘Taroo bought the bottles in twos.’

‘Taroo bought two bottles.’

- b. Taroo-ga ni -hon-no -o katta (-koto)  
 -NOM two-CL-one-ACC bought (-fact)

‘Taroo bought the ones in twos.’

According to Kamio, the fact that the nominal-internal distributive interpretation is available in these examples is due to the NQ *ni-hon* functioning as a NP-modifier. Under the present proposal also, the availability of the nominal-internal distributive interpretation follows from the predicate nature of NQs. This interpretation results from the structure provided in (23):



Assuming the existence of the covert counterpart of the distributive affix, (14), repeated here as (24), and the TP in (23) have exactly the same structure, correctly resulting in the nominal-internal distributive interpretation in (22a, b).

<sup>6</sup> Notice that only (22a) can also describe the situation in which Taroo bought two bottles in total. Under this interpretation the NQ *ni-hon* ‘two-CL’ refers to the total number of bottles that Taroo bought. Kamio argues that under this interpretation the NQ occupies SPEC QP. In (22b), if this interpretation is forced, no NP-modifier will be present inside the NP and thus, the nominal *no* cannot be licensed. Therefore, due to the existence of the nominal *no*, (22b) cannot be ambiguous. I do not have an account for this contrast, but see Section 6 for issues concerning positions of pre-nominal NQs, and their implication for the contrast in point. See also Murasugi 1991 for relevant discussion.

(24) [TPLocative *pro* [TPSubject *pro* [VPni-satsu-zutsu COP]]]

### 5. Positions of Numeral Quantifiers (+ *Zutsu*) and the Nominal-internal Distributive Interpretation

So far our discussion has been limited to pre-nominal NQ-DISTs. However, it is well known that NQs, and thus NQ-DISTs, do not have to be located in a pre-nominal position in Japanese. Besides the example in (1), repeated here as (25a), we have two more positions that NQ-DISTs can occupy, as shown in (25b, c):<sup>7</sup>

- (25) a. Taroo-to-Hanako-ga    ni -satsu-zutsu-no    hon -o    katta (-koto) (= [1])  
           and            -NOM two-CL -DIST-GEN    book-ACC bought (-fact)
- b. Taroo-to-Hanako-ga    hon ni -satsu-zutsu-o    katta    (-koto)  
           and            -NOM book two-CL -DIST-ACC    bought    (-fact)
- c. Taroo-to-Hanako-ga    hon -o    ni -satsu-zutsu    katta    (-koto)  
           and            -NOM book-ACC two-CL -DIST    bought    (-fact)

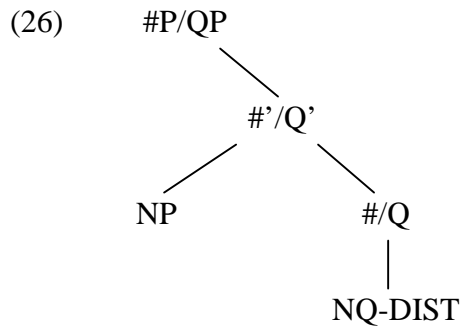
Of importance here is the observation made by Miyamoto (1991) that the nominal-internal distributive interpretation is available only in the case where an NQ-DIST appears in the pre-nominal position. Among the three examples in (25), only (25a) allows such interpretation. (25b, c) cannot mean that Taroo and Hanako (as a group or individually) bought the books in twos. Then, a question naturally arises as to why such interpretation is not permitted in these examples.

The key is the fact that Japanese is a head-final language. Because of this, the relative clause in point cannot follow the head N. Accordingly the structure that is the mirror image of (25a) is not available in (25b, c). Recall also that we are assuming that the locative empty pronoun in point is licensed by the complex of a predicate and tense. Suppose now that the structure of the object NP in (25b) is basically as in (26) without TP (see Murasugi 1991, Kawashima 1998, among others, for relevant discussion):<sup>8</sup>

<sup>7</sup> I assume that (i) is derived from (25c) as a result of the scrambling of the NQ-DIST:

(i) Taroo-to-Hanako-ga    ni -satsu-zutsu    hon -o    katta    (-koto)  
           and            -NOM two-CL -DIST    book-ACC    bought    (-fact)

<sup>8</sup> It should be noted that the choice between #P and QP is not crucial here. The point is the lack of TP in this structure.



Then, there is no way that the locative empty pronoun necessary for the nominal-internal distributive interpretation can be licensed within this nominal projection, and thus, the lack of the interpretation in point results in (25b).

In (25c) also, under the assumption that floating quantifiers are secondary predicates (Miyagawa 1989, Ueda 1986), which are assumed to lack TP, *ni-satsu-zutsu* cannot support the locative empty pronoun within its own projection. Thus, the nominal-internal distributive interpretation is also unavailable in this example.

In sum, the fact that the nominal-internal distributive interpretation is available only with pre-nominal NQ-DISTS is also naturally accounted for under the present proposal.

## 6. Positions of Pre-Nominal Numeral Quantifiers (+ *Zutsu*)

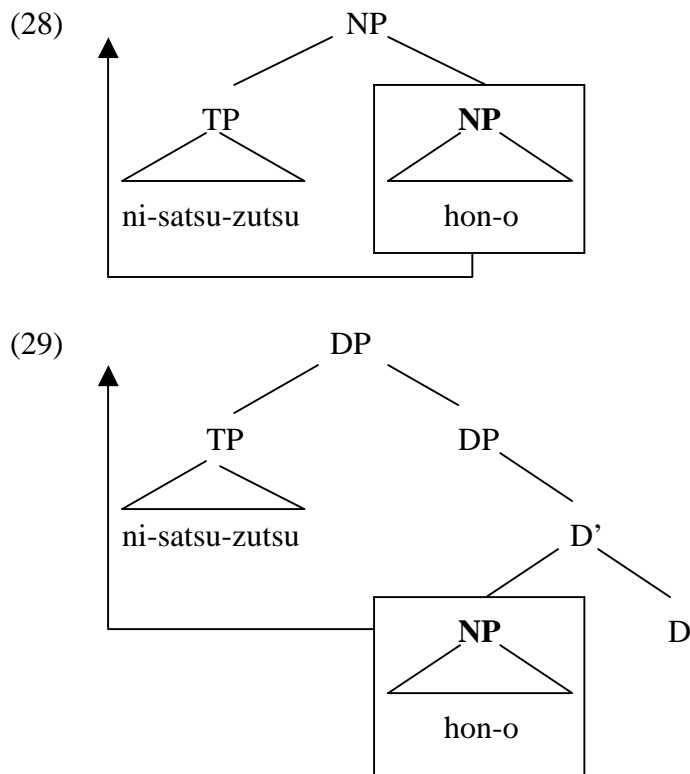
Now, given that my proposal is correct, and if the DP-layer is present in Japanese, it is not unnatural that NQ-DISTS, being a relative clause, can be adjoined to either NP or DP, parallel to restrictive and non-restrictive relative clauses. In this section, I would like to show that NQ-DISTS are necessarily adjoined to NP whereas NQs can be inside NP even if the nominal-internal distributive interpretation is not forced.

The crucial example for our purpose here is (25c), repeated here as (27):

- (27) Taroo-to-Hanako-ga    hon -o            ni -satsu-zutsu katta (-koto)  
       and            -NOM    book-ACC        two-CL -DIST    bought(-fact)

‘Taroo and Hanako bought two books each.’

Recall that this example does not allow the nominal-internal distributive interpretation. This means that the raising of the bolded NP illustrated in (28) and (29) must be prohibited:



First of all, the raising of the lower NP, illustrated in (28), can be prohibited once we assume following Muysken (1982) (see also Chomsky 1995) that minimal and maximal projections are relational properties of categories and only maximal projections are subject to movement operation. Accordingly, the word order in (27) cannot be generated if the NQ-DIST is adjoined to the NP. I should emphasize, however, that this does not mean that NP is not a possible adjunction site for NQ-DISTs. This is in fact what I have shown in previous sections.

In contrast, the situation depicted in (29) is more problematic. Kawashima (1998) and Watanabe (2005) have shown that the type of movement illustrated in (29) is available in Japanese. If such extraction is allowed, however, the word order in (27) is generated, and this example should allow the nominal-internal distributive interpretation, contrary to fact. Considering this, we have to conclude that the NQ-DIST in point cannot be adjoined to the DP.

The impossibility of the TP *ni-satsu-zutsu* being adjoined to the DP may be due to Japanese nominals lacking the DP-layer (see, e.g., Fukui 1986, Fukui and Takano 2000 and Fukui and Sakai 2003). Alternatively, even if the DP-layer is present in Japanese nominals, we may attribute it to the nature of the T in this NQ-DIST complex. Recall that the value of the T in point is dependent on the matrix event time. We independently know that binding into a non-restrictive relative clause is not possible (see Safir 1986 and Demirdache 1991 for relevant discussion). Then, given that binding is a relevant notion for the T-value determination as well, the T of a non-restrictive relative clause, which we assume is adjoined to DP, cannot depend on the matrix event time. Accordingly, the NQ-DIST under consideration has to appear in a position for restrictive relative clauses, namely an

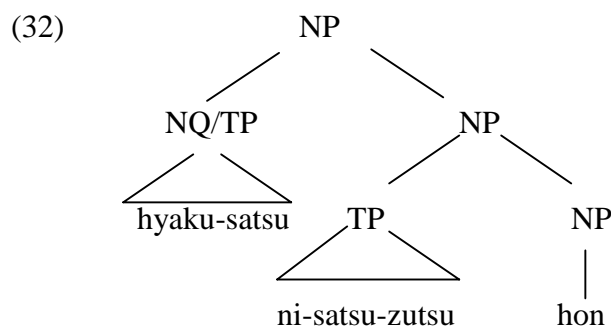
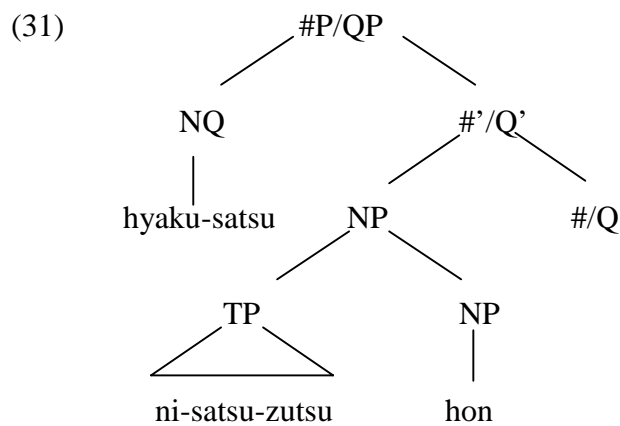
NP-adjoined position, so that the T of the complex can be bound by the matrix event time. If the complex in point appears in a DP-adjoined position, being a non-restrictive relative clause, the value of the T will then be undetermined, which correctly results in the unavailability of the structure in (29).

With this said, now consider (30):

- (30) Hanako-ga (kei) hyaku -satsu-no ni -satsu-zutsu -no hon -o  
 -NOM in total hundred-CL -GEN two-CL -DIST -GEN book-ACC  
 katta (-koto)  
 bought (-fact)

‘Hanako bought one hundred books (in total) that were in twos.’

The object nominal would have the structure in either (31) or (32):<sup>9</sup>



In (30), the NQ-DIST *ni-satsu-zutsu* must be adjoined to the NP whereas the NQ *hyaku-satsu* may be either within the NP or SPEC of #P or QP (see also [26]).

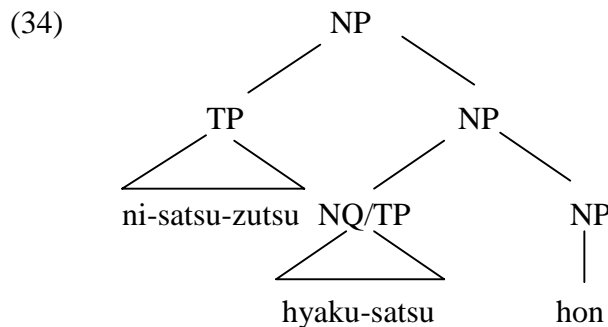
Notice however that not only (30) but also (33) is grammatical:

<sup>9</sup> The DP-layer is omitted in (31) and (32). The point that I would like to make is independent of the status of DP in Japanese. Also, I leave aside issues concerning the internal structure of simple NQs such as *hyaku-satsu* here.

- (33) ?Hanako-ga ni -satsu-zutsu-no (kei) hyaku -satsu-no hon -o  
 -NOM two-CL -DIST-GEN in total hundred-CL -GEN book-ACC  
 katta (-koto)  
 bought (-fact)

‘Hanako bought one hundred books (in total) that were in twos.’

Since the NQ-DIST must be located inside the NP, the NQ, located to the right hand side of this NQ-DIST, must also be situated in the NP. This leads us to conclude that a simple NQ can also be within NP. In other words, it can be a NP modifier, as illustrated in (34):



Given this, it does not become obvious whether in (30) the NQ *hyaku-satsu* is optionally outside the NP. It may be the case that (30) and (33) are the cases where the two NP-modifiers appear in NP-adjoined positions in a different order. If a NQ without the DIST appears as a NP-modifier, it indicates the numerical state of the object under consideration. For example, *hyaku-satsu-no hon* ‘hundred-CL-GEN book’ can be understood as “the books that are one hundred in number”, which is basically the meaning of *one hundred books*.

In sum, I have shown that a simple NQ can also be located within NP even when its intended interpretation is not nominal-internal distributive interpretation (see Comrie 1987 for much relevant discussion concerning pre-nominal NQs in Japanese).

## 7. Concluding remarks and the Direction of Future Research

This paper examined the availability of the nominal-internal distributive interpretation in sentences containing a NQ with the distributive affix *zutsu* in Japanese. I proposed that what appears to be the simple complex of a NQ with the distributive affix, actually turns out to be a relative clause, which must appear within NP. I further showed that simple NQs can also be inside NP. In addition, the analysis presented in this paper constitutes additional evidence for the existence of locative empty pronouns (Murasugi 1991).

The backbone of my proposal is the predicative nature of NQs in Japanese (Miyagawa 1989, Ueda 1986). The property of NQs in point allows us to account for the (un-)availability of the nominal-internal distributive interpretation, and it also makes the licensing of the nominal *no* by a pre-nominal NQ(-DIST) possible. All these considerations naturally lead us

to the question of whether pre-nominal NQs and NQ-DISTs ever appear in SPEC #P or SPEC QP (Kamio 1983, Watanabe 2005, among others).

Saito (2005) suggested that pre-nominal NQs are not in SPEC QP, rather they are NP-modifiers, based on the fact that the NQs in question cannot license NP-deletion, as shown in (11b), repeated here as (35):

- (35) \*<sub>[DP]</sub>Futa-kire-no hamu]-wa yuusyoku-ni naru ga,  
           two -CL -GEN ham -TOP supper -to make-up though  
       <sub>[DP]</sub>hito-kire-no e]-wa naranai.  
           one-CL -GEN -TOP not-make-up

‘Two slices of ham make up a supper, but one slice of ham does not.’

However, if pre-nominal NQs must be NP-modifiers, then the question remains as to why these NQs cannot license the nominal *no*. The relevant examples from Kamio (1983) are repeated in (36):

- (36) a. Taroo-ga ni -hon-no bin -o katta (-koto)  
           -NOM two-CL-GEN bottle-ACC bought (-fact)

‘Taroo bought the bottles in twos.’

‘Taroo bought two bottles.’

- b. Taroo-ga ni -hon-no -o katta (-koto)  
           -NOM two-CL-one-ACC bought (-fact)

‘Taroo bought the ones in twos.’

This illustrates that in order to answer the question of whether pre-nominal NQs CAN or MUST be a NP-modifier in Japanese, we have to settle issues such as the nature of NP-deletion, the licensing of the nominal *no* and a variety of evidence provided by Watanabe (2005). I would like to explore these issues in detail on a separate occasion. As has already been shown in Watanabe 2005, this will ultimately bring us important insight to figure out the nominal architecture of the Japanese language including the status of QP and DP.

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